

DEPARTMENT OF  
**ECOLOGY**  
State of Washington

# **Lower Duwamish Waterway Source Control Status Report January 2012 through December 2012**

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June 2013

Publication No. 13-09-136

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**ECOLOGY**  
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# **Lower Duwamish Waterway Source Control Status Report January through December 2012**

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Produced by

Toxics Cleanup Program  
Northwest Regional Office  
Washington State Department of Ecology  
Bellevue, Washington

and

Science Applications International Corporation  
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With Assistance from:

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King County  
Port of Seattle  
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## List of Acronyms

2LAET	Second Lowest Apparent Effects Threshold
BDC	Boeing Developmental Center
BEHP	bis(2-ethylhexyl)phthalate
BMP	best management practice
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAP	Cleanup Action Plan
CB	catch basin
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CKD	cement kiln dust
CNE	Conditional No Exposure
COC	chemical of concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSL	Cleanup Screening Level
CSO	combined sewer overflow
DDT	dichloro-diphenyl-trichloroethane
DSI	Duwamish Shipyard, Inc.
DW	dry weight
EAA	Early Action Area
Ecology	Washington State Department of Ecology
EDR	engineering design report
EMF	Electronics Manufacturing Facility
EOF	emergency overflow
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
GTSP	Georgetown Steam Plant
HPAH	high molecular weight PAH
HWTR	Hazardous Waste and Toxics Reduction
IAA	Insurance Auto Auctions
ISGP	Industrial Stormwater General Permit
KCIA	King County International Airport
LAET	Lowest Apparent Effects Threshold
LDW	Lower Duwamish Waterway
LDWG	Lower Duwamish Waterway Group
LPAH	low molecular weight PAH
MCL	Maximum Contaminant Limit
MFC	Military Flight Center (Boeing)
mg/kg	milligrams per kilogram
MTCA	Model Toxics Control Act
NA	not applicable or not analyzed
NBF	North Boeing Field
ng/kg	nanograms per kilogram
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
OC	organic carbon
OWS	oil water separator
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene

## List of Acronyms (Continued)

PGG	Pacific Groundwater Group
PLP	potentially liable party
Port	Port of Seattle
PSCAA	Puget Sound Clean Air Agency
PS/WQF	pump station/water quality treatment facility
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RM	river mile
ROD	Record of Decision
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
SCAP	Source Control Action Plan
SCWG	Source Control Work Group
SD	storm drain
SEPA	State Environmental Protection Agency
SIM	Seattle Iron & Metals
SMS	Washington State Sediment Management Standards
SPU	Seattle Public Utilities
SQS	Sediment Quality Standard
SVE	soil vapor extraction
SVOC	semivolatile organic compound
SWPPP	Stormwater Pollution Prevention Plan
TCE	trichloroethene
TCP	Toxics Cleanup Program
TDS	total dissolved solids
TEQ	toxic equivalency quotient
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TSCA	Toxic Substances Control Act
µg/L	micrograms per liter
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VCP	Voluntary Cleanup Program
VOC	volatile organic compound
WDOH	Washington Department of Health
WQ	water quality

## Executive Summary

This report summarizes source control activities conducted by the Lower Duwamish Waterway (LDW) Source Control Work Group between January 1, 2012, and December 31, 2012. Previous status reports (Ecology 2007b, 2008b, 2008e, 2009j, 2011f, 2012i) provided an overview of the LDW site, the strategy for controlling sources of pollutants to the LDW, the process for developing Source Control Action Plans (SCAPs), the methods and process for implementing SCAPs, issues associated with permitted discharges, and a summary of source control actions conducted between 2003 and December 2011. This current report updates this information, including:

- Updated SCAP publication and implementation schedule;
- Status of business inspections, other source tracing activities, site assessments and cleanups, and other source control activities described in previous status reports;
- Public involvement and outreach activities during the subject time period; and
- Source control activities conducted between January 2012 and December 2012 at each of the identified source control areas, including the seven Early Action Areas (EAAs).<sup>1</sup>

### Source Control Action Plans

Since publication of the previous Source Control Status Report, reports summarizing existing information were completed for the following source control areas: River Mile (RM) 2.1 West (1<sup>st</sup> Avenue S SD), RM 0.0-1.0 West (Spokane Street to Kellogg Island), and RM 2.2-2.4 West (Riverside Drive). These reports, known as Data Gaps Reports, were used to prepare SCAPs for these source control areas. The SCAP for RM 2.2-2.4 West (Riverside Drive) was published during the current reporting period (January 2012 through December 2012).

A total of 579 source control action items have been identified based on the 20 SCAPs published as of December 31, 2012; 201 of these action items have been completed, and 8 are not needed or have been combined with another action item (a total of 35 percent). Of the remaining 370 action items, 100 (27 percent of the remaining action items) are considered high priority (to be completed prior to sediment cleanup), 185 (50 percent) are medium priority (to be completed prior to or concurrent with sediment cleanup), and 85 (23 percent) are low priority (ongoing actions or actions to be completed as resources become available). The current status of action items is shown in Figure ES-1.

The action item tally presented above reflects a net increase of 20 action items during the current reporting period as a result of the completion of the Riverside Drive SCAP. A total of 25 action items were completed during this period. Additional action items will be identified as SCAPs are completed for the remaining five source control areas. High priority action items that are not yet

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<sup>1</sup> The LDW Feasibility Study refers to five EAAs. Ecology uses the EAA designation to refer to all seven original candidate EAAs, for consistency with previous reports.

complete, as identified in or subsequent to SCAPs completed through December 2012, are listed in Table ES-1 at the end of this section.

### **Source Control Implementation**

Business inspection and source tracing efforts continue. Under the Urban Waters Initiative, inspectors from the Washington State Department of Ecology's (Ecology) Water Quality (WQ) and Hazardous Waste & Toxics Reduction (HWTR) programs, together with Seattle Public Utilities (SPU) inspectors and Toxics Cleanup Program (TCP) staff, have developed a master list of facilities, priorities for coordinating inspections and avoiding overlap, and a multimedia Source Control Checklist that is being used during source control inspections. SPU conducted 338 inspections at 185 facilities between January 2012 and December 2012, and Ecology conducted 105 inspections at 81 facilities within the LDW basin during this period. In addition, King County inspected 4 facilities located in unincorporated areas of the county.

Source tracing activities are continuing, including collection of sediment trap samples, catch basin samples, and in-line solids samples. Through an interagency agreement between Ecology and SPU, sediment traps were installed and sampled at various locations in the LDW study area. The catch basin and in-line sampling has helped to identify a number of pollutant sources to the LDW. In addition, Ecology conducted a bank sampling study to assess concentrations of contaminants in bank soils at nine locations along the LDW shoreline.

Site characterization or cleanup is in progress at several facilities that are known or suspected threats to LDW sediments. Terminal 117, Rhone-Poulenc, Boeing Plant 2 (which includes part of Jorgensen Forge), and Slip 4 are being managed by the U.S. Environmental Protection Agency (USEPA or EPA). Ecology is managing the following sites under the Model Toxics Control Act (MTCA): Industrial Container Services/Trotsky Property, Douglas Management Company, North Boeing Field-Georgetown Steam Plant, Crowley Marine Services/8<sup>th</sup> Avenue Terminals, Jorgensen Forge (upland portion), Boeing Isaacson/Thompson, Fox Avenue Building, 8801 Site (former PACCAR), Duwamish Shipyard, Glacier Northwest/Reichhold Chemical, Port of Seattle N Terminal 115, Duwamish Marine Center, and Port of Seattle Terminal 108.

Site characterization or cleanup is also in progress at several facilities that are known or suspected threats to human health or the environment, but are not necessarily a source of contaminants to LDW sediments. Cleanup at the former Boeing Electronics Manufacturing Facility (EMF) is being managed by EPA. Ecology is managing the following sites under MTCA: Burlington Environmental, General Electric-Dawson Street Plant, Capital Industries, Art Brass Plating, Blaser Die Casting, and South Park Landfill.

Ecology contractors have sampled soil, groundwater, and sediment at Industrial Container Services (formerly Northwest Cooperage) and Douglas Management Company properties; soil, groundwater and bank soils at South Park Marina; soil and groundwater at Basin Oil Company; and soil, groundwater, and catch basin solids at the Washington State Liquor Control Board.

Ecology updated the assumptions and long-term projection for implementing source control. The schedule for river-wide source control continues to be dependent on the time and resources needed to conduct cleanup at contaminated upland sites. Additional upland sites that may require

site assessment and cleanup continue to be identified as additional SCAPs are completed. Ecology's TCP currently has three full-time site managers and two part-time site managers working on contaminated upland sites in the LDW. The long-term schedule projection for implementing source control assumes that up to 21 upland contaminated cleanup sites will be identified for which Ecology will need to assign one of its full-time or part-time site managers. Work has started at 10 of these sites. The projected schedule estimates that source control from all 20 potentially contaminated upland sites could be implemented by February 2025.

### **Source Control Activities**

Major source control actions completed between January 1 through December 31, 2012, in addition to the business inspections and source tracing described above, are summarized below. Additional information is provided in Sections 4 through 27 for each source control area.

#### *EAA-1 (Duwamish/Diagonal Way)*

- The Port of Seattle (Port) collected groundwater and bank soil samples at Terminals 106 and 108 in December 2012. Preliminary results indicate that metals are present in all locations and petroleum hydrocarbons are present at T108. Polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in any of the groundwater samples. PCBs were detected in one bank soil sample.
- ConGlobal was inspected in November 2012. At this inspection it was determined that adequate stormwater treatment was not properly implemented at this facility. Ecology is pursuing a formal enforcement action.
- In early 2012, Rainier Commons completed a demonstration project to remove paint from an area that is generally representative of the exterior PCB paint at the property. The demonstrations provided data on paint removal technologies, and their performance on Rainier Commons structures. EPA Region 10 is working with Rainier Commons to develop a plan and schedule for exterior paint removal and for several smaller interior projects.
- SPU resampled two catch basins on and downstream of the Rainier Commons property, as well as a maintenance hole downstream of the property in July 2012. The samples contained elevated levels of PCBs. According to SPU, these data indicate that PCBs continue to migrate off this site. SPU issued a Notice of Violation (NOV) to Rainier Commons and required them to re-clean the drainage system.

#### *EAA-2 (Trotzky Inlet)*

- Ecology conditionally approved the revised Remedial Investigation/Feasibility Study (RI/FS) Work Plan submitted by Industrial Container Services in February 2012.
- Douglas Management completed an RI/FS Work Plan in February 2012. Ecology and the property owner are negotiating details regarding the Work Plan.

EAA-3 (Slip 4)

- 8<sup>th</sup> Avenue Terminals installed a new stormwater system to replace a collapsed line that formerly drained the northern portion of the property in July and August 2012. The new stormwater system is connected to an existing outfall to Slip 4.
- Crowley Marine Services submitted a draft final RI/FS Work Plan to Ecology in March 2012. Ecology and Crowley Marine Services are continuing to negotiate the content of the RI.
- Ecology updated King County International Airport's (KCIA's) Industrial Stormwater General Permit (ISGP) to include all industrial activities at the airport. KCIA subsequently updated its SWPPP to address these additional activities.
- KCIA sampled and cleaned six oil-water separators in October 2012, within the north basin. Samples collected at these structures exceeded the Sediment Quality Standard (SQS)/Lowest Apparent Effects Threshold (LAET) for PCBs, metals, PAHs, and BEHP.
- KCIA completed the Taxiway Alpha Rehabilitation Project with the repair/replacement/abandonment of damaged stormwater drainage lines in the north area. The system became operational in summer 2012.
- Source control activities conducted at the at the North Boeing Field (NBF)/Georgetown Steam Plant (GTSP) site in 2012 are listed below. Additional detail is provided in Section 6.
  - Ecology continued to prepare the Draft RI/FS work plan (January-December 2012).
  - Fence-Line Interim Action was completed (January 2012).
  - Boeing continued to operate and monitor the NBF Long-Term Stormwater Treatment System (January-December 2012).
  - Boeing continued paint abatement and storm drain cleaning activities (January-December 2012).
  - KCIA completed a groundwater monitoring investigation on property adjacent to the GTSP (January-March 2012).
  - Boeing completed an analysis of substrate injections into a volatile organic compound (VOC) groundwater plume located in the 3-360 and 3-800 areas (August 2012).
  - Ecology's contractor completed a technical memorandum documenting the comparison of stormwater solids sampling by centrifuge and filter bag methods (December 2012).

EAA-4 (Boeing Plant 2/Jorgensen Forge)

- Boeing obtained a Section 404 Permit from the U.S. Army Corps of Engineers (USACE) on December 31, 2012, for work at Boeing Plant 2. Dredging is scheduled to begin in early January 2013.

- A treatment system and stormwater conveyance system was installed at the Jorgensen Forge site in late 2012 and is scheduled to go on-line in the middle of January.
- Sampling conducted at the end of the Boeing/Jorgensen 24-inch boundary pipe (former KC-Jorgensen discharge) indicated that PCBs are present in soils and require removal.
- EPA reviewed and approved a Certification of Completion for the Jorgensen Forge Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Administrative Order on Consent in February 2012.
- EPA and Earle M. Jorgensen negotiated a new Administrative Settlement Agreement, Order on Consent, and Statement of Work for the Jorgensen Forge site (CERCLA Order No. 10-2013-0032).

*EAA-5 (Terminal 117)*

- The City of Seattle started cleanup of the yards adjacent to T-117 in 2012. This work is scheduled to be complete in 2013. The Port is scheduled to begin the T-117 sediment and upland cleanup in 2013. The City is scheduled to begin the adjacent street cleanup in 2014.
- On June 10, 2012, the Port's contractor collected samples and tested surface solids from paved areas adjacent to catch basins at T-117. PCBs were detected at concentrations above screening levels.

*EAA-6 (Boeing Isaacson/Central KCIA)*

- Boeing completed the RI sampling for the Boeing Isaacson/Thompson site in 2012. The draft RI report is due to Ecology in February 2013.
- Ecology and the Port of Seattle started discussions regarding the Port's property along the shore of the Isaacson property. Boeing and the Port completed a preliminary investigation for metals in soil and groundwater on the Port property.
- KCIA completed the Taxiway Alpha Rehabilitation Project, with the installation of a water quality vault north of the pump station and the repair, replacement, or abandonment of damaged stormwater drainage lines in the central area. The system became operational in November 2012. The project was expected to reduce groundwater infiltration into the storm drain system, and potentially reduce iron bacteria precipitate, which affects turbidity.
- On October 2012, KCIA cleaned the central catch basins in the KCIA central basin during the final completion of the Taxiway Alpha Project.
- Ecology updated KCIA's ISGP to include all industrial activities at the airport. KCIA subsequently updated its SWPPP to address these additional activities.

*EAA-7 (Norfolk CSO/SD)*

- Boeing submitted the 2011 Annual Sampling Report for post-removal monitoring associated with the south storm drain system at Boeing Developmental Center (BDC), in

March 2012. The purpose of this sampling was to evaluate the source control measures within the south storm drain system by monitoring PCB concentrations in the backfill material over time. The results of this sampling showed that sample S1-041111 was above the SQS with a TOC-normalized total PCB concentration of 23 milligrams per kilogram (mg/kg) organic carbon (OC), and the duplicate sample (S4-041111) was also above the SQS with a concentration of 15 mg/kg OC. Both the primary sample and the duplicate sample from the S-1 location were below the CSL (65 mg/kg OC). The other two sampling locations had PCB concentrations below the SQS.

- Boeing conducted annual sampling in the south storm drain system at the BDC in August 2012.
- Boeing collected a solids sample from an oil water separator (OWS) at the Military Flight Center (MFC) in August 2012.

*RM 1.2-1.7 East (St. Gobain to Glacier Northwest)*

- Burlington Environmental performed cleanup actions, including soil excavations, on an adjacent property owned by Union Pacific Railroad (Argo Yard) in September and October 2012.
- Art Brass Plating submitted phase I and phase II data to Ecology in March and June 2012, respectively.
- Ecology conditionally approved revised RI Reports for Art Brass Plating, Blaser Die Casting, and Capital Industries in 2012.
- Capital Industries submitted a draft 2012 Groundwater Monitoring Plan. The plan included installation of several new wells down gradient of the company's property, near the LDW.
- Ecology and GE Aviation worked on a consent decree and CAP to implement in situ chemical oxidation with groundwater hydraulic control as the final facility remedy for the GE Aviation site in 2012. The available data suggest that the offsite trichloroethene (TCE) plume has not reached the LDW and the site remedy should prevent this possibility from occurring in the future.

*RM 1.7-2.0 East (Slip 2 to Slip 3)*

- Duwamish Marine Center submitted a second draft RI/FS Work Plan to Ecology in June 2012.
- Scougal Rubber Corporation submitted a technical memorandum to Ecology in December 2012 that summarizes the remedial actions conducted from September 2011 through September 2012. The groundwater remediation system was turned off in September 2011. An unsatisfactory rebound in groundwater concentrations was observed in November 2011. The groundwater treatment system was turned on again and remained on through September 2012. No groundwater monitoring samples were collected between December 2011 and September 2012.

*RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)*

- Ecology and the potentially liable parties (PLPs) for the Fox Avenue Building site signed Agreed Order DE-8985 on June 18, 2012.

*RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)*

- Ecology is in the process of modifying the National Pollutant Discharge Elimination System (NPDES) permit and treatment requirements for Seattle Iron & Metals (SIM). The company submitted a new permit application and Ecology expects to issue the new permit in 2013. The new permit will consider runoff from the main yard and will require treatment of roof and employee parking area runoff.
- Ecology issued a Notice of Violation and a \$15,000 penalty to SIM for permit and water quality violations. As part of a settlement agreement of the penalty appeal, SIM agreed to implement improved source control measures and submit an engineering report.
- The City of Seattle and SIM entered into a Voluntary Compliance Agreement on February 3, 2012. SIM has violated the City of Seattle stormwater code since 2010. This agreement outlines work that SIM must do to address roof drains, track out, and storm drain cleaning. The agreement includes the installation of a Filterra system to treat stormwater runoff entering the catch basin at the entrance to SIM, which drains to the S Myrtle Street SD, to prevent future violations of the City of Seattle's stormwater code.

*RM 3.9-4.3 East (Slip 6)*

- PACCAR submitted a final RI report and a draft focused FS for the uplands portion of the 8801 East Marginal Way S site to Ecology in February 2012.
- Bravo Environmental cleaned and inspected Insurance Auto Auctions' (IAA's) interceptor pipe at the 8801 East Marginal Way S site, in preparation for a slip lining project, in September 2012.

*RM 4.3-4.9 East (Boeing Developmental Center)*

Boeing completed the 2011 Annual Sampling Report for the post-removal monitoring associated with the south storm drain system at BDC in 2012.

*RM 1.3-1.6 West (Glacier Bay)*

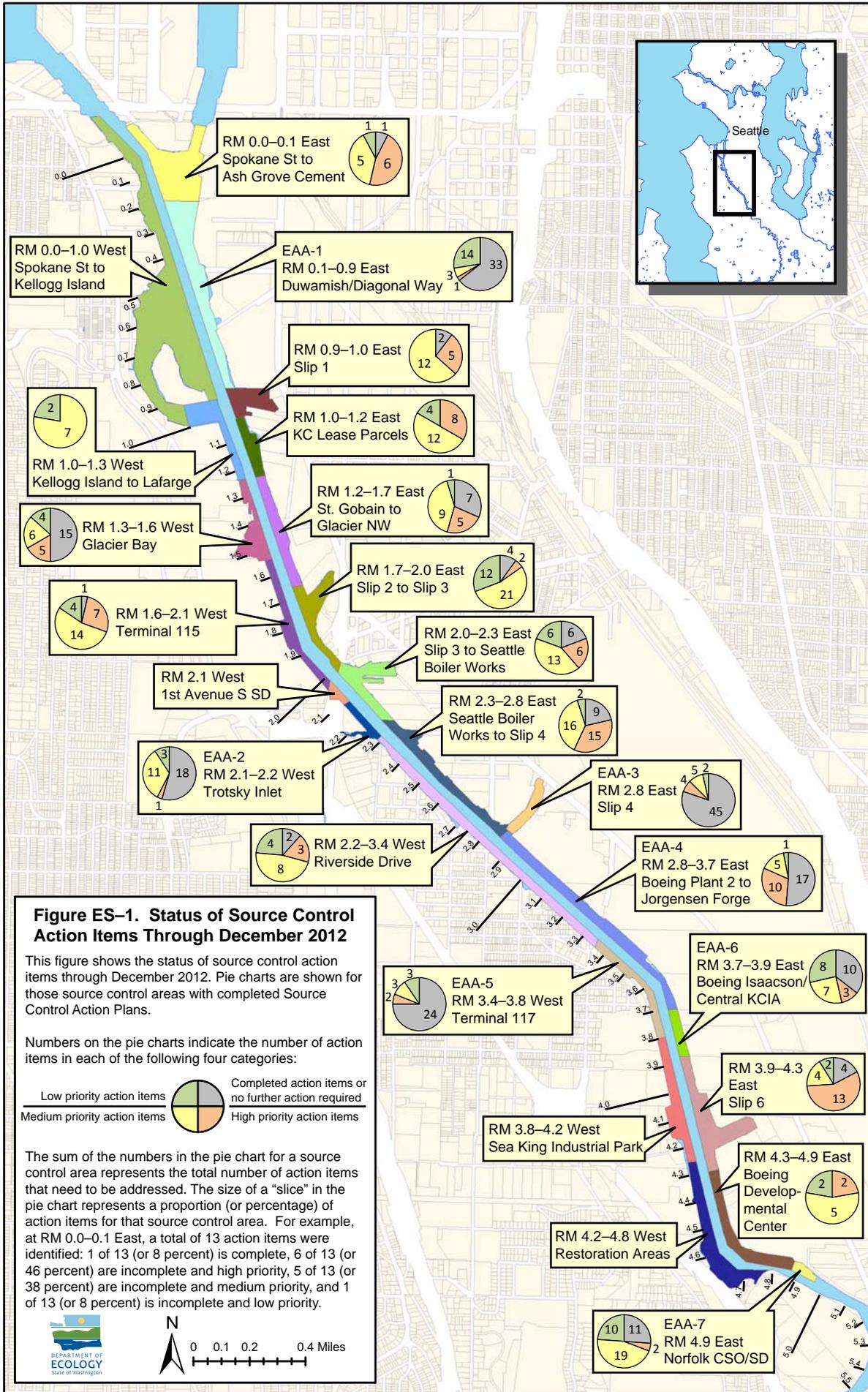
- Duwamish Shipyard submitted a draft supplemental RI Work Plan to Ecology in May 2012. Ecology commented on this Work Plan and met with the PLPs in August and October 2012. In December 2012, Ecology sent a formal comment letter to Duwamish Shipyard, requiring receipt of the Final Work Plan by March 15, 2013. Duwamish Shipyard sent Ecology a Request for Dispute Resolution, objecting to the scope of additional site characterization work that Ecology required in the December comment letter.
- Ecology received a revised Final RI/FS Work Plan for the Glacier Northwest/Former Reichhold site in May 2012. Ecology concluded that insufficient progress was made by

the PLPs on the Work Plan. On August 31, 2012, Ecology finalized, approved, and issued a Final Work Plan, which was prepared by Ecology's contractors. Glacier Northwest and Reichhold each sent a Notice of Dispute to Ecology in September 2013. In their Notice of Dispute, Glacier and Reichhold objected to Ecology's determination that the PLPs had made insufficient progress toward completion the RI/FS Work Plan under the Agreed Order. Glacier and Reichhold also objected to Ecology's work plan based on that determination. On November 13, 2012, the PLPs elevated the dispute through a Request for Section Manager Review, as per the Agreed Order process for resolving disputes.

- The Port submitted an updated RI Work Plan, Sampling and Analysis Plan (SAP), Quality Assurance Plan, Letter and Work Plan Comment Sheet for the N Terminal 115 site to Ecology in June 2012.
- On December 5, 2012, SPU issued a Corrective Action Required Notice to a Port onsite tenant at Terminal 115 for several code violations noted in the November 28, 2011 inspection.

*RM 2.2-3.4 West (Riverside Drive)*

- Ecology, EPA, King County, and the City of Seattle conducted a source control investigation and sampling in the vicinity of Independent Metals Plants 1 and 2 to determine where runoff from these facilities is discharged. Ecology and SPU inspected Plant 1 and observed significant petroleum sheening on the puddles at the unpaved parking lot located on 7<sup>th</sup> Avenue S. A sample of the stormwater runoff from the parking lot was collected as it flowed into the 7<sup>th</sup> Avenue S SD. The sample analysis revealed that very high concentrations of PCBs (7.2 µg/L) were present in the stormwater runoff. SPU and Ecology identified one or more PCB sources to the city storm drain system (7<sup>th</sup> Avenue S SD). The PCB concentrations declined after Independent Metals made the changes requested by SPU and Ecology. Independent Metals is also working with King County to determine appropriate pretreatment for discharges of contaminated industrial stormwater from Plant 1 to the combined sewer.
- Ecology issued a \$14,000 penalty and Notice of Violation to Independent Metals in July 2012 for PCB discharges and violations of their NPDES ISGP.



**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
<b>Early Action Area 1 (RM 0.1-0.9 East; Duwamish/Diagonal Way)</b>					
Rainier Commons / Former Rainier Brewery Property	Sample and remove PCB-contaminated building materials, including interior paint, as needed.	New	EPA/Property Owner	In Progress	2013
<b>Early Action Area 2 (RM 2.1-2.2 West; Trotsky Inlet)</b>					
2nd Avenue S SD	Continue source tracing to identify sources of phthalates and other COCs.	SCAP	SPU	In Progress	TBD
<b>Early Action Area 3 (RM 2.8 East; Slip 4)</b>					
NBF-GTSP	Conduct RI/FS and implement interim actions (as needed).	New	Ecology, Boeing, City of Seattle, King County	In Progress	2014
North Boeing Field	Continue source tracing in north drain line to identify and/or eliminate transport of PCBs to Slip 4.	Follow-On	Boeing	In Progress	2013
	Determine impact of remaining joint sealant material on PCB concentrations in stormwater.	Follow-On	Ecology	Ongoing	2013
North Boeing Field / KCIA / I-5 Storm Drains	Reinstall sediment traps and continue monitoring as needed.	SCAP	SPU, Boeing	Ongoing	2014
<b>Early Action Area 4 (RM 2.8-3.7 East; Boeing Plant 2 to Jorgensen Forge)</b>					
Boeing Plant 2	Complete design and implementation of dredging, capping, and/or backfilling of the Duwamish Sediment Other Area Interim Measure.	SCAP	EPA, Ecology, Boeing	In Progress	TBD
	Continue quarterly shoreline groundwater monitoring.	SCAP	EPA, Boeing	In Progress	TBD
	Conduct stormwater source control sampling of suspended solids and/or water along active storm drain lines.	New	Boeing	In Progress	TBD
	Implement catch basin solids sampling program.	New	Boeing	In Progress	TBD
	Remove contaminated bank fill material.	SCAP	EPA, Boeing	Planned	TBD
	Excavate PCB-contaminated soil in the substation area (southwest corner of Plant 2).	New	Boeing, Jorgensen	Planned	TBD
	Conduct a joint hydrologic investigation with Jorgensen Forge to provide additional hydrogeologic data at the boundary of the two facilities.	SCAP	Boeing, Jorgensen	Planned	TBD
	Collect in-line sediment samples in the City of Seattle and City of Tukwila systems immediately prior to discharge to Plant 2's storm drain system.	SCAP	EPA, Boeing	Planned	TBD
Jorgensen Forge	Develop a hydrogeologic site model as part of the source control investigation to characterize the groundwater system on site, including tidal influence.	SCAP	Jorgensen, Boeing	In Progress	TBD
	Implement Non-Time Critical Removal Action.	Follow-On	EPA, Jorgensen	In Progress	TBD
<b>Early Action Area 5 (RM 3.4-3.8 West; Terminal 117)</b>					
Adjacent Streets/Dallas Avenue	Continue monitoring of stormwater and catch basin sediments.	Follow-On	SPU, Port of Seattle	Ongoing	TBD
Terminal 117	Conduct removal action in accordance with EPA Enforcement Order on Consent.	Follow-On	City of Seattle, Port of Seattle	In Progress	2014

**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
<b>Early Action Area 6 (RM 3.7-3.9 East; Boeing Isaacson/Central KCIA)</b>					
Boeing Isaacson/Thompson Site	Characterize contaminant concentrations in subsurface soil near the former location of the Slip 5 outfall, to the north of the 48-inch storm drain line, and at other locations on the property as needed.	SCAP	Boeing	Planned	TBD
	Conduct a comprehensive soil and groundwater investigation at this property, including groundwater monitoring at selected wells and evaluation of potential arsenic sources; include wet and dry season samples.	SCAP	Boeing	Planned	TBD
	If COCs in soil and groundwater are present at concentrations that pose a risk of sediment recontamination, then develop a plan for controlling these contaminant sources.	SCAP	Ecology, Boeing	Planned	TBD
<b>Early Action Area 7 (RM 4.9 East; Norfolk CSO/SD)</b>					
Boeing Developmental Center (BDC)	Continue sediment monitoring in the vicinity of the south storm drain sediment removal activities.	SCAP	Boeing	In Progress	TBD
	Continue monitoring storm drain solids.	SCAP	Boeing	In Progress	TBD
<b>RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)</b>					
Ash Grove Cement	Negotiate an agreed order for a Remedial Investigation/ Feasibility Study that will focus on potential soil and groundwater contamination at the site.	SCAP	Ecology, Property owner/operator	Planned	TBD
	Conduct additional source control inspections to ensure compliance and implementation of BMPs.	SCAP	Ecology, SPU	Planned	TBD
Harbor Marina Corporate Center / Port of Seattle Terminal 102	Demonstrate that the marina is in compliance with all applicable permits.	SCAP	Port of Seattle	Planned	TBD
Port of Seattle Terminal 104	Determine how to address identified data gaps in the western portion of T-104.	SCAP	Ecology, Port of Seattle	Planned	TBD
	Ensure that storm drain structures and function are completely delineated and properly permitted. Existing drainage problems have been identified and need to be addressed.	SCAP	Ecology, Port of Seattle	Planned	TBD
	Review post remediation reports and annual report as part of the Voluntary Cleanup Program and determine whether further action is needed.	SCAP	Ecology	Planned	TBD
<b>RM 0.9-1.0 East (Slip 1)</b>					
Federal Center South	Perform Site Hazard Assessment.	SCAP	Ecology	Planned	TBD
Former Snopac Products Property	Collect additional samples from Seep 76 to determine if the arsenic concentration reported in 2004 was an anomaly. Analyze sample for all sediment COCs.	SCAP	Ecology	Planned	TBD

**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
Manson Construction Company	Collect additional samples from Seep 76 to determine if the arsenic concentration reported in 2004 was an anomaly. Analyze sample for all sediment COCs.	SCAP	Ecology	In Progress	TBD
	Obtain laboratory data and site plans from historical site assessment(s) and remediation performed at the property. Confirm that satisfactory completion of soil cleanup activities was achieved. Determine if arsenic or other sediment COCs are present in soil and groundwater beneath the facility at concentrations that may recontaminate sediments.	SCAP	Ecology	Planned	TBD
	If satisfactory soil cleanup was not achieved, require the property owner/operator to conduct a site assessment to determine residual concentrations of sediment COCs in soil and groundwater beneath the property.	SCAP	Ecology	Planned	TBD
<b>RM 1.0-1.2 East (KC Lease Parcels)</b>					
Cadman Seattle, Inc. and Lehigh Northwest	Conduct a follow-up business inspection of Cadman and Lehigh Northwest to verify compliance with Ecology's 2007 and 2009 recommendations, applicable regulations, and BMPs to prevent the release of contaminants to the LDW.	SCAP	Ecology	Planned	TBD
	Require Cadman and Lehigh Northwest to report when discharges to Outfall No. 2244 occur to allow Ecology to track overflow events and evaluate potential impacts to the LDW.	SCAP	Ecology	Planned	TBD
	Review the updated Stormwater Pollution Prevention Plan (SWPPP), when completed, to ensure compliance with Ecology's requirements.	SCAP	Ecology	Planned	2/15/2013
J.A. Jack & Sons	Conduct a follow-up inspection of J.A. Jack to verify compliance with corrective actions identified by Ecology in 2007 and SPU in 2009, applicable regulations, and BMPs to prevent the release of contaminants to the LDW.	SCAP	Ecology	Planned	1/15/2013
	Evaluate the onsite stormwater collection system to determine its efficiency since Ecology inspectors observed stormwater flowing to the catch basins on the St. Gobain facility.	SCAP	Ecology	Planned	TBD
	Obtain additional information, through facility inspections/ observations or environmental sampling, to determine if discharges from the Pinch Point area are permissible and if these discharges are a potential source of sediment recontamination.	SCAP	Ecology	Planned	TBD

**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
Manson Construction Company	Conduct a follow-up inspection at the Manson Construction facility to determine if corrective measures have been implemented and to ensure that operations at Manson Construction are in compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW. Assess whether the facility should apply for coverage under the Industrial Stormwater General Permit.	SCAP	Ecology	Planned	TBD
	Determine if the catch basin on the Manson Construction facility that was identified by the City of Seattle and field-verified by King County is connected to the Cadman stormwater system.	SCAP	King County, Ecology	Planned	TBD
<b>RM 1.2-1.7 East (Saint Gobain to Glacier Northwest)</b>					
Certaineed Gypsum	Review response to EPA 104(e) Request for Information letter sent to Certaineed Gypsum in July 2008.	SCAP	Ecology	Planned	TBD
Longview Fibre Paper and Packaging	Review response to EPA 104(e) Request for Information letter sent to Longview Fibre Paper and Packaging in March 2008.	SCAP	Ecology	Planned	TBD
	Review the latest groundwater monitoring report regarding exceedances of diesel-range hydrocarbons.	SCAP	Ecology	Planned	TBD
Saint Gobain Containers Inc.	Review response to EPA 104(e) Request for Information letter sent to Saint Gobain Containers Inc. in July 2008.	SCAP	Ecology	Planned	TBD
	Determine appropriate engineering controls for the inaccessible contamination located beneath the soil/water separator described in the 1991 Limited UST Assessment.	SCAP	Property owner/operator	Planned	TBD
<b>RM 1.7-2.0 East (Slip 2 to Slip 3)</b>					
Duwamish Marine Center	Determine the status of Outfalls 2021 and 2022; if they are currently in use, determine the area drained by these outfalls and assess the potential for COCs to reach the LDW via this pathway.	SCAP	SPU, Ecology	Planned	Jan-14
	Require the property owner/operator to collect data on concentrations of chemical contaminants in river bank soils to assess the potential for sediment recontamination by erosion.	SCAP	Ecology	Planned	Jan-14
<b>RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)</b>					
Glacier Marine Services	Conduct a source control inspection to clarify issues related to storm drain system configuration and location of outfalls, sanitary sewer connections, and current activities at the facility as identified in the SCAP; conduct storm drain sampling as needed.	SCAP	SPU, Ecology	Planned	TBD
	Conduct in-line storm drain sampling to evaluate whether COCs are migrating to LDW sediments via the Glacier Marine Services storm drain system.	SCAP	SPU, Ecology	Planned	TBD

**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
Riverside Industrial Park	Conduct a source control inspection to address the two former shop building floor drains, determine if storm drain lines between the shop building and office building pass through areas where contaminated soil has been excavated, and conduct in-line storm drain sampling as needed.	SCAP	Ecology, SPU	Planned	TBD
S Brighton Street CSO/SD	Conduct source tracing in the S Brighton Street CSO/SD basin.	Follow-On	SPU, Ecology	In Progress	TBD
S River Street SD	Conduct source tracing in the S River Street SD basin.	Follow-On	SPU, Ecology	In Progress	TBD
Seattle Distribution Center	Conduct a source control inspection to determine whether the facility needs an NPDES permit, and confirm the presence of discharge points to the LDW including Outfall 2025 and an additional private storm drain line.	SCAP	SPU, Ecology	In Progress	TBD
<b>RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)</b>					
Crowley Marine Services	In conjunction with an Agreed Order for the Crowley Marine Services site, perform additional investigations that include collection of data on chemical concentrations in soil and groundwater at the western and southern portions of the property.	SCAP	Property owner/operator	Planned	2014
	Review information submitted to EPA in response to the Request for Information 104(e) letters sent to Crowley Marine Services, Samson Tug and Barge Company, Northland Services, and Evergreen Marine Leasing.	SCAP	Ecology	Planned	TBD
	Collect stormwater and/or solids samples from storm drain system to determine if onsite system is source of COCs found in waterway sediment.	SCAP	Ecology	Planned	2014
Guimont Parcel (Dawn Foods/former Bunge Foods)	Review responses to EPA's Request for Information 104(e) letters sent to William P. Guimont, Fox Avenue Warehouse Corporation, Bunge Foods Processing LLC, and Dawn Food Products, Inc.	SCAP	Ecology	Planned	TBD
Nitze-Stagen/Frye Parcels	Review responses to EPA's Request for Information 104(e) letters sent to Nitze-Stagen and Pioneer Human Services.	SCAP	Ecology	Planned	TBD
Puget Sound Truck Lines	Review responses to EPA's Request for Information 104(e) letters sent to Puget Sound Truck Lines and R&A Properties LLC.	SCAP	Ecology	Planned	TBD
	Determine whether the five outfalls identified at the property are active, and identify the source of discharge from these outfalls, if any.	SCAP	Ecology, Property owner/operator	Planned	TBD

**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
Seattle Boiler Works, Inc.	Conduct follow-up inspections to the June 2007 stormwater compliance inspection as needed to verify that deficiencies noted during the inspection have been corrected. Obtain an updated facility plan showing the locations of all catch basins, maintenance holes, storm drain lines, stormwater conveyance lines, and outfalls and field verify the locations of these drainage system features.	SCAP	Ecology	In Progress	TBD
	Review responses to EPA's Request for Information 104(e) letters sent to Fred Hopkins/Seattle Boiler Works, Inc., Frank H. Hopkins Family LLC, and National Steel Construction Company, and identify additional data gaps/source control action items as needed.	SCAP	Ecology	Planned	TBD
	Determine if the five outfalls that are not included in Seattle Boiler Work's NPDES permit are in use. If in use and Seattle Boiler Works is the source of discharge, modify the facility's stormwater permit to include these outfalls.	SCAP	Ecology	Planned	TBD
	If Seattle Boiler Works is not the source of discharges to these five outfalls, perform source tracing to identify potential sources discharging to the outfalls.	SCAP	Ecology/SPU	Planned	TBD
Seattle City Light Georgetown Pump Station	Determine if the drainage ditch/pipe is active and if it discharges to the LDW. If active, determine the area drained by the drainage ditch/pipe and determine the potential for sediment COCs to reach the LDW.	SCAP	Ecology, SPU	Planned	TBD
Seattle Iron & Metals Corporation	Review responses to EPA's Request for Information 104(e) Letter sent to Seattle Iron & Metals, Manson Construction Company, Othello Street Warehouse Corporation, and The Maust Corporation in July 2008.	SCAP	Ecology	Planned	TBD
	Request information from the facility operator regarding the source of discharge, if any, to Outfall 2034, observed along the Seattle Iron & Metals shoreline during SPU's outfall survey.	SCAP	Ecology	Planned	TBD
SPU Storm Drains and Outfalls	Conduct source tracing to identify potential contaminant sources to stormwater discharging to the LDW through the S Myrtle Street and S Garden Street outfalls.	SCAP	SPU	In Progress	TBD

**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
<b>RM 3.9-4.3 East (Slip 6)</b>					
8801 Site (Former PACCAR Site)	Re-evaluate existing soil and groundwater data and compare to site-specific screening levels (to be developed) for metals, PAHs, petroleum hydrocarbons, PCBs, SVOCs, and VOCs as COCs in the LDW, and test for dioxin/furans.	SCAP	Ecology, Property owner/operator	In Progress	TBD
	Expand investigation of the southwest storage area and northwest corner of the site to determine the extent of soil and groundwater contamination.	SCAP	Ecology, Property owner/operator	In Progress	TBD
	Complete Phase 2 of the Sediment Evaluation Work, which includes sediment core sampling in selected locations in the LDW adjacent to the site.	SCAP	Ecology, Property owner/operator	In Progress	TBD
	Negotiate expanding the stormwater and storm drain solids monitoring to add COCs at the site. Review future monitoring results to determine if further actions are necessary.	SCAP	Ecology, Property owner/operator	In Progress	TBD
Boeing Developmental Center (BDC)	Conduct stormwater and/or storm drain solids monitoring for outfalls DC14 and DC15.	SCAP	Ecology, Boeing	In Progress	TBD
Former Rhône-Poulenc Site	Address the toluene groundwater contamination in the southwest corner of the East Parcel, in accordance with the Revised East Parcel Corrective Measures Implementation Work Plan.	SCAP	Ecology, Property owner/operator	In Progress	TBD
	Investigate and address shoreline bank contamination from historical site operations and releases (e.g., application of vanillin black liquor solids to the shoreline bank for weed control).	SCAP	Ecology, Property owner/operator	In Progress	TBD
	Continue to monitor the effectiveness of the hydraulic interim control measure, and investigate the presence of elevated copper concentrations in groundwater outside the barrier wall and the potential leak in the barrier wall.	SCAP	EPA, Property owner/operator	Ongoing	TBD
	Review the current SWPPP and Operations and Maintenance Plan. Make necessary changes and additions to prevent contaminants from potential upland sources (such as fuel leaks from damaged vehicles) from migrating to Slip 6 source control area sediments via the stormwater system.	SCAP	Ecology, Property owner/operator	Planned	TBD
King County Stormwater Outfall	Collect in-line water and storm drain solids samples to evaluate if COCs are migrating to Slip 6 source control area sediments via the storm drain outfall.	SCAP	King County	In Progress	TBD
	Conduct source tracing to identify sources of COCs to the storm drain line, as necessary.	SCAP	King County	Planned	TBD
Museum of Flight (MOF)	Monitor stormwater and/or storm drain solids at MOF and former BDC properties in the vicinity of USTs and associated groundwater contamination.	SCAP	Ecology, Property owner/operator	Planned	TBD
	Identify the source and extent of groundwater contamination on the former BDC property, and conduct remedial action, as necessary.	SCAP	Ecology, Property owner/operator	Planned	TBD

**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
<b>RM 4.3-4.9 East (Boeing Developmental Center)</b>					
BDC Outfalls	Request Boeing to collect grab solids samples from the BDC SD system. Priority should be given to SD lines with medium to high flows and SD lines serving areas with significant industrial activities. Samples should be analyzed for PCBs, PAHs, and metals.	SCAP	Ecology/ Boeing	Planned	TBD
	If COCs are detected in the SD system at concentrations above the Sediment Quality Standards, request Boeing to conduct source tracing and control as needed to reduce the potential for sediment recontamination.	SCAP	Ecology/ Boeing	Planned	TBD
<b>RM 1.3-1.6 West (Glacier Bay)</b>					
Duwamish Shipyard	Conduct site investigations as specified in the Agreed Order Statement of Work.	SCAP	Property owner/ operator	Planned	2013
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions.	SCAP	Ecology	Planned	2014
Glacier Northwest	Under the Agreed Order, require PLPs to prepare work plans for site investigations as specified by Ecology.	SCAP	Property owner/ operator	In Progress	Jun-13
	Upon approval of work plans by Ecology, conduct site investigations as specified.	SCAP	Property owner/ operator	Planned	Aug-13
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions.	SCAP	Ecology	Planned	Jun-13
<b>RM 1.6-2.1 West (Terminal 115)</b>					
Former Foss Environmental Services	Request that Haslund MP perform an environmental investigation to characterize the nature and extent of potential sediment COCs in soil and groundwater beneath the property. Soil and groundwater contamination may be present due to historical operations by Boeing.	SCAP	Ecology	Planned	TBD
Shultz Distributing	Determine if stormwater from the Shultz Distributing facility is conveyed to the Highland Park Way SW SD system without treatment.	SCAP	SPU, Port of Seattle	Planned	TBD

**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
Terminal 115 - Port of Seattle Storm Drain Outfalls (Outfalls 2122, 2123, 2124, 2220, and POS 6146)	Collect storm drain solids samples from the storm drain lines discharging to Outfalls 2122, 2123, 2124, 2128, 2220, and POS 6146 and provide the data to Ecology to identify potential contaminant sources. Samples were recently collected from the storm drain lines discharging to Outfalls 2123, 2124, 2128, and 2220.	SCAP	Port of Seattle	In Progress	TBD
	Negotiate an Agreed Order with the Port, to include Terminal-wide investigations to characterize the nature and extent of potential COC sources in fill material, soil, groundwater, and stormwater at Terminal 115, including specific areas identified in the Terminal 115 SCAP.	SCAP	Ecology, Port of Seattle	Planned	TBD
	Perform a video inspection of storm drain lines to identify areas where groundwater infiltrates the storm drain system.	SCAP	Port of Seattle	Planned	TBD
	Provide information regarding discharges to the deck drains north of Berth 1 to Ecology. Information to be provided will include, at minimum, a description of BMPs employed to prevent pollution of the stormwater runoff that is conveyed to the deck drains.	SCAP	Port of Seattle	Planned	TBD
	Provide additional information to Ecology regarding stormwater drainage to the LDW from the 150 SW Michigan Street area of the Terminal 115 property. Information to be provided will include, at minimum, a map showing the area draining to the two small outfalls and a description of BMPs employed to prevent stormwater pollution.	SCAP	Port of Seattle	Planned	TBD
<b>RM 2.2-3.4 West (Riverside Drive)</b>					
American Civil Constructors Barge Removal Ramp	Request American Civil Constructors to provide information about the fill used for a barge removal ramp, to determine if the fill is a potential source of contaminants to adjacent sediments.	SCAP	EPA, USACE	Planned	TBD
Independent Metals Plant 2	Conduct a follow-up stormwater compliance inspection to verify compliance with the corrective actions identified repeatedly by Ecology during inspections performed from 2007 to 2011. Evaluate compliance with corrective actions, and take enforcement action as appropriate.	SCAP	Ecology	In Progress	TBD
	Request drainage information from Independent Metals for Outfalls 2109 and 2111 to determine if the outfalls are operational and to identify the drainage areas associated with the outfalls, if any.	SCAP	Ecology	Planned	TBD

**Table ES-1. High Priority Source Control Action Items to be Completed**

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
------------------------------------	-------------	------	-------------------	--------	---------------------------

Acronyms:

- |  |  |
|--|--|
| BDC = Boeing Developmental Center  | PCB = polychlorinated biphenyl                   |
| BMP = best management practice   | PLP = potentially liable party                   |
| CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act | POS = Port of Seattle                            |
| COC = chemical of concern  | RI/FS = Remedial Investigation/Feasibility Study |
| CSO = combined sewer overflow  | RM = river mile                                  |
| EE/CA = Engineering Evaluation/Cost Analysis                                   | SCAP = Source Control Action Plan                |
| EOF = emergency overflow   | SCL = Seattle City Light                         |
| EPA = U.S. Environmental Protection Agency                                     | SD = storm drain                                 |
| GTSP = Georgetown Steam Plant  | SPU = Seattle Public Utilities                   |
| KCIA = King County International Airport                                       | SVOC = semivolatile organic compound             |
| LDW = Lower Duwamish Waterway  | SWPPP = Stormwater Pollution                     |
| MOF = Museum of Flight   | TBD = to be determined                           |
| NBF = North Boeing Field   | UST = underground storage tank                   |
| NPDES = National Pollutant Discharge Elimination System                        | VOC = volatile organic compound                  |
| PAH = polycyclic aromatic hydrocarbon  |  |

## 1.0 Introduction

This report summarizes the status of source control efforts in the Lower Duwamish Waterway (LDW) from January 1 through December 31, 2012. The Washington State Department of Ecology (Ecology) published the first Source Control Status Report in July 2007, covering the period from 2003 to June 2007 (Ecology 2007b). The reader is referred to the July 2007 Source Control Status Report for more detailed information on:

- The history of the LDW Superfund Site,
- Agency roles and responsibilities,
- The LDW Source Control Work Group (SCWG),
- The Lower Duwamish Waterway Group (LDWG) and the Remedial Investigation/Feasibility Study (RI/FS), and
- Site-wide source control programs.

Subsequent updates were published in May 2008 (Ecology 2008b), October 2008 (Ecology 2008e), August 2009 (Ecology 2009j), August 2011 (Ecology 2011f), and July 2012 (Ecology 2012i). Detailed background information on individual source control areas is provided in the Data Gaps Reports and Source Control Action Plans (SCAPs) for each area, as referenced in the text.

This section summarizes background information on the LDW Superfund Site. Section 2 describes the process for developing SCAPs for known or potential sediment cleanup areas. Section 3 describes source control methods and the process for implementing SCAPs, and describes the status of source control activities being conducted for the entire LDW. Sections 4 through 10 describe recent source control activities associated with the seven candidate Early Action Areas (EAAs),<sup>2</sup> while Sections 11 through 27 describe Tier 2 and 3 source control areas. Section 28 presents a list of references. Figures and tables are presented after each section.

### 1.1 Lower Duwamish Waterway Site

The LDW is the downstream portion of the Duwamish River, which extends from the southern tip of Harbor Island to just south of the Norfolk Combined Sewer Overflow (CSO)/Storm Drain (SD) (Figure 1-1).

Chemicals of concern (COCs) in the waterway include arsenic and other metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), phthalates, and other organic compounds. These chemicals pose a threat to people, fish, and wildlife.

The Remedial Investigation (RI) for the LDW Superfund Site was conducted in two phases. Results of Phase 1 were published in July 2003 (Windward 2003b). The Phase 1 RI used existing

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<sup>2</sup> The LDW Feasibility Study refers to five EAAs. Ecology uses the EAA designation to refer to all seven original candidate EAAs, for consistency with previous reports.

data to provide an understanding of the nature and extent of chemical distributions in LDW sediments, develop preliminary risk estimates, and identify candidate sites for early cleanup action within the LDW.

The *Technical Memorandum: Data Analysis and Candidate Site Identification*, issued in June 2003, described seven candidate sites for early sediment cleanup action (Windward 2003a). The seven sites, shown in Figure 1-1 and identified as EAAs, as listed in the *Technical Memorandum*, are the following:<sup>3</sup>

- Area 1: Duwamish/Diagonal CSO and SD, east side of the waterway (River Mile [RM] 0.4 to 0.6)
- Area 2: RM 2.2, west side of the waterway, just south of the 1<sup>st</sup> Avenue S bridge
- Area 3: Slip 4 (RM 2.8)
- Area 4: South of Slip 4, on the east side of the waterway, just offshore of Boeing Plant 2 and Jorgensen Forge properties (RM 2.9 to 3.7)
- Area 5: Terminal 117/Malarkey, west side of the waterway (approximately RM 3.6)
- Area 6: RM 3.8, east side of the waterway
- Area 7: Norfolk CSO/SD area, east side of the waterway (RM 4.9 to 5.5)

The final RI, published in July 2010, presents the results of many years of investigations conducted for the LDW study area (Windward 2010). It describes what is known about the LDW, including:

- The history, environmental setting, habitat, and uses of the LDW;
- The deposition and transport of sediment within the LDW;
- The distribution of contamination in the LDW, including concentrations of chemicals in sediment, water, and tissues;
- Information regarding potential historical and ongoing sources of chemicals to the LDW, as well as the source control and identification strategy; and
- The results of the baseline human health risk assessment and ecological risk assessment, which assess risks to people and ecological species from contamination within the LDW prior to remedial actions.

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<sup>3</sup> In this report, the seven candidate early action areas are referred to by the following designations:

- Area 1 – EAA-1 (Duwamish/Diagonal Way)
- Area 2 – EAA-2 (Trotsky Inlet)
- Area 3 – EAA-3 (Slip 4)
- Area 4 – EAA-4 (Boeing Plant 2/Jorgensen Forge)
- Area 5 – EAA-5 (Terminal 117)
- Area 6 – EAA-6 (Boeing Isaacson/Central KCIA)
- Area 7 – EAA-7 (Norfolk CSO/SD)

In October 2010, LDWG submitted the Draft Final Feasibility Study (FS) to the U.S. Environmental Protection Agency (USEPA or EPA) for public input and agency review. LDWG used the input received from the agencies and the public to finalize the FS. A final FS was published in October 2012 (AECOM 2012b). The FS evaluates cleanup options for the LDW. The cleanup options considered included various combinations of contaminated sediment removal, containment, and natural recovery. Following the publication of the Final FS, EPA will issue the Proposed Plan that identifies a preferred cleanup option for the LDW.<sup>4</sup> EPA will hold a formal comment period on the Proposed Plan in 2013. After EPA receives and evaluates public comments on the Proposed Plan, EPA will coordinate with Ecology to select the final remedial alternative that will be used to clean up the LDW.

Further information about the LDW can be found at the EPA LDW website: <http://yosemite.epa.gov/r10/cleanup.nsf/sites/lduwamish> and the LDWG website: <http://www.ldwg.org>.

## **1.2 Lower Duwamish Waterway Source Control Strategy**

Ecology revised the LDW Source Control Strategy in December 2012. The draft final strategy will be available for public comment in 2013. Following the comment period, Ecology will publish the revised strategy (Ecology 2012q).

The revised strategy will update and replace the first Source Control Strategy published in 2004 (Ecology 2004a). The revised strategy uses existing administrative and legal authorities to control sources of contamination, to perform inspections, and to require other necessary source control actions. It describes how recontamination of waterway sediments will be controlled to the extent practicable. Once it is finalized, the SCWG (Ecology, King County, the City of Seattle, the Port of Seattle, and EPA) will use this strategy to identify source control issues, implement control of contaminant sources, and monitor source control. The revised strategy proposes several revisions, including:

- Clarify roles between Ecology and EPA;
- Remove prioritization of areas by a tier structure; and
- Add a section addressing agency-specific implementation plans.

Further information about LDW source control can be found at Ecology's Lower Duwamish Source Control website: [http://www.ecy.wa.gov/programs/tcp/sites\\_brochure/lower\\_duwamish/lower\\_duwamish\\_hp.html](http://www.ecy.wa.gov/programs/tcp/sites_brochure/lower_duwamish/lower_duwamish_hp.html)

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<sup>4</sup> EPA issued the Proposed Plan on February 28, 2013. Comments on the Proposed Plan were accepted through June 13, 2013.

### **1.3 Source Control Work Group**

The primary public agencies responsible for source control for the LDW are Ecology, the City of Seattle, King County, the Port of Seattle, the City of Tukwila, and the EPA. Together they are known as the LDW SCWG.

The roles of the SCWG agencies are summarized in the July 2007 Source Control Status Report (Ecology 2007b). Any additional roles that may be developed will be described in the area-specific SCAPs. Roles for other public agencies, such as the Washington State Department of Transportation, Puget Sound Clean Air Agency, or Public Health – Seattle and King County, may also be developed as information collection and source control proceeds.



Figure 1-1. Lower Duwamish Waterway Site

## 2.0 Developing Source Control Action Plans

### 2.1 Background

Ecology is developing SCAPs for 24 sub-basins (or source control areas) that drain to the LDW Superfund Site (Figure 2-1).

The Source Control Strategy (Ecology 2004a) established four prioritized tiers of work:

- Tier 1: Source control associated with Early Action sediment cleanups;
- Tier 2: Source control associated with EAAs identified in Phase 1 and cleanup areas identified in Phase 2 of the sediment RI and EPA's Record of Decision (ROD);
- Tier 3: Source control necessary to prevent future sediment contamination from basins that may not drain directly to an identified sediment cleanup area; and
- Tier 4: Source control necessary to address any recontamination identified by post-cleanup monitoring of sediment.

SCAPs were developed for the Tier 1 source control areas along the LDW, which includes the seven candidate EAAs identified in Section 1.1. In 2007, Ecology, in consultation with EPA, identified eight potential Tier 2 source control areas. These were based on available sediment data, size of the upland basin draining to the source control area, and general knowledge about facilities operating in the basin. In February 2008, Ecology identified the sub-drainage basins for areas of the LDW that were not already included in a SCAP or planned SCAP. Using the same criteria as in 2007, eight additional potential source control areas were added to the list. One additional source control area was added by Ecology in 2010, for a total of 24 source control areas.

The designation of a sediment area as Tier 2 or Tier 3 depends on whether it needs cleanup. Since the ROD will not be published until 2013, that decision will not be made in the immediate future. Until that time, there is no way to distinguish Tier 2 and Tier 3 areas with any certainty. This report addresses the Tier 1 areas in Sections 4 through 10 and the remaining 17 source control areas in Sections 11 through 27. The seven candidate EAAs (Tier 1) and 17 Tier 2 and Tier 3 areas are shown in Figure 2-1.

The SCAP for each of these sediment areas identifies potential contaminant sources and actions needed to control them and evaluates whether ongoing sources are present that could recontaminate sediments after cleanup. In addition, the SCAPs describe source control actions that are planned or currently underway, and sampling and monitoring activities that will be conducted to identify additional sources.

Ecology works with the SCWG members to develop SCAPs. Members of the SCWG provide information that is incorporated into the SCAPs, such as information needed to define the storm drain and CSO basins, as well as to identify and evaluate National Pollutant Discharge Elimination System (NPDES) permitted facilities and contaminated properties.

## 2.2 SCAP Publication Schedule

As of December 31, 2012, 20 SCAPs have been published. Publication dates for these 20 SCAPs and estimated publication dates and schedule for the remaining four SCAPs are as follows:<sup>5</sup>

Source Control Site	Complete	Planned Start	Publication Date
EAA-1 (Duwamish/Diagonal Way)	●	February 2003	December 2004
EAA-2 (Trotsky Inlet)	●	August 2006	June 2007
EAA-3 (Slip 4)	●	May 2004	July 2006
EAA-4 (Boeing Plant 2/Jorgensen Forge)	●	November 2006	December 2007
EAA-5 (Terminal 117)	●	April 2004	July 2005
EAA-6 (Boeing Isaacson/Central KCIA)	●	October 2007	March 2009
EAA-7 (Norfolk CSO/SD)	●	September 2006	September 2007
RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)	●	April 2008	June 2009
RM 0.9-1.0 East (Slip 1)	●	March 2008	May 2009
RM 1.0-1.2 East (KC Lease Parcels)	●	September 2009	January 2011
RM 1.2-1.7 East (St. Gobain to Glacier Northwest)	●	April 2008	June 2009
RM 1.7-2.0 East (Slip 2 to Slip 3)	●	April 2008	June 2009
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)	●	October 2007	April 2009
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)	●	December 2007	June 2009
RM 3.9-4.3 East (Slip 6)	●	October 2007	September 2008
RM 4.3-4.9 East (Boeing Developmental Center)	●	October 2009	December 2010
RM 0.0-1.0 West (Spokane Street to Kellogg Island)		December 2010	February 2013
RM 1.0-1.3 West (Kellogg Island to Lafarge Cement)	●	December 2010	June 2011
RM 1.3-1.6 West (Glacier Bay)	●	February 2007	November 2007
RM 1.6-2.1 West (Terminal 115)	●	May 2010	October 2011
RM 2.1 West (1 <sup>st</sup> Avenue S SD)		September 2010	March 2013
RM 2.2-3.4 West (Riverside Drive)	●	March 2011	August 2012
RM 3.8-4.2 West (Sea King Industrial Park)		July 2012	August 2013
RM 4.2-4.8 West (Restoration Areas)		July 2012	September 2013

KCIA = King County International Airport

## 2.3 SCAP Implementation Schedule

The early stage of source control within a drainage basin, which includes conducting business/industrial inspections and tracing sources, is an intensive effort and continues until apparent sources are controlled. As businesses and land use change, the potential sources change as well. For large drainage basins such as the Diagonal Avenue S CSO/SD, business inspections and source tracing are long-term, ongoing efforts. While it may be possible to reduce the level of

<sup>5</sup> Company names are used only to designate source control area locations; source control area names are not intended to assign responsibility for contamination or to identify properties that may need remediation.

effort needed over time within a given drainage basin, inspections and source tracing must continue regularly over the longer term in order to identify and control new potential sources as they arise.

For discrete upland sources, such as facilities that require cleanup under the Model Toxics Control Act (MTCA) or federal cleanup laws, cleanup and control are also long-term efforts. Contaminated soil may be a source of sediment recontamination through several pathways. Contaminants in soil adjacent to the LDW can enter the waterway through erosion. Some soil contaminants migrate into groundwater or change the chemistry of the soil and cause other contaminants to become more mobile. Some groundwater contaminants accumulate as they come into contact with sediments. These sites may directly affect sediments in the river and, while identifying them and bringing them under control is possible, it often takes several years. Due to the time it takes to clean up a contaminated site, Ecology believes the time and available resources needed to complete upland site cleanups will be a limiting factor for achieving river-wide source control. This will affect the schedule for the cleanup of sediment areas identified in the ROD.

The 20 SCAPs published to date include action items needed to complete source control for each source control area. As investigations are conducted, these action items have been updated as appropriate. Routine functions, such as ongoing inspections and review of NPDES permits, have been removed from the action item tables for specific source control areas. In some cases, multiple action items have been consolidated into a single action item or an action item has been split into its component parts to allow more efficient tracking. Some action items have been edited for brevity and clarity. Follow-on action items, based on outcomes of original action items published in the SCAPs, have been added; in addition, new action items have been added as appropriate if new information about a facility or source control area has become available. For example, if an inspection was conducted that led to additional investigation activities at a facility, these activities were added as a new action item.

The table below lists the number of action items as published in the original SCAPs and the number of action items currently identified for each source control area.

<b>Source Control Area</b>	<b>Original No. of Action Items As Listed in SCAP</b>	<b>Updated No. of Action Items<sup>a</sup></b>	<b>Action Items Completed<sup>a</sup></b>	<b>Action Items Planned or In Progress</b>
EAA-1 (Duwamish/Diagonal Way)	16	51	33	18
EAA-2 (Trotsky Inlet)	30	33	18	15
EAA-3 (Slip 4)	44	56	45	11
EAA-4 (Boeing Plant 2/Jorgensen Forge)	31	33	17	16
EAA-5 (Terminal 117)	19	32	24	8
EAA-6 (Boeing Isaacson/Central KCIA)	31	28	10	18
EAA-7 Norfolk CSO/SD	44	42	11	31
RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)	13	13	1	12
RM 0.9-1.0 East (Slip 1)	19	19	2	17

Source Control Area	Original No. of Action Items As Listed in SCAP	Updated No. of Action Items <sup>a</sup>	Action Items Completed <sup>a</sup>	Action Items Planned or In Progress
RM 1.0-1.2 East (KC Lease Parcels)	24	24	0	24
RM 1.2-1.7 East (St. Gobain to Glacier Northwest)	17	22	7	15
RM 1.7-2.0 East (Slip 2 to Slip 3)	37	39	4	35
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)	31	31	6	25
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)	42	42	9	33
RM 3.9-4.3 East (Slip 6)	29	23	4	19
RM 4.3-4.9 East (Boeing Developmental Center)	9	9	0	9
RM 1.0-1.3 West (Kellogg Island to Lafarge Cement)	9	9	0	9
RM 1.3-1.6 West (Glacier Bay)	32	30	15	15
RM 1.6-2.1 West (Terminal 115)	26	26	1	25
RM 2.2-3.4 West (Riverside Drive)	17	17	2	15
Total	520	579	209	370

a – Includes action items that have been canceled because they were not needed.

Currently, a total of 579 source control action items have been identified based on the 20 SCAPs published as of the end of December 2012:

- 201 action items (35 percent) have been completed,
- 70 action items (12 percent) are in progress,
- 291 action items (50 percent) are planned,
- 9 action items (2 percent) are ongoing, long-term actions, and
- 8 action items (1 percent) have been cancelled (not needed).

Of the 370 action items that are active (i.e., in progress, planned, or ongoing), 100 (27 percent) are considered high priority (to be completed prior to sediment cleanup), 185 (50 percent) are medium priority (to be completed prior to or concurrent with sediment cleanup), and 85 (23 percent) are low priority (ongoing actions, or actions to be completed as resources become available).

The action item tally presented above reflects an increase of 23 action items during the current reporting period (January 2012 through December 2012) as a result of the completion of the Riverside Drive SCAP, and the addition of follow-up action items, as appropriate. A total of 28 action items were completed during this period. Additional action items will be identified as SCAPs are completed for the remaining four source control areas. The status of action items for each source control area is shown in Figure ES-1.

Ecology developed long-term schedule projections for implementing source control in the LDW during preparation of the July 2007 Source Control Status Report, and updated them in May 2008, October 2008, August 2009, August 2011, and July 2012. These projections have been updated again for the current Source Control Status Report.

The updated schedule for upland site assessment and cleanup activities is presented in Table 2-1; the entire schedule, including SCAP preparation and implementation, is shown in more detail in Appendix A.

The schedule for river-wide source control continues to be dependent on the time and resources needed to conduct cleanup at contaminated upland sites, and the availability of site managers to oversee these cleanups is a limiting factor. Additional upland sites that may require site assessment and cleanup continue to be identified as additional SCAPs are completed.

The long-term schedule projection for implementing source control is based on a number of scheduling assumptions. These assumptions are presented in Appendix A. Ecology's Toxics Cleanup Program (TCP) currently has three full-time and two part-time site managers dedicated to contaminated upland sites in the LDW. The current schedule projection assumes that no additional site managers will be hired. The current schedule projection also assumes that the SCAPs will identify up to 21 upland contaminated cleanup sites.<sup>6</sup> The 21 upland sites include only those for which Ecology will need to assign one of its full-time or part-time site managers. Work is underway at 11 of these sites (Industrial Container Services/Trotsky, Douglas Management, Crowley Marine Services/8<sup>th</sup> Avenue Terminals, North Boeing Field/Georgetown Steam Plant (NBF-GTSP), Jorgensen Forge Uplands, Boeing Isaacson/Thompson, Duwamish Marine Center, 8801 Site, Duwamish Shipyard, Glacier Northwest/Reichhold, and N Terminal 115). The 21 cleanup sites included in the schedule do not include EPA-lead sites, two additional sites where samples to support source control efforts have been collected by Ecology (Basin Oil and South Park Marina), or other MTCA cleanup sites within the LDW basin that are managed by non-TCP Ecology staff or which are not identified as significant sources of sediment recontamination.

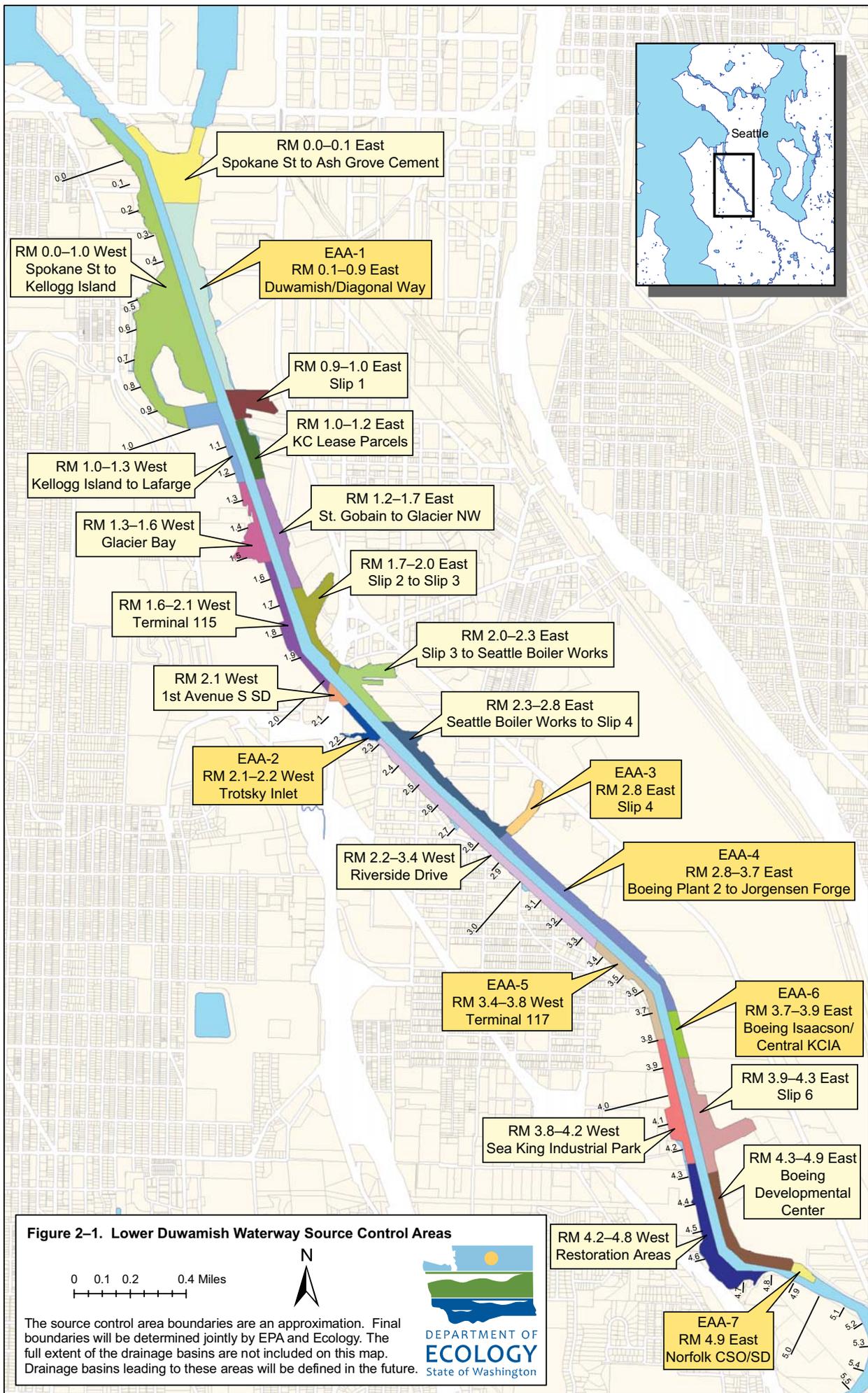
The projected schedule estimates that source control from all of the 21 potentially contaminated upland sites could be implemented by February 2025.

In 2013, Ecology plans to consider an additional 13 potential sites. The addition of these sites would significantly impact the long-term schedule projection for completion of source control activities. It should be noted that the schedule projection in Appendix A makes assumptions with regard to site manager staffing, but does not address the availability of staff needed for planning, coordination, reporting, oversight, or community involvement. These functions are vital to the overall source control effort for the LDW Superfund Site; the availability of staff in these areas may influence the overall source control schedule.

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<sup>6</sup> The actual number of upland cleanup sites may be greater or fewer than 20; the number of cleanup sites is an estimate based on currently available information.

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**Table 2-1. Projected Source Control Site Assessment and Cleanup Schedule**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>LDW Site Manager 1</b>														
EAA-3: NBF/GTSP														Start Apr 2007; Finish Jun 2022
RM 0.0-1.0 W (Spokane to Kellogg)														Start Feb 2016; Finish May 2024
<b>LDW Site Manager 2</b>														
EAA-2: Trotsky Property														Start Jan 2008; Finish Oct 2017
EAA-2: Douglas Management Co.														Start Jan 2008; Finish Mar 2018
EAA-3: Crowley/8th Ave Terminals														Start Apr 2008; Finish May 2018
RM 1.7-2.0 E: Duwamish Marine Center														Start Apr 2010; Finish Jul 2018
RM 2.3-2.8 E (SBW to Slip 4)														Start Jun 2015; Finish Sep 2023
EAA-7 (Norfolk CSO/SD)														Start Nov 2015; Finish Feb 2024
RM 2.2-3.4 W (Riverside Drive)														Start Jan 2016; Finish Apr 2024
RM 3.8-4.2 W (Sea King Industrial Area)														Start Mar 2016; Finish May 2024
<b>LDW Site Manager 3</b>														
RM 1.3-1.6 W: Glacier NW/Reichhold														Start Mar 2008; Finish Mar 2019
RM 1.3-1.6 W: Duwamish Shipyard														Start May 2007; Finish Jul 2018
RM 1.3-1.6 W: North Terminal 115														Start Sep 2009; Finish Jul 2018
RM 1.0-1.3 W (Kellogg Island to Lafarge)														Start Dec 2016; Finish Feb 2025
RM 4.2-4.8 W (Restoration Areas)														Start Mar 2016; Finish Jun 2024
<b>LDW Site Manager 4 (Part-Time)</b>														
RM 3.9-4.3 E: 8801 Site														Start Feb 2008; Finish Jan 2016
EAA-6: Boeing Isaacson														Start Dec 2008; Finish Apr 2017
RM 0.0-0.1 E (Spokane St to Ash Grove)														Start Sep 2013; Finish Dec 2021
RM 0.9-1.0 E (Slip 1)														Start Jan 2015; Finish Mar 2023
<b>LDW Site Manager 5 (Part-Time)</b>														
EAA-4: Jorgensen Forge Uplands														Start Jul 2012; Finish Nov 2019
RM 1.6-2.1 W (Terminal 115)														Start Apr 2013; Finish Jun 2021
<b>Non-LDW Site Managers</b>														
RM 2.0-2.3 E: Fox Avenue Building														Start Jun 2008; Finish Aug 2015
RM 2.1 W: South Park Landfill														Start 2007; Finish Jul 2015
<b>Other Agencies</b>														
EAA-1: Terminal 108 (Port of Seattle)														Start Jan 2008; Finish Mar 2014
EAA-4: Boeing Plant 2 (USEPA)														Start Jan 2003; Finish Jul 2015
EAA-5: Terminal 117 (USEPA)														Start Aug 2005; Finish June 2013
RM 3.9-4.3 E: Rhone-Poulenc Site (USEPA)														Start Jan 2009; Finish Jul 2016

## **Table 2-1. Projected Source Control Site Assessment and Cleanup Schedule**

Note: Timeline is based on current assumptions, which are under review by Ecology; end dates may change. Start date is initiation of PLP Determination process; finish date is completion of Source Control Determination.

The following MTCA Cleanup Sites are not included in the schedule above; these are located in the LDW basin but are in the combined sewer area and not within the boundaries of a source control area: General Electric - Dawson Street Plant, Capital Industries, Art Brass Plating, Blaser Die Casting, and Burlington Environmental.

The following EPA-lead sites are not included in the schedule above: Rainier Commons, Boeing Former EMF, and the Slip 4 Early Action Cleanup.

## 3.0 Source Control Implementation

The three main types of source control activities are business inspections, source tracing, and upland site assessment and cleanup. These and other source control methods that are being implemented for the LDW as a whole were described in the July 2007 Source Control Status Report (Ecology 2007b); updates were provided in the May 2008, October 2008, August 2009, August 2011, and July 2012 Source Control Status Reports (Ecology 2008b, 2008e, 2009j, 2011f, 2012i). The following sections provide updates on the status of these activities. Action items associated with LDW-wide source control activities are summarized in Table 3-1. Source control activities related to specific source control areas are discussed in Sections 4 through 27, and are summarized in Tables 3-2 and 3-3 for EAAs and Tier 2/3 Areas, respectively.

Five action items were removed from the General Action Item table (Table 3-1). These actions are basic elements of the source control program and are applicable to all source control areas. They are long-term efforts that will be necessary for the duration of the LDW cleanup after the ROD. Therefore, they will no longer be listed as separate action items. These five actions are:

- Prepare semi-annual LDW Source Control Status Reports (Ecology);
- Monitor upland spills (Ecology);
- Continue source control and NPDES inspections as needed within the LDW drainage basin (Seattle Public Utilities [SPU], Ecology, King County);
- Continue public involvement and outreach efforts (Ecology, EPA, King County, Duwamish River Cleanup Coalition), and
- Continue development and updates of LDW source control database (Ecology).

EPA continues to send Request for Information letters to current and former property owners, tenants, or facility operators in the vicinity of the LDW. These letters, issued pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104(e), request information about materials handled at these sites, past practices, and known or suspected releases of contamination to the LDW. As of November 2012, EPA had issued Request for Information letters to 325 entities (current or previous property owners and operators); a list of entities who have received these letters is available at EPA's LDW website: <http://yosemite.epa.gov/r10/CLEANUP.NSF/sites/LDuwamish>.

### 3.1 Business Inspections

SPU inspects businesses in areas that discharge to the LDW through either the city-owned storm drain system or the combined sanitary/storm sewer system. SPU's business inspection program addresses stormwater, hazardous waste, and industrial waste issues.

King County provides technical support on industrial waste and hazardous waste issues as needed, and it inspects facilities permitted through its Industrial Waste program. King County's inspections focus on industrial waste issues within local sewer agency sanitary sewer service areas, including city-owned storm drain or combined sanitary/storm drain basins that discharge

to the LDW during CSO events. In unincorporated areas and for county facilities that discharge to the LDW, King County also inspects businesses with stormwater runoff through its Stormwater Management.

The City of Seattle operates the local sanitary/combined sewers that collect wastewater and stormwater and route it to the King County interceptor system, and it operates the municipal storm drains within the City of Seattle. King County operates the large interceptor pipes that convey municipal and industrial wastewater to the West Point treatment plant, and it operates the storm drain system in unincorporated King County. The sanitary/combined sewer and storm drains (including private storm drains) serve an area of about 19,800 and 8,940 acres, respectively.

Ecology conducts water quality inspections for NPDES-permitted facilities; these inspections focus on stormwater permit compliance issues. In addition, Ecology staff conducts source control inspections under the Urban Waters Initiative, together with SPU and King County.

### 3.1.1 SPU Business Inspection Program

During the current reporting period (January 2012 through December 2012), SPU has continued inspecting local businesses in the Lower Duwamish service area to ensure that businesses are implementing appropriate pollution prevention practices and complying with local stormwater, industrial pretreatment, and hazardous waste regulations.

SPU conducted a total of 338 inspections at 185 facilities during the period from January 2012 through December 2012. This includes three audits, one screening visit, 153 initial inspections, and 181 follow-up inspections. Of the 185 facilities inspected, all but 14 were in compliance as of December 31, 2012. Compliance information was unavailable for nine additional facilities at the time this Status Report was prepared.

Inspection locations are shown in Figure 3-1. Facilities that were inspected by SPU during the current reporting period are listed in Appendix B.

During the period January 2012 through December 2012, SPU conducted inspections in the following source control areas:

Source Control Area	Sub-Basin	No. of Facilities Inspected in 2012	No. of Inspected Facilities In Compliance as of 12/31/2012
RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way)	Diagonal Avenue S SD, Diagonal CSO	95	84
RM 1.7-2.0 East (Slip 2 to Slip 3)	1 <sup>st</sup> Avenue S Bridge SD (East), Michigan CSO	3	NA
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)	S River Street SD, S Brighton Street SD, Duwamish East Direct	8	7
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)	S Garden Street SD, S Myrtle Street SD	8	7

Source Control Area	Sub-Basin	No. of Facilities Inspected in 2012	No. of Inspected Facilities In Compliance as of 12/31/2012
RM 2.8 East (EAA-3: Slip 4)	KCIA SD#3, Slip 4 Direct	7	6
RM 4.9 East (EAA-7: Norfolk CSO/SD)	Norfolk CSO/SD/Emergency Overflow (EOF)	12	11
RM 0.0-1.0 West (Spokane St to Kellogg Island)	SW Dakota Street SD	1	1
RM 1.6-2.1 West (Terminal 115)	Highland Park Way SW SD, SW Kenny SD	5	4
RM 2.1 West (1 <sup>st</sup> Avenue S SD)	1 <sup>st</sup> Avenue S SD	10	8
RM 2.1-2.2 West (EAA-2: Trotsky Inlet)	2 <sup>nd</sup> Avenue S SD, Duwamish West Direct	8	8
RM 2.2-3.4 West (Riverside Drive)	7 <sup>th</sup> Avenue S SD, 8 <sup>th</sup> Avenue CSO, Duwamish West Direct	24	22
RM 3.8-4.2 West (Sea King Industrial Park)	S 96 <sup>th</sup> Street SD	4	4
	<b>Total</b>	<b>185</b>	<b>162*</b>

\*Includes one screening visit and three audits. A total of 14 facilities were not in compliance as of December 31, 2012, and compliance information was unavailable for nine additional facilities at the time this Status Report was prepared.

### 3.1.2 Ecology and King County Source Control Inspections

Ecology's Water Quality Program and Hazardous Waste & Toxics Reduction (HWTR) Programs continue to conduct source control inspections in the LDW. During the current reporting period (January 2012 through December 2012), Ecology conducted 105 inspections at 81 facilities. Ecology inspections are listed in Appendix C, and are summarized by source control area below.

Source Control Area	No. of Facilities Inspected in 2012
RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way)	17
RM 1.0-1.2 East (KC Lease Parcels)	10
RM 1.2-1.7 East (St Gobain to Glacier NW)	1
RM 1.7-2.0 East (Slip 2 to Slip 3)	5
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)	7
RM 2.8 East (EAA-3: Slip 4)	3
RM 2.8-3.7 East (EAA-4: Boeing Plant 2 to Jorgensen Forge)	1
RM 3.7-3.9 East (EAA-6: Boeing Isaacson/Central KCIA)	1
RM 4.9 East (EAA-7: Norfolk CSO/SD)	2
RM 0.0-1.0 West (Spokane St to Kellogg Island)	2
RM 1.6-2.1 West (Terminal 115)	2

Source Control Area	No. of Facilities Inspected in 2012
RM 2.1 West (1 <sup>st</sup> Avenue S SD)	4
RM 2.2-3.4 West (Riverside Drive)	16
RM 3.4-3.8 West (EAA-5: Terminal 117)	2
RM 3.8-4.2 West (Sea King Industrial Park)	8
<b>Total</b>	<b>78</b>

King County Stormwater Services conducted source control inspections in unincorporated areas of King County during the current reporting period. Specifically, inspections were conducted at four facilities in the Sea King Industrial Park and Restoration Areas source control areas. King County inspections are listed in Appendix D.

The King County Industrial Waste Program is a state and federal delegated pretreatment program with the authority to regulate the discharge of industrial wastewater to the King County sanitary sewer system. There were 18 facilities with waste discharge permits with the King County Industrial Waste Program that were inspected at least once in 2012. A total of 50 additional facilities were regulated under a major discharge authorization. These facilities are inspected at least once per five-year permit cycle (Tiffany 2013b). King County CSO basins and permitted facilities are shown in Figure 3-2.

### Ecology NPDES Inspections

Ecology issues NPDES permits for some businesses in the LDW. While the permits limit and control the discharge of a number of water quality pollutants, they do not necessarily control contaminants that pose a threat to sediments, such as PCBs, phthalates, arsenic, mercury, and PAHs. As of December 2012, Ecology has 99 NPDES permits on record for the LDW source area (not including construction SW permits). This includes six Sand and Gravel General permits, two Boatyard General permits, two individual permits, and 89 Industrial Stormwater General Permits (ISGPs). The types of NPDES permits issued to facilities in the LDW basin are described in detail in the July 2007 Source Control Status Report (Ecology 2007b). The ISGP was reissued on October 21, 2009, and became effective on January 1, 2010.

Ecology is continuing to inspect NPDES-permitted facilities to ensure compliance with permit conditions (Appendix C). In addition, Ecology's Water Quality (WQ) inspectors have been visiting facilities as needed to determine whether a permit is required. Recent inspections have identified numerous facilities that may need to apply for NPDES permits. Ecology will follow up with these facilities to ensure that they submit an application for a stormwater permit or a Conditional No Exposure (CNE) Certificate, as appropriate.

In 2012, Ecology and King County entered into an interagency agreement. Under the agreement, King County agreed to fund a water quality inspector at Ecology. The inspector is assigned to spend half of his time on inspections of facilities with an Ecology ISGP, and to spend the other half of his time conducting stormwater assessments of stormwater drainage issues within King County CSO basins on the LDW. One of the goals of this agreement was to use Ecology's stormwater expertise to assess the condition of the stormwater drainage component in the CSO

basins. The Ecology inspector's findings are reported to the King County Industrial Waste Program, which then responds directly to the facility in question or refers to another agency, as needed. During the last quarter of 2012, this Ecology inspector conducted stormwater assessments at a total of 10 facilities (Appendix C) (Ecology 2012n, 2012o, 2012p, 2012r, 2012s, 2012t, 2012u, 2012x, 2012y, 2012z).

### **Urban Waters Initiative Inspections**

The Urban Waters Initiative, a component of the Puget Sound Initiative since 2007, has consisted of a comprehensive, multi-program approach to accomplish the following:

- Identify potential sources of contamination.
- Ensure that facilities are both permitted (if applicable) and in compliance with their permit conditions.
- Increase inspections of regulated facilities.
- Assist in the development of appropriate source control measures.
- Provide assistance on toxics reduction and pollution prevention.
- Build capacity at the local level to safely manage and reduce toxics at small businesses and households.

The initiative is described in more detail in the May 2008 LDW Source Control Status Report (Ecology 2008b).

During the current reporting period, Ecology's WQ and HWTR inspectors, along with SPU inspectors and Ecology TCP staff, continued to coordinate inspections of facilities and priorities to avoid overlap in the field. King County coordinates with Ecology and SPU in conducting inspections and conducts inspections in unincorporated areas of the county and at county-owned properties and facilities. Urban Waters inspections are listed in Appendix C.

### **3.2 Source Tracing**

Source tracing activities include identification and assessment of potential sources of contaminants to the LDW through the storm drain/combined sewer systems. Source tracing is designed to identify sources by strategically collecting samples at key locations within the LDW drainage basin. The following source tracing activities were conducted during the current reporting period, as discussed in more detail below:

- Collection of in-line sediment trap samples (SPU, King County),
- Collection of storm drain catch basin and in-line solids samples (SPU, King County),
- Source tracing in Tukwila and in the S 96<sup>th</sup> Street SD (EPA), and
- Bank sampling (Ecology).

SPU and King County have been conducting source tracing sampling activities to support source control efforts since 2003 (King County and SPU 2004, 2005a, 2005b; SPU 2010). Source

tracing sampling is designed to identify sources by strategically collecting samples at key locations within the drainage/combined sewer systems. A variety of sampling techniques are used because no single sampling methodology exists to effectively trace sources of contaminants to LDW sediments.

The following types of source tracing samples have been collected to identify sources of chemicals of concern:

- In-line sediment traps installed in the storm drain and combined sewer systems,
- Onsite catch basins,
- Catch basins in the public right-of-way, and
- In-line grab samples from stormwater or combined sewer lines.

Storm drain solids data are compared to the Washington State Sediment Management Standards (SMS) to provide a rough indication of overall quality. The SMS include the Sediment Quality Standards (SQS), which identify surface sediments that have no adverse effects on biological resources, and Cleanup Screening Levels (CSL), which are used as an upper regulatory threshold for making decisions about source control and cleanup. For organics, the measured dry weight (DW) concentrations are organic carbon (OC) normalized to allow comparison to the SQS/CSL.

Alternatively, if OC-normalized data are unavailable or if total organic carbon (TOC) concentrations are outside the accepted range (0.5 to 4.0 percent), the storm drain solids data have been compared to the Lowest Apparent Effects Threshold (LAET) or Second Lowest Apparent Effects Threshold (2LAET) values, which are functionally equivalent to the SQS and CSL, respectively (Windward 2010). The LAET and 2LAET values are expressed in terms of DW concentrations. In some cases, OC-normalized data may be available for only a portion of a data set (e.g., data from sediment traps at Slip 4); in these cases, the LAET/2LAET values have been used for screening purposes to allow for sample comparisons.

For petroleum hydrocarbons, MTCA Method A Soil Cleanup Levels are used for comparison to storm drain solids concentrations. Dioxin/furan concentrations were compared to the LDW Remedial Action Level of 25 nanograms per kilogram (ng/kg) toxic equivalency quotient (TEQ).

In this document, values described above (SQS/CSL, LAET/2LAET, MTCA Method A, and LDW Remedial Action Level) that are used for comparison to storm drain solids data are referred to as “storm drain screening levels.” It should be emphasized that none of these values are applied as cleanup levels to storm drain or combined sewer solids. It is important to note that any comparison of this kind is most likely conservative given that sediments discharged from storm drains are highly dispersed in the receiving environment and mixed with the natural sedimentation taking place in the system.

In 2008, Ecology signed an interagency agreement with the City of Seattle to conduct source tracing sampling. As part of this agreement, SPU installed sediment traps at 20 locations in the LDW study area, including areas on King County International Airport (KCIA) and in unincorporated King County. In addition, the Ecology-SPU interagency agreement included funding to collect catch basin samples in areas where there has been little or no sampling to date. Under this agreement, SPU collected 124 in-line, catch basin, and dirt samples.

A second interagency agreement was signed in September 2010 to facilitate collection of additional sediment trap, in-line, and catch basin samples. This agreement included: collection and analysis of solids from 21 existing sediment traps approximately every six months; and collection and analysis of up to 65 in-line and catch basin solids samples in areas where contaminants have been detected during previous sampling events, near businesses identified by Ecology inspectors, and in selected residential areas within the LDW basin.

Source tracing locations where samples were collected during the current reporting period (January through December 2012) are shown on Figure 3-3. Sampling results for the current reporting period are provided in Appendix E. Results are discussed as relevant in subsequent sections for the source control areas in which they are located.

### 3.2.1 In-line Sediment Trap Samples (SPU)

In-line sediment traps consist of a small bracket mounted inside the collection system pipe that holds a wide-mouth sample bottle. Traps are installed at selected locations in the drainage system to identify and isolate problem areas. Samples represent contributions from relatively large areas (> 50 acres). They are installed for a period of 6 to 12 months to passively collect solids in the stormwater flow passing that location.

SPU has installed sediment traps at the following locations:

Drainage System	No. of Traps	Year Installed	Responsible Agency
Diagonal Avenue S CSO/SD <sup>a</sup>	6	2003	SPU
KC Airport SD#3/PS44 EOF	9	2005	SPU/Boeing <sup>b</sup>
I-5 SD at Slip 4	1	2005	SPU
Norfolk CSO/SD/PS17 EOF	5	2007	SPU
KC Airport SD#1	1	2008	SPU
KC Airport SD#2/PS 45 EOF	1	2008	SPU
KC Airport SD at RM 3.6 <sup>c</sup>	1	2008 and 2009	SPU
SW Idaho Street SD	3	2008	SPU
1 <sup>st</sup> Avenue S SD (west side of LDW)	4	2008	SPU
SW Kenny Street SD/T115 CSO	1	2008	SPU
Highland Park Way SW SD	2	2008	SPU
7 <sup>th</sup> Avenue S SD	3	2008	SPU
S 96 <sup>th</sup> Street SD	3	2008	SPU
Hamm Creek	1	2008	SPU
<b>Total</b>	<b>41</b>		

a – Traps removed in April 2010 after collection of 13 rounds of samples. SPU re-installed two traps in this system in May 2013.

b – Boeing maintains six of the traps and SPU maintains three of the traps.

c – Storm drain that crosses between Boeing and Jorgensen properties. Existing trap moved in January 2010 after King County replumbed this drainage system.

During the current reporting period (January through December 2012), SPU collected sediment trap samples in the following areas (Figure 3-3):

Outfall	No. of Sediment Trap Samples
KC Airport SD#1	1
KC Airport SD#2 (Central KCIA)	1
KC Airport SD#3/PS44 EOF	2
KC Airport SD at RM 3.6	1
Norfolk CSO/SD/PS17 EOF	3
1 <sup>st</sup> Avenue S SD	4
7 <sup>th</sup> Avenue S SD	3
S 96 <sup>th</sup> Street SD	3
SW Idaho Street SD	3
SW Kenny Street SD/T115 CSO	1
Highland Park Way SW SD	2
Hamm Creek	1

Sampling results for these sediment trap samples are provided in Appendix E. Results are summarized in subsequent sections specific to the source control areas in which they are located.

### 3.2.2 In-Line Solids and Catch Basin Samples (SPU)

In-line solids samples are grab samples collected from manholes located on the storm drain mainline, and they represent contributions from the entire drainage basin upstream of the sampling location. In-line grab samples typically represent the heavier particles that accumulate and are transported as part of bed load material that moves along the bottom of the pipe (SPU 2010). In-line solids samples are usually collected prior to installing a sediment trap or before and after cleaning the drain to characterize the chemical quality of sediment in the storm drain system.

A catch basin is a storm drain structure that contains a sump to capture sediment and other debris before it can enter the conveyance system. Catch basin samples are grab samples of solids that have accumulated in the catch basin sump. Catch basins collect runoff from the nearby area (typically <0.5 acre). These samples are used to characterize contributions from specific sites and confirm whether they are sources of pollutants to the drainage system. Onsite catch basin samples have been collected at sites of interest identified during business inspections or simply at sites where sufficient solids were available for chemical analysis.

Between January and December 2012, SPU collected a total of 39 in-line solids samples, 5 onsite catch basin samples, and 11 right-of-way catch basin samples from various locations in the LDW study area (Appendix E). Results for in-line and catch basin samples collected by SPU through September 2010 were published in SPU's *December 2010 Progress Report* (SPU 2010).

SPU has collected in-line and/or catch basin solids samples in the storm drain systems listed below. The number of samples collected within the current reporting period (January through

December 2012) is also shown. Results specific to each source control area are discussed in Sections 4 through 27.

LDW East Side	No. of Samples 2012	LDW West Side	No. of Samples 2012
Diagonal Avenue S CSO/SD	20	SW Idaho Street SD	2
S Brighton Street SD	3	SW Kenny Street SD	1
S River Street SD	2	Highland Park Way SW SD	2
KCIA SD#3/PS44 EOF	2	1 <sup>st</sup> Avenue S SD (west)	2
KCIA-Jorgensen SD	1	2 <sup>nd</sup> Avenue S SD	4
KCIA SD#2	1	7 <sup>th</sup> Avenue S SD	5
Norfolk CSO/SD/PS17 EOF	5	S 96 <sup>th</sup> Street SD	3

In addition, one sample was collected from a catch basin on a private storm drain line (Glacier Bay source control area) and one in-line sample was collected from the combined sewer area in South Park.

Additional in-line and catch basin samples have been collected by Seattle City Light (in-line samples in the Georgetown Flume), King County (oil/water separator samples collected at Slip 4), and the Port of Seattle (various Port properties along the LDW). These are discussed as relevant in subsequent sections specific to the source control areas in which they are located.

### 3.2.3 Combined Sewer System Sampling (King County)

King County prepared a Sampling and Analysis Plan (SAP) in August 2011 for collection of solids samples in LDW CSO basins (King County 2011). King County collected and analyzed samples from pipes, wet wells, or outfall weir structures location within the combined sewer collection system of the LDW basin. The scope of this work included sampling in the West Michigan, Brandon, and Michigan CSO basins. Other basins have either yielded no solids in lines, have access issues, or have no recent history of discharges. Activities include in-line solids grab sampling and sediment trap sampling. Sample locations were prioritized based on the number of CSO discharges per year. Sample collection began in 2011 and continued through 2012. Validated results were not available at the time this status report was prepared.

### 3.2.4 Brandon CSO Basin Study (King County)

King County's Brandon CSO Basin Study will evaluate chemical input apportionment between sanitary/wastewater (dry baseflow), stormwater (storm), and infiltration/inflow (wet baseflow). The Brandon CSO is a priority for CSO control within the LDW. Combined sewer basins include inputs from domestic wastewater, industrial wastewater, groundwater infiltration into combined sewer lines (infiltration), and stormwater runoff (inflow). Stormwater runoff is collected from streets, parking lots, roof drains, and other impervious surfaces. The chemical input differences will be used to better understand the general sources of chemicals within the combined sewer system (stormwater versus wastewater). Three locations in the CSO basin were sampled in September 2011 during six dry baseflow events, and between October 2011 and May 2012 during six wet baseflow events and up to 15 storm events. All of the samples were analyzed for metals, mercury, and PAHs; a subset of samples were analyzed for PCB and dioxin/furan

congeners. King County will summarize the findings of this study in a data report that is scheduled to be completed in 2013.

### **3.2.5 Source Tracing in Tukwila (EPA)**

EPA's contractors collected the first three rounds of storm drain solids samples from eight locations in Tukwila on August 23, 2011, March 27, 2012, and September 19, 2012. Samples were collected from the following locations: one sample from King County International Airport, KCIA SD#2 (EAA-6: Boeing Isaacson/Central KCIA source control area); one sample from KCIA SD#1 (Slip 6 source control area); two samples from along East Marginal Way S adjacent to Boeing's Military Flight Center (MFC); one sample in the Ryan Way SD; one sample from along East Marginal Way S near RM 5.3E (EAA-7: Norfolk CSO/SD source control area); one sample from along Pacific Highway S near approximately RM 5.5E; and one sample from the west side of the LDW, along SR-99 at approximately RM 4.7W (Restoration Areas source control area). The results of the sampling were submitted to EPA in a memo that contained a description of the sampling along with the laboratory data and associated validation reports (KT Associates [KTA] 2012a, 2012c, 2012e). No data summary tables or comparisons to screening levels were provided.

### **3.2.6 Source Tracing S 96<sup>th</sup> Street SD (EPA)**

On November 7, 2011, EPA's contractors collected the first round of storm drain solids samples from nine locations in the S 96<sup>th</sup> Street SD (Sea King Industrial Park source control area). On April 4, 2012, they collected the second round of storm drain solids samples at the S 96<sup>th</sup> Street SD locations. The results of the sampling were submitted to EPA in a memo that contained a description of the sampling along with the laboratory data and associated validation reports (KTA 2012b, 2012d). No data summary tables or comparisons to screening levels were provided.

### **3.2.7 Bank Sampling (Ecology)**

Ecology conducted a bank sampling study at nine locations along the banks of the LDW to assess whether bank soils in these areas are a potential source of sediment recontamination. Sampled areas included sand beaches with pilings, armored riprap, fill material of unknown origin, and suspected slag piles from industrial operations. Samples were collected in May 2011, and a data report was published in March 2012 (Hart Crowser 2012b).

The reconnaissance-level investigation included the collection of bank samples at or above the mean higher high water line, the completion of two soil borings at one site using direct-push drilling methods to 12 feet below ground surface, the chemical analysis of soil samples from each sample location and two each from both boring locations, the evaluation of laboratory chemical analysis results, and the preparation of a data report.

Eight of the nine sampling locations were selected because there was some indication that there may be contamination in the bank that could be a source of sediment recontamination. One of the sites, the South Park Street End, was selected for sampling because it is an area that is readily accessible to the public.

The samples collected at three sampling locations (the South Park Street End, the Sea King Industrial Park, and Hamm Creek) did not contain contaminants in bank soil at concentrations above the LAET. The results of this investigation showed contamination in bank soils that exceeded the SMS sediment quality criteria at six of the nine sample locations (Hart Crowser 2012b). Additional information is provided in Sections 5.2, 16.2, 17.2 and 20.2.

### **3.3 Site Assessment and Cleanup**

During SCAP development, Ecology and its contractors identify contaminated properties that have the potential to recontaminate a source control area. The contractors review available information about each property and prepare an assessment of whether the site poses a threat to the source control area. The detailed information on each property is documented in either a Property Review Report (Duwamish/Diagonal Way, Terminal 117, and Slip 4 source control areas) or in a Data Gaps Report (all other source control areas). As of December 31, 2012, Ecology and its contractors had conducted assessments of 659 properties in 22 source control areas (Table 3-4). These are shown in Figure 3-4. In addition, assessments have been conducted for approximately 544 facilities located solely within a CSO basin.

The investigation or cleanup of a contaminated property may be performed before a SCAP is written. This may occur when an owner wants to expedite cleanup or Ecology considers it necessary for source control. Site characterization or cleanup is in progress at several facilities that are known or suspected threats to LDW sediments (Figure 3-4).

EPA is managing six sites under the Resource Conservation and Recovery Act (RCRA), CERCLA, and/or the Toxic Substances Control Act (TSCA):

- Terminal 117 (EAA-5) (CERCLA)
- Rhone-Poulenc (RM 3.9-4.3 East) (RCRA)
- Boeing Plant 2 (RCRA), including part of Jorgensen Forge (EAA-4) (CERCLA)
- Boeing Former Electronics Manufacturing Facility (EMF) (EAA-4) (RCRA)
- Rainier Commons (TSCA)
- Slip 4 Early Action Area cleanup, including the Georgetown Flume outfall replacement, which was completed in 2009 (CERCLA)

Ecology is managing the following sites under MTCA (as of December 31, 2012):

- General Electric–Dawson Street Plant – Agreed Order signed May 2007
- Jorgensen Forge, upland of the EPA-managed area (EAA-4) – Agreed Order signed July 2007
- Capital Industries (RM 1.2-1.7 East) – Agreed Order signed November 2007
- Art Brass Plating (RM 1.2-1.7 East) – Agreed Order signed December 2007
- Blaser Die Casting (RM 1.2-1.7 East) – Enforcement Order issued March 2008

- North Boeing Field/Georgetown Steam Plant (EAA-3) – Agreed Order signed August 2008
- 8801 Site (RM 3.9-4.4 East) – Agreed Order signed September 2008
- Glacier Northwest/Reichhold Chemical (RM 1.3-1.6 West) – Agreed Order signed May 2009
- Fox Avenue Building (RM 2.3-2.8 East) – Agreed Order signed May 2009; Agreed Order signed June 2012
- South Park Landfill – Agreed Order signed May 2009
- Crowley Marine Services/8<sup>th</sup> Avenue Terminals (EAA-3) – Agreed Order signed July 2009
- Boeing Isaacson/Thompson (EAA-6) – Agreed Order signed April 2010
- Industrial Container Services/Trotsky Property/Former Northwest Cooperage (EAA-2) – Agreed Order signed May 2010
- Burlington Environmental (RM 1.2-1.7 East) – Agreed Order signed May 2010
- Duwamish Shipyard (RM 1.3-1.6 West) – Agreed Order signed September 2010
- Port of Seattle N Terminal 115 (RM 1.6-2.1 West) – Agreed Order signed March 2011
- Douglas Management Company (EAA-2) – Agreed Order signed May 2011
- Duwamish Marine Center (RM 1.7-2.0 East) – Agreed Order signed September 2011

In addition, Ecology has collected site characterization samples at the following sites:

- Soil, groundwater, and sediment at Industrial Container Services/Trotsky Property/Former Northwest Cooperage (EAA-2) – April through July 2007
- Soil, groundwater, and sediment at Douglas Management Company (EAA-2) – June through July 2008
- Soil, groundwater, and bank sediment/soil at South Park Marina (EAA-5) – September 2007 through July 2008
- Soil and groundwater at Basin Oil (EAA-5) – May 2009
- Soil, groundwater and catch basin solids at the Washington State Liquor Control Board – July 2011

The total number of sites that will require characterization and/or cleanup in the LDW site area is unknown at this time.

### **3.4 Other Source Control Activities**

#### **3.4.1 Green River Study (Ecology)**

Ecology is preparing a preliminary report summarizing existing information and data gaps for the Green-Duwamish River basin, located upstream of the LDW Superfund Site. Modeling

conducted as part of the LDW RI found that approximately 99 percent of the sediment load to the LDW comes from the upstream Green-Duwamish River. The quality of incoming sediment from the Green-Duwamish River may influence the quality of LDW sediments after cleanup. An analysis of suspended solids collected upstream of the LDW site indicates that this sediment load could be a possible source of contaminants to the LDW sediments under certain conditions.

This preliminary study will help Ecology develop a strategy for future source control efforts. The strategy may include additional data collection to characterize contributions from the Green-Duwamish River and to refine earlier sediment loading estimates, and the identification of areas for targeted source control upstream of the LDW site. To accomplish this, Ecology and its contractor will:

- Generate maps of natural drainage sub-basin boundaries for major tributaries to the Green-Duwamish River upstream of the LDW site.
- Collect and compile municipal stormwater system maps in the Green-Duwamish River watershed upstream of the LDW site.
- Identify and map locations of contaminated sites, facilities with NPDES permits, fully regulated hazardous waste generators, and facilities registered with the Puget Sound Clean Air Agency (PSCAA).
- Compile and plot available sediment, suspended sediment, and whole water data upstream of the LDW site.
- Prepare an overview of the Green-Duwamish River watershed upstream of the LDW site, including a description of municipalities; past and current initiatives and projects aimed at protecting water quality, controlling runoff or toxics, and salmon recovery; and other efforts that may reduce or control releases of LDW contaminants of concern.
- Develop a preliminary summary of existing information that Ecology can use to develop a strategy for future source control, including data collection to characterize loading from the Green River to the LDW.

This work started in summer 2012 and is scheduled to be completed in September 2013.

### **3.4.2 LDW Source Control Summary (Ecology)**

In 2012, Ecology developed a Source Control Summary Table (Appendix F). This table lists summary information about potential sources of contamination to LDW sediment found in various media (soil and groundwater, stormwater, and bank soil). It will be updated periodically.

### **3.4.3 LDW Air Deposition Scoping Study (Ecology)**

Air deposition may be a source of pollutants to LDW sediments. Toxic chemicals are emitted into the air from tailpipes, smokestacks, and industrial and commercial processes. Toxics loading studies conducted in Puget Sound suggest that runoff from the land surface and atmospheric deposition directly to marine waters has resulted in considerable loading of contaminants to Puget Sound. While it is clear that air deposition occurs, the magnitude of the problem and the overall impact on LDW sediments is unknown.

To better understand the impact of air deposition on LDW sediments, Ecology is developing an inventory of point sources registered with the PSCAA, and preparing a report that summarizes existing information and understanding about the contribution of atmospheric deposition of COCs to LDW sediments. This work started in summer 2012 and is scheduled to be completed in September 2013.

#### **3.4.4 Stormwater Pollution Prevention Plan Review and LDW Outfall Inventory Update (Ecology)**

In 2012, Ecology and its contractor began a review of Stormwater Pollution Prevention Plans (SWPPPs) for facilities in the LDW basin that are covered under an NPDES individual industrial stormwater permit, an ISGP, or another general permit. The purpose of this review is to assess whether there are links between COCs in LDW sediments and stormwater discharges at specific outfalls. Ecology is compiling information about stormwater discharge monitoring locations for permitted facilities, and will use this information to update an inventory of outfalls to the LDW. Monitoring data for sediments near the outfalls will be compared to nearby storm drain solids to identify correlations, if any, between chemical concentrations in stormwater at the monitored discharge points and the corresponding solids/sediment concentrations. Ecology will use these correlations as a starting point for future source tracing. This project is scheduled to be completed in spring 2013.

#### **3.4.5 Cement Kiln Dust Study (Ecology)**

There are a large number of sites in the LDW that are affected by cement kiln dust (CKD). Ecology is investigating whether the CKD sites may be a source of contaminants to LDW sediments. This study will summarize basic information about the composition and characteristics of CKD, including its fate and transport in groundwater downgradient of CKD sites. In addition, this study will compile existing information about CKD sites in the LDW basin. Ecology plans to use this study as it begins focusing on sampling storm drains and catch basins in the areas around the CKD sites. This is scheduled to be complete in September 2013.

#### **3.4.6 Combined Sewer Overflow Control Plan (King County)**

King County completed an updated CSO Control Plan in 2012. The plan carries forward the nine CSO control projects presented in the October 2011 Wastewater Treatment Division's recommended CSO Control Plan. Completion of the projects will meet federal and state regulations by controlling King County CSO locations to no more than one untreated overflow per year on average at each location. On June 15, 2012, King County Executive Dow Constantine submitted his plan to the King County Council for review, and it was approved in September 2012 (West 2012). In November 2012, King County proposed to enter into a consent decree with EPA that will require the county to control its remaining 14 uncontrolled CSO outfalls by 2030. Five of these uncontrolled CSO outfalls are in the LDW basin (Hanford #1, Michigan, Brandon, West Michigan, and Terminal 115).

### **3.4.7 Combined Sewer Overflow Control Plan (Seattle)**

SPU is preparing a long-term plan to control overflows to no more than one overflow per year at each location (as required by state regulations). In 2012, Seattle proposed to enter into a consent decree with EPA that will require the City to control their remaining uncontrolled CSO overflows by 2025.

### **3.4.8 Stream Sediment Sampling in the Green River Basin (King County)**

In 2012 King County conducted stream sediment monitoring in the Green River Basin. This work was done to evaluate sediment quality within streams in the Green Basin and to better understand the potential sources of sediment-associated chemicals to the Green and Duwamish Rivers. This project involved collection of sediment samples in the Green River Basin, including Mill (Hill) Creek in Auburn, Mill Creek in Kent, Jenkins Creek, and Covington Creek. Samples were also collected at four locations in the main stem Green River. In August 2012, King County prepared a SAP (King County 2012) and collected approximately 40 composite samples. The samples were analyzed for metals, mercury, PCBs, PAHs, and other organic compounds. These data, as well as previously collected stream sediment data from three different Green River stream basins, will be summarized in a King County data report in 2013.

### **3.4.9 Green River Whole Water Study (King County)**

King County is conducting a whole water study that will make comparisons of PCBs, arsenic, and PAHs in the Green River and its major tributaries. The study will also provide information related to upstream sources to the Lower Duwamish Waterway. The study collected composite whole water samples at upper and lower boundary locations along the Green River and from four major tributaries to the Green River. A total of nine samples were collected at each location: three dry season/baseflow and six storm/wet season sampling events between September 2011 and October 2012. King County will summarize the findings of this study in a data report that is scheduled to be completed in 2013.

### **3.4.10 Green/Duwamish Atmospheric Deposition Study (King County)**

King County's Atmospheric Deposition Study will compare the measurements of bulk deposition (dry particulate and rainfall) in areas of different land use within the Green/Duwamish River basin and will provide information to assist in understanding atmospheric sources to the LDW. King County collected samples at six stations from July 2011 to October 2012. For each sampling location, up to 25 samples were collected for metals, mercury, and PAHs and up to 10 samples were collected for PCB congeners and dioxins/furans. King County will summarize the findings of this study in a data report that is scheduled to be complete in 2013.

### **3.4.11 Restore the Duwamish Shoreline Challenge (City of Tukwila, Boeing Employees Credit Union, Forterra, and CBRE)**

On September 14, 2012, the City of Tukwila, the Boeing Employees Credit Union, Forterra, and CBRE Group (a commercial real estate services firm) launched the Restore the Duwamish Shoreline Challenge. This is a multi-year effort to unite Tukwila businesses in restoring 150,000

square feet of shoreline along the LDW. The partners committed sponsorship dollars and staff labor to help restore a portion of the LDW shoreline. This is one of the first business-led projects of this type in Washington State (Egge 2012).

### 3.5 Source Control Area-Specific Activities

Based on results of the LDW Phase 1 RI, seven early action candidate sites were proposed. These seven candidate EAAs, also referred to as Tier 1 areas, are shown in Figure 2-1.

The potential for sediment recontamination associated with these EAAs is described in detail in the Data Gaps Reports and SCAPs, as cited in the text below for each EAA. These documents are available from Ecology's LDW Source Control website.<sup>7</sup> Source control actions that were conducted between 2003 and June 2007 are described in the July 2007 Source Control Status Report (Ecology 2007b); updates have been published as listed below:

- July 2007 to March 2008 (Ecology 2008b, published in May 2008)
- April 2008 to August 2008 (Ecology 2008e, published in October 2008)
- September 2008 to June 2009 (Ecology 2009j, published in August 2009)
- July 2009 to September 2010 (Ecology 2011f, published in August 2011)
- October 2010 through December 2011 (Ecology 2012i, published in July 2012)

The current status report describes source control actions that were conducted from January 2012 through December 2012.

Table 3-2 lists action items that were identified for the seven candidate EAAs for which final SCAPs have been completed. The tables include new source control action items that have been added since initial publication of the SCAPs. Source control activities conducted from January 2012 through December 2012 are described in Sections 4 through 10. Properties for which no source control activities were conducted during this period are not discussed below; however, all identified actions items (completed, in progress, or planned) are listed in Table 3-2.

Site maps for the seven candidate EAAs are presented in Sections 4 through 10 to help identify locations discussed in the text below; these maps are located at the end of each section. Additional figures are available in the referenced reports.

Additional source control areas where long-term sediment cleanup actions may be implemented as part of the EPA ROD for the LDW Superfund Site are identified as Tier 2 Areas. At Tier 3 Areas, source control is necessary to prevent future sediment contamination from basins that may not drain directly to an identified sediment cleanup area.

As discussed in Section 2.1, the designation as a Tier 2 or Tier 3 source control area depends on whether the sediments in the river segment to which it drains need cleanup. Since the FS is still being developed and the ROD will not be published until 2013, there is currently no way to distinguish between Tier 2 and Tier 3 areas. The 17 potential Tier 2 or Tier 3 source control areas are discussed in Sections 11 through 27.

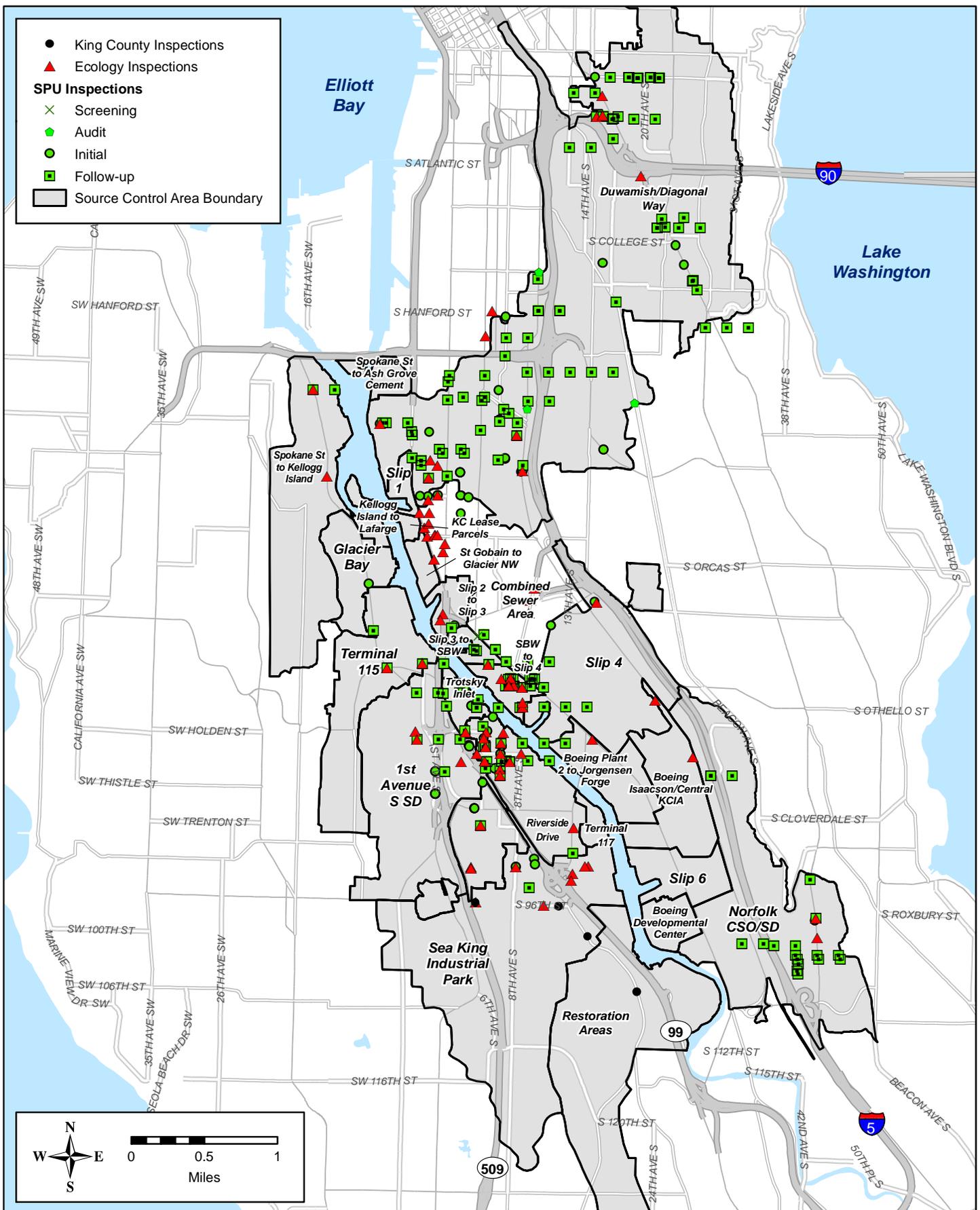
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<sup>7</sup> [http://www.ecy.wa.gov/programs/tcp/sites\\_brochure/lower\\_duwamish/lower\\_duwamish\\_hp.html](http://www.ecy.wa.gov/programs/tcp/sites_brochure/lower_duwamish/lower_duwamish_hp.html)

Site maps are presented for those Tier 2/3 source control areas for which Data Gaps Reports have been completed or are in progress; these maps are intended to help identify locations discussed in the text. Additional figures are available in the referenced reports.

Ecology will conduct source control evaluations for each of these areas, including review of existing information, identification of data gaps, and preparation of a SCAP. The 17 Tier 2 and Tier 3 areas and the seven candidate EAAs (a total of 24 source control areas) are shown in Figure 2-1.

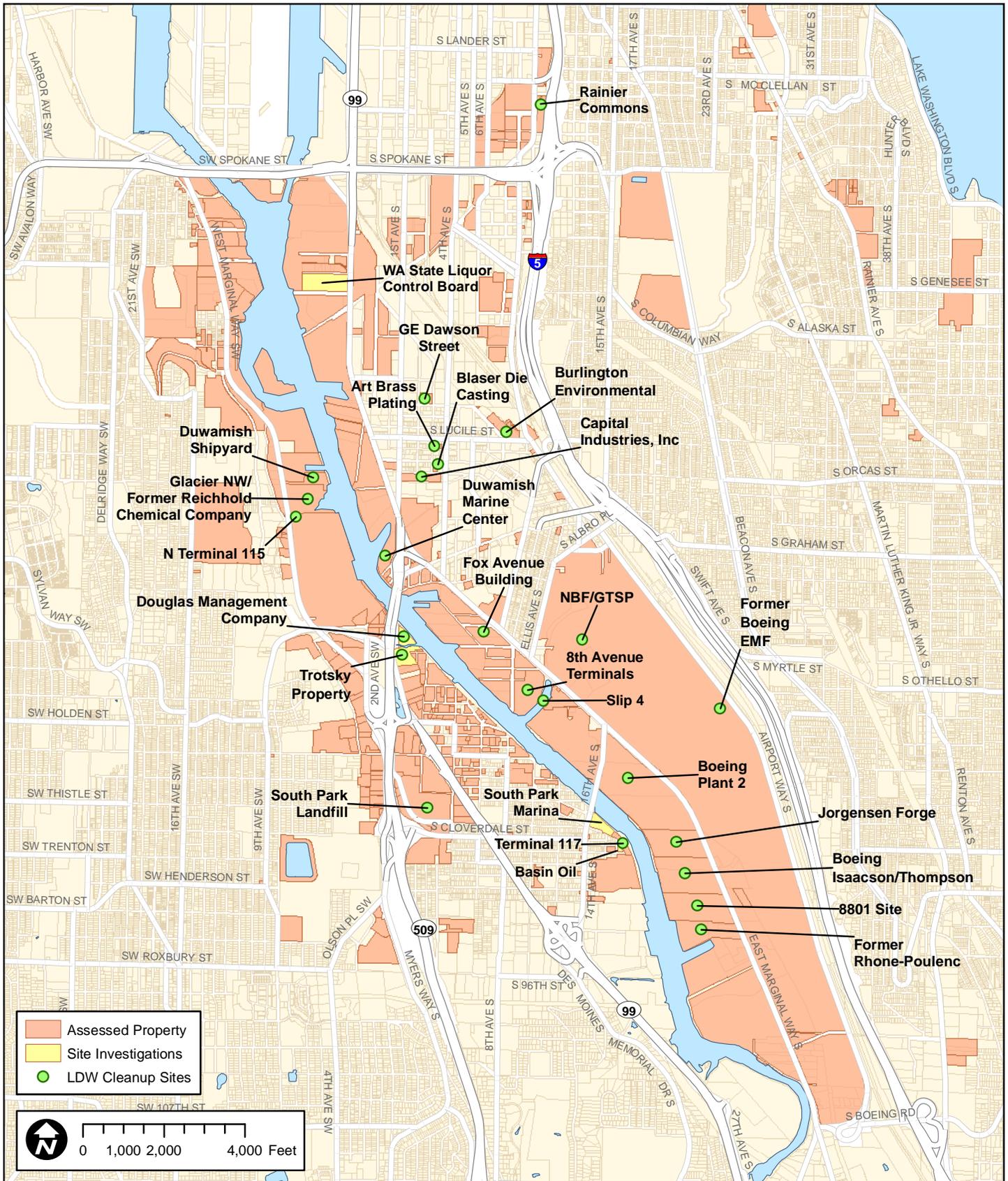
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**Figure 3–1. Inspections in the Lower Duwamish Waterway Basin  
January through December 2012**







**Figure 3-4. Ecology Property Assessments through December 2012**

**Table 3-1. General Source Control Action Items**

Action Item	Responsible Party	Status	Estimated Completion Date	Date Completed	Notes/Follow-On Actions
Locate/track 22 "unknown" outfalls	Ecology, SPU	Complete		Dec-11	Ecology updated and expanded the inventory of LDW outfalls, and collected surface sediment samples near outfalls for which data were previously unavailable. The outfall inventory will continue to be updated as new information becomes available.
Conduct sampling of bank soils and high intertidal sediments	Ecology	Complete		Mar-12	Bank sampling was conducted in May 2011; a final report was completed in March 2012.
Collect storm drain system solids samples (in-line and grab samples) as needed to conduct source tracing within the LDW drainage basin	SPU	Ongoing	TBD		SPU and Ecology continued to collect storm drain solids samples during the current reporting period.
Continue study of the air-to-stormwater-to-sediment contaminant pathway	City of Tacoma, City of Seattle, King County, Ecology, EPA	Ongoing	Sep-13		Ecology is updating the inventory of point sources registered with PSCAA and preparing a data gaps report for air deposition to the LDW . The report is expected to be completed in September 2013.
Evaluate and implement stormwater source control and treatment options to address air-to-stormwater-to-sediment pathway, as appropriate	City of Tacoma, City of Seattle, King County, Ecology, EPA	Planned	TBD		

The action items listed below are elements of the basic source control program; they are applicable to all source control areas. These are long-term efforts that will be necessary for the duration of the LDW cleanup after the Record of Decision. These will no longer be listed as separate action items.

Action Item	Responsible Party	Status	Estimated Completion Date	Date Completed	Notes/Follow-On Actions
Prepare LDW Source Control Status Reports	Ecology	Ongoing	NA		Source control status reports have been published in July 2007, May 2008, October 2008, August 2009, August 2011, and July 2012.
Monitor upland spills	Ecology	Ongoing	NA		Ecology continues to monitor upland spills as they occur.
Continue source control and NPDES inspections as needed within the LDW drainage basin	SPU, Ecology, King County	Ongoing	NA		SPU, Ecology, and King County continue to conduct inspections in the LDW basin.
Continue public involvement and outreach efforts	Ecology, EPA, King County, DRCC	Ongoing	NA		
Complete development of LDW Source Control Database	Ecology	In Progress	NA		

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
<b>Early Action Area 1 (RM 0.1-0.9 East; Duwamish/Diagonal Way)</b>								
Diagonal Avenue S CSO/SD	Conduct inspections of 200 businesses in the western portion of the Diagonal Ave. S. CSO/SD basin.	Medium	SCAP	SPU	Complete	--	Mar-02	Over 90% of facilities in compliance with stormwater source control requirements; reinspect as needed to maintain compliance.
	Conduct follow-up inspections at 41 facilities in the CSO/SD basin for which corrective actions were identified during 2008-2009 and which had not achieved compliance as of June 30, 2009.	Low	New	SPU/Ecology	Complete	--	Dec-11	Some facilities identified in the Data Gaps Report are no longer present; inspections were conducted at all relevant locations.
	Conduct initial inspections at properties/facilities identified in the Duwamish/Diagonal CSO/SD Data Gaps Report.	Low	New	SPU/Ecology	Complete	--	Dec-11	Some facilities identified in the Data Gaps Report are no longer present, while new ones were identified. Inspections were conducted at all relevant locations.
	Remove accumulated sediment from the lower portion of the Diagonal Avenue S CSO/SD.	High	SCAP	SPU	Complete	--	Nov-04	Conduct video-inspection to identify connections and potential dischargers, and to verify that sediment removal was complete.
	Video-inspection to identify connections and potential dischargers and to verify that sediment removal was complete.	High	Follow-On	SPU	Complete	--	Feb-05	
	Clean catch basins in the public right-of-way.	Medium	New	SPU	Complete	--	Jun-08	
	Conduct sediment trap sampling.	High	New	SPU	Complete	--	Mar-09	Sampling discontinued due to consistency of results over time. SPU plans to reinstall two sediment traps in this system in 2013.
Duwamish/Diagonal Basin	Conduct first round of multi-agency business inspections.	Medium	SCAP	SPU, King County	Complete	--	Sep-04	Over 90% of facilities in compliance with stormwater source control requirements; reinspect as needed to achieve compliance.
	Conduct second round of multi-agency business inspections.	Medium	Follow-On	SPU, King County	Complete	--	Dec-08	
S Nevada Street SD	Investigate the Nevada Street SD to locate the outfall, identify connections, confirm drainage areas, and sample sediments.	High	SCAP	SPU	Complete	--	Jun-05	All manholes in the right-of-way were clean and could not be sampled; determine whether any further action is needed.
	Collect a sediment sample from the last manhole above the outfall.	Medium	Follow-On	SPU	Complete	--	Jan-09	Inline sediment sample collected; zinc, fluoranthene, butylbenzylphthalate, and PCBs detected slightly above the SQS/LAET. No further actions are planned.
ConGlobal (formerly Container Care)	Conduct inspection to confirm that all issues related to poor housekeeping and BMPs have been addressed.	Low	SCAP	SPU, Ecology	Complete	--	May-03	
	Verify the installation of stormwater treatment and resolution of permit and stormwater quality issues.	Low	Follow-On	Ecology	In Progress	TBD		As of December 2012, adequate stormwater treatment has not been properly implemented and formal enforcement actions are being pursued by Ecology WQ.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
UPRR Argo Yard	Review existing information to assess the potential for sediment recontamination from this property.	Low	SCAP	Ecology, SPU, UPRR	Complete	--	Dec-05	Referred to King County for Site Hazard Assessment; source control staff will remain vigilant for evidence of contaminant infiltration. Three stormwater treatment units were installed in 2012 and should be operational by January 2013.
	Conduct Site Hazard Assessment	Low	Follow-On	King County	Planned	TBD		
Terminal 108	Conduct groundwater investigation to quantify levels of COCs in groundwater, obtain information about groundwater flow, and assess the potential for sediment recontamination.	Medium	SCAP	Port of Seattle	Complete	--	Oct-07	
	Develop work plan describing source control strategy to be implemented.	Medium	New	Port of Seattle	Complete	--	Feb-08	
	Develop Environmental Conditions Report; identify data gaps.	Medium	New	Port of Seattle	Complete	--	Jan-09	Develop Source Control Strategy Plans for Eastern and Western parcels.
	Develop Source Control Strategy Plan for Western parcel.	Medium	Follow-On	Port of Seattle	Complete	--	Oct-09	Implement source control actions.
	Develop Source Control Strategy Plan for Eastern Parcel.	Medium	Follow-On	Port of Seattle	Complete	--	Aug-11	Source Control Strategy Plan was submitted to Ecology on August 29, 2011. Follow-On: Implement source control actions.
	Implement appropriate source control actions.	Medium	Follow-On	Port of Seattle	In Progress	TBD		Sampling was conducted in 2012.
GSA / Federal Center South	Investigate to determine whether this facility is a potential source of sediment recontamination	Low	SCAP	Ecology, EPA, SPU, GSA	Complete	--	Jun-04	Clean and repair drainage system; correct housekeeping issues.
	Clean and repair storm drain system; correct housekeeping issues	Medium	Follow-On	GSA	Planned	TBD		See also action items identified for the RM 0.9-1.0 East (Slip 1) source control area.
Former JANCO-United, Inc.	Review existing information and conduct a site inspection to determine if wastes dumped on ground have been removed and to assess the potential for sediment recontamination.	Low	SCAP	Ecology	Complete	--	Dec-06	Data reviewed December 2006. Soil samples collected by EPA in 1984 contained VOCs and SVOCs; no record that the soil was removed or the illegal pipe to storm drain was sealed. Follow-On: Conduct Site Hazard Assessment.
	Conduct Site Hazard Assessment	Low	Follow-On	Public Health-Seattle & King County	Planned	TBD		Deferred pending review of groundwater data collected under VCP by property owner/agent.
	Review groundwater data collected under VCP; determine if further source control actions are needed.	Low	New	Ecology	Planned	TBD		
Rainier Commons / Former Rainier Brewery Property	Sample catch basin solids; identify required actions.	Medium	New	SPU	Complete	--	Jan-08	Require property owner/operator to take corrective action; verify completion.
	Require property owner/operator to take corrective action to remove catch basin solids; verify completion.	Medium	New	SPU	Complete	--	Jan-08	Piping and downstream catch basins cleaned; resample system to confirm that PCBs have been controlled.
	Resample storm drain system to confirm that PCBs have been controlled.	Low	New	SPU	Complete	--	Feb-09	Sample from downstream catch basin contained 0.5 mg/kg DW PCBs.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Conduct cleanup and disposal of PCB-contaminated paint chips on the ground surface and in the storm drain system.	High	New	EPA/Property Owner	Complete	--	May-10	Cleanout of storm drain lines conducted by property owner.
	Conduct annual catch basin cleaning.	High	New	King County/Property Owner	Complete	--	Dec-11	Sampling results reported to King County indicate concentrations above action limits specified in the existing discharge authorization. King County to follow up.
	Sample and remove PCB-contaminated building materials, including interior paint, as needed.	High	New	EPA/Property Owner	In Progress	2013		Completed demonstration project for removal of paint containing PCBs. EPA is working with Rainier Commons to develop a plan and schedule for exterior paint removal and some smaller interior projects.
Alaskan Copper Works	Review results of 2007 dye testing to determine which catch basins are discharging to the storm drain system.	Medium	New	SPU/Ecology	Complete	--	Jul-10	SPU/Ecology inspection conducted on July 28, 2010; discharge is to combined sewer, not storm drain.
	Request facility to submit an updated facility plan, to assess locations/plumbing of floor drains in the buildings located on the west side of 6th Avenue S.	Low	New	Ecology	Complete	--	Jul-10	See above. Facility discharges to combined sewer.
Bloch Steel Industries	Request Bloch Steel to provide updated information regarding groundwater monitoring activities at this facility after 2004.	Low	New	Ecology	Planned	TBD		
ColorGraphics	Conduct source control inspections to determine whether stormwater from this facility is discharging to the LDW or to Lake Washington.	Low	New	SPU/Ecology	Complete	--	Sep-10	Facility in compliance as of September 15, 2010. Stormwater drains to the Diagonal Avenue S SD.
Emerald City Bindery	Verify storm drain and sanitary connections to ensure that the sanitary sewer is not inadvertently connected to the storm drain.	Low	New	SPU	Planned	TBD		
MacMillan-Piper, Inc. - Airport Way Facility	Collect catch basin solids to determine if pollutants from agricultural sources at the property are a source of sediment COCs.	Low	New	SPU/Ecology	Planned	TBD		
North Star Casteel	Verify that facility is in compliance with the final Voluntary Compliance Agreement, when issued.	Low	New	SPU	Planned	TBD		
	Review results of environmental investigations to determine if sediment COCs are present in soil and/or groundwater at concentrations that exceed screening levels, and determine if additional actions are needed for source control.	Low	New	Ecology	Planned	TBD		
Pepsi Bottling Group	Review DMRs from 2007 to present to determine if facility is in compliance with its NPDES permit. Conduct follow-up inspections as needed, if review indicates that facility is not in compliance.	Low	New	Ecology	Complete	--	Sep-10	Facility in compliance as of September 28, 2010.
Recycling Depot, Inc.	Review DMRs from 2007 to present to determine if facility is in compliance with its NPDES permit. Conduct follow-up inspections as needed, if review indicates that facility is not in compliance.	Low	New	Ecology	In Progress	TBD		Joint Ecology, EPA and SPU inspection conducted in November 2011. Several compliance issues were noted. EPA requested to take over lead for compliance at this facility.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Seattle Barrel & Cooperage	Sample catch basins on Airport Way to determine if EAA-1 sediment COCs, originating from Seattle Barrel, are present in the public storm drains.	Medium	New	SPU	Complete	--	Apr-09	Catch basin samples collected in March/April 2009 by SPU (samples RCB204, RCB205, RCB206) and analyzed for metals. No screening level exceedances were observed.
Seattle Radiator	Review side sewer cards and/or perform a dye test to determine if the interior floor drain at Seattle Radiator is connected to the storm drain or sanitary sewer.	Low	New	SPU/Ecology	Planned	TBD		
	Review discharge permit/authorization records to determine if Discharge Authorization 366 is valid.	Low	New	King County/Ecology	Planned	TBD		
Skyline Electric & Manufacturing	Review DMRs from 2007 to present to determine if facility is in compliance with its NPDES permit.	Low	New	Ecology	Complete	--	Jul-10	NPDES Compliance inspection conducted by Ecology WQ on July 27, 2010. Warning letter was issued and corrections made.
Western Peterbilt, Inc.	Review the February 2009 dye test results and determine if this facility's discharges to the storm drain and/or sanitary sewer require coverage under the Industrial Stormwater General Permit or a KCIW discharge permit or authorization.	Low	New	Ecology/SPU	In Progress	TBD		Dye test conducted in June 2012 confirms that an internal trench drain, oil/water separator, and steam cleaning wash bay are connected to the storm drain which ties into the Diagonal Avenue S CSO/SD and discharges to the LDW.
Other Upland Properties	Review files for 37 identified upland sites.	Low	SCAP	Ecology	Complete	--	Aug-09	Duwamish/Diagonal CSO/SD Data Gaps Report published August 2009.
	Review files for Leaking Underground Storage Tank sites; determine need for additional action.	Low	SCAP	Ecology	Complete	--	Aug-09	
	Review responses to EPA CERCLA 104(e) Request for Information letters for 18 facilities as identified in Duwamish/Diagonal CSO/SD Data Gaps Report.	Low	New	Ecology	In Progress	TBD		As of December 2012, Ecology has reviewed responses for 3 of the 4 facilities for which 104(e) responses have been received.
	Assess whether 18 facilities (as listed in the Duwamish/Diagonal CSO/SD) are required to apply for coverage under the Industrial Stormwater General Permit. Request facilities to submit applications for coverage, as appropriate.	Medium	New	Ecology	In Progress	TBD		
<b>Early Action Area 2 (RM 2.1-2.2 West; Trotsky Inlet)</b>								
2nd Avenue S SD	Collect storm drain outfall pipe sediment and water samples to evaluate whether contaminants are currently being transported to the EAA-2 inlet via this pathway.	High	SCAP	Ecology	Complete	--	Aug-07	
	Evaluate results of outfall pipe sediment and water samples.	High	Follow-On	Ecology	Complete	--	May-09	
	Collect additional inline sediment samples to evaluate the levels of COCs with respect to sediment recontamination in this drainage.	High	SCAP	SPU	Complete	--	Jun-09	Continue source tracing to identify sources of phthalates and other COCs.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Continue source tracing to identify sources of phthalates and other COCs.	High	SCAP	SPU	In Progress	TBD		During 2012, one in-line solids sample, one onsite catch basin sample, and two right-of-way catch basin samples were collected. Mercury (0.83 mg/kg), zinc (1,660 mg/kg), TPH-oil (3,200-4,900 mg/kg), PCBs (1.03 mg/kg DW), total cPAH (1.0 mg/kg DW), BEHP (8.2-28 mg/kg DW), butyl benzyl phthalate (3.5 mg/kg DW), dimethyl phthalate (0.18 mg/kg DW), and di-n-octyl phthalate (21 mg/kg DW) exceeded the CSL/2LAET in at least one sample.
	Review responses to CERCLA 104(e) letters by Wells Trucking and Leasing, Inc. and Ferguson Enterprises, Inc.	Low	New	Ecology, EPA	Planned	TBD		Responses not yet received from EPA.
Reservoir Overflow	Repair West Seattle Reservoir to remove source of water to the overflow pipe that discharges to the head of the inlet.	Low	New	City of Seattle	Planned	TBD		
Industrial Container Services	Conduct additional site characterization to evaluate concentrations of COCs in groundwater, bank and intertidal sediments, and seeps.	High	SCAP	Ecology	Complete	--	Aug-07	Identify additional data gaps based on sampling results.
	Issue CERCLA 104(e) letter to facility/site/property owners to obtain additional information on historic contamination sources.	Medium	SCAP	EPA	Complete	--	Oct-06	Review responses to CERCLA 104(e) letter.
	Review responses to CERCLA 104(e) letter.	Medium	SCAP	EPA/Ecology	Complete	--	Dec-11	
	Identify PLPs for this site.	Low	New	Ecology	Complete	---	Jan-08	Negotiate Agreed Order for cleanup.
	Identify additional data gaps based on sampling results, and negotiate Agreed Order to conduct an RI/FS and prepare a Cleanup Action Plan.	Medium	Follow-On	Ecology	Complete	--	May-10	Agreed Order No. DE-6720 (effective May 18, 2010).
	Conduct RI/FS, implement interim actions (as needed), and prepare draft CAP.	Medium	Follow-On	Industrial Container Services	In Progress	2014		To be conducted in accordance with Agreed Order No. DE-6720. Revised RI/FS Work Plan submitted to Ecology in February 2012.
	Investigate destination of roof drainage from northwest corner of property.	High	SCAP	King County/ Ecology/ SPU/ Industrial Container Services	Complete	--	Aug-09	These drain to ground and/or sanitary sewer.
Evaluate the need for stormwater characterization (solids and whole water) from this facility if overflow occurs during heavy rainfall events.	Medium	SCAP	Ecology/ KCIW/ SPU	In Progress	2013		To be addressed in accordance with Agreed Order No. DE-6720.	
Douglas Management Company	Conduct groundwater sampling along southern portion of property (adjacent to EAA-2 inlet) to evaluate potential for groundwater transport of contaminants from this site. Collect bank and seep samples.	High	SCAP	Ecology	Complete	--	Jul-08	
	Identify additional data gaps based on sampling results, and determine actions needed to fill them.	High	SCAP	Ecology	Complete	--	May-09	Additional action items identified based on Site Characterization Report and Supplemental Data Gaps Report.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Conduct cleanup as needed to eliminate sources of contaminants to EAA-2; negotiate Agreed Order.	Medium	SCAP	Property owner/operator, Ecology	In Progress	TBD		To be conducted in accordance with Agreed Order No. DE-8258 (effective May 6, 2011).
	Review responses to EPA CERCLA 104(e) Request for Information letter issued to Swan Bay Holdings/Douglas Management Company.	Medium	SCAP	EPA/Ecology	Complete	--	Dec-08	Supplemental Data Gaps report prepared; additional action items identified
	Conduct groundwater sampling along the LDW shoreline to assess the potential for sediment recontamination via groundwater transport.	Medium	New	Ecology	Planned	2014		To be addressed in accordance with Agreed Order No. DE-8258.
	Conduct a re-inspection of the site to confirm that operations are in accordance with all applicable stormwater regulations; evaluate the potential for contaminant transport to the Trotsky inlet or LDW via surface runoff.	Low	Follow-On	Ecology	In Progress	TBD		Inspection conducted on October 26, 2010. Several compliance issues were noted, including sampling and reporting issues and inadequate SWPPP. Revised SWPPP was submitted to Ecology in September 2012.
	Verify storm drainage pathway on the southern portion of the property.	Medium	SCAP	Ecology/SPU	In Progress	2013		Review of 104(e) response could not confirm; request property owner to provide current storm drainage map.
	Request property owner to provide a map showing current storm drainage on the entire property, including locations of storm drains, catch basins, oil/water separators, and outfalls.	Medium	New	Ecology	Planned	2013		Action item identified in Supplemental Data Gaps Report.
	If stormwater discharge to EAA-2 (including the Trotsky inlet to the south and the LDW shoreline to the north and east) is confirmed, assess the need for stormwater characterization (solids and whole water). Collect stormwater samples as needed.	Medium	SCAP	Ecology/ SPU/ Property owner/operator	Planned	2014		To be addressed in accordance with Agreed Order No. DE-8258.
Boyer Towing	Review responses to EPA CERCLA 104(e) Request for Information letters issued to Boyer Towing, Boyer Logistics, and members of the Halvorsen family.	Medium	SCAP	EPA/Ecology	Complete	--	Jun-09	CERCLA 104(e) response was reviewed and a supplemental Data Gaps Report was prepared; additional action items were identified.
	Review responses to EPA CERCLA 104(e) Request for Information letters issued to River View Marina and Mary Catherine Halvorsen, if available.	Medium	New	Ecology	Planned	TBD		Responses from property owner/operator for Parcel D not included in previous review.
	Verify storm drainage pathway on the southern portion of the property.	Medium	SCAP	Ecology/SPU	Complete	--	Jun-09	Stormwater from Parcels B, C, and E-L drains to 2nd Ave S storm drain, per the Supplemental Data Gaps Report. Assess the need for stormwater characterization sampling.
	Assess the need for stormwater characterization (solids and/or whole water) and conduct review of facility's SWPPP.	Medium	Follow-On	Ecology/ SPU	Complete	--	May-12	SWPPP review complete. Revised SWPPP (dated May 2012) was submitted to Ecology in September 2012.
	Request Boyer Towing to prepare an updated SWPPP for its operations at Parcels B and C.	Low	Follow-On	Ecology	Complete	--	Sep-12	WQ inspection conducted on 1/26/2010 indicated that SWPPP was not adequate. Revised SWPPP was submitted September 2012.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Review source tracing data collected by SPU for the 2nd Avenue S storm drain basin to identify whether the Boyer Towing owned or leased parcels are a potential source of contaminants to the Trotsky Inlet and the LDW.	Medium	New	Ecology	In Progress	TBD		Preliminary review indicates phthalates and metals may be present at elevated concentrations.
	Determine if additional storm drain samples are needed.	Medium	New	Ecology/SPU	Planned	TBD		
	Request additional data regarding potential soil contamination at Parcels F and G; evaluate the need for additional characterization.	Medium	New	Ecology	Planned	TBD		Action item identified in Supplemental Data Gaps Report.
	Conduct source control inspections at tenant facilities on Boyer-owned property.	Low	SCAP	SPU	Complete	--	Dec-07	
	Conduct source control inspection of new tenant facility at Parcel J (former Wells Trucking site, 7265 2nd Avenue S).	Low	New	SPU/Ecology	Complete	--	May-12	Inspections conducted at Bill's Mobile Service, 7265 2nd Avenue S, on April 24 and May 15, 2012. Facility in compliance.
<b>Early Action Area 3 (RM 2.8 East; Slip 4)</b>								
North Boeing Field / KCIA / I-5 Storm Drains	Distribute 2005/2006 inline sediment trap data for wet winter season.	High	SCAP	SPU	Complete	--	2006	Continue monitoring of sediment trap data.
	Reinstall sediment traps and continue monitoring as needed.	High	SCAP	SPU, Boeing	Ongoing	2014		Reinstall sediment traps every 6 months until 2014.
	Conduct comprehensive analysis of sediment trap and catch basin data.	High	SCAP	Ecology	Complete	--	Feb-07	
I-5 / Residential Drainage	Complete source tracing.	High	SCAP	SPU	Complete	--	Dec-06	Continue monitoring of sediment trap data.
	Clean out catch basins and lines.	Medium	SCAP	Ecology, SPU, WSDOT	Canceled	--	NA	Contaminant levels remain very low; no action deemed necessary.
Georgetown Flume	Investigate connection toward North Boeing Field as a possible source of PCBs.	High	SCAP	SPU, Boeing	Complete	--	Aug-06	
	Close connections, remove contaminated sediment, and demolish and/or replace the flume.	High	SCAP	SCL, SPU	Complete	--	Sep-09	Removal of flume completed during Summer 2009.
Crowley Marine / 8th Avenue Terminals	Conduct physical site inspection confirming outfalls and what they drain(ed).	Medium	SCAP	Ecology, SPU	Complete	--	2006	
	Compile and evaluate historical groundwater quality data; complete historical use investigation to identify data gaps for recontamination potential (soil and groundwater).	Low	SCAP	Ecology	Complete	--	Oct-06	
	Determine means to fill data gaps.	Low	SCAP	Ecology	Complete	--	Oct-06	Negotiate an Agreed Order; conduct groundwater investigation to fill data gaps.
	Negotiate an Agreed Order for investigation and cleanup of the this site.	Medium	Follow-On	Ecology, PLP	Complete	--	Jul-09	Agreed Order No. DE-6721 (effective October 12, 2009)
	Conduct investigation and cleanup activities in accordance with the Agreed Order, including collection of groundwater and storm drain system samples as appropriate.	Medium	SCAP	8th Avenue Terminals (Crowley)	Planned	2014		
	Collect stormwater runoff and inline solids to assess recontamination potential from current operations.	Medium	SCAP	Ecology, SPU, Crowley	Complete	--	Jul-08	Catch basin samples collected at Alaska Logistics by SPU in July 2008; additional sampling to be conducted under Agreed Order.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Clean catch basins and drain lines.	Medium	SCAP	Crowley	Planned	2013		UPRR to clean catch basins; Alaska Logistics in compliance as of August 2008.
	Conduct a Site Hazard Assessment (SHA).	Medium	New	Ecology	Complete	--	Feb-08	
	Review CERCLA 104(e) responses submitted by Crowley Marine Services, Inc. and Samson Tug & Barge Company, Inc.	Medium	New	Ecology, EPA	Planned	TBD		
First South Properties / Emerald Services	Collect stormwater runoff and inline solids to assess recontamination potential from any ongoing operations.	Medium	SCAP	Ecology, SPU	Complete	--	Nov-06	
	Investigate two 4- to 6-inch outfalls located on the bank of First South Properties. Determine if the outfalls are still functioning and their drainage areas.	Medium	SCAP	Ecology, SPU	Complete	--	2006	
	Clean catch basins and drain lines.	Medium	SCAP	Emerald Services	Complete	--	2006	
	Reassess drainage swale for erosion and recontamination potential for phthalates.	Medium	SCAP	Ecology	Complete	--	2006	
	Compile and evaluate historical groundwater quality data; complete historical use investigation to identify data gaps for recontamination potential (soil and groundwater).	Low	SCAP	Ecology	Complete	--	Oct-06	
	Determine means to fill data gaps.	Low	SCAP	Ecology	Canceled	--	--	Not Required
	Conduct sampling if necessary.	Low	SCAP	Ecology	Canceled	--	--	Not Required
	Reinspect facility and collect inline solids to assess recontamination potential from any ongoing operations.	Medium	New	Ecology, SPU	Planned	TBD		Extensive changes to property drainage and operations since last inspection.
	Review CERCLA 104(e) responses submitted by First South Properties and Evergreen Marine Leasing.	Medium	New	Ecology, EPA	Planned	TBD		Completion date depends on addressee response time and EPA processing time.
Boeing Plant 2	Inspect Bldg. 2-122 area	Medium	SCAP	Ecology	Complete	--	Apr-07	Re-inspect as needed to ensure compliance with permit.
	Sample onsite storm drain solids.	Medium	SCAP	Ecology	Complete	--	May-07	
	Assess existing groundwater data in the area.	Low	SCAP	Ecology, EPA	Planned	TBD		EPA lead
GTSP	Remove PCB contaminated soils; implement erosion or other source control as needed.	High	SCAP	SCL	Complete	--	May-06	Conduct site-wide site characterization.
	Conduct site wide site characterization to assess need for additional remediation.	High	SCAP	SCL	Complete	--	Mar-11	Remove additional contaminated soils.
	Remove additional contaminated soils identified as part of site characterization.	High	Follow-On	SCL	Complete	--	Apr-12	Removal of PCB and TPH contaminated soils took place in spring 2012.
North Boeing Field	Remove last 1,400 linear feet of PCB joint sealant.	High	SCAP	Boeing	Complete	--	2006	Characterize extent of PCBs in new joint sealant.
	Characterize extent of PCBs in new joint sealant material.	High	Follow-On	Boeing	Complete	--	Nov-11	5,725 linear feet of joint sealant material was removed from the NBF Flight Line in 2011.
	Determine impact of remaining joint sealant material on PCB concentrations in stormwater.	High	Follow-On	Ecology	Ongoing	2013		Upstream and downstream stormwater sampling in NBF Flight Line areas in progress.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Complete source evaluation at north drain line and complete clean-out.	High	SCAP	Boeing	Complete	--	Nov-06	Continue source tracing in north drain line.
	Continue source tracing in north drain line to identify and/or eliminate transport of PCBs to Slip 4.	High	Follow-On	Boeing	In Progress	2013		Source tracing in progress as part of 2011-2012 wet season stormwater monitoring.
	Slip-line and/or replace sections of the north storm drain line to reduce the potential for PCB transport to Slip 4.	High	New	Boeing	Complete	--	Mar-08	
	Characterize the extent of PCBs in soil adjacent to the north drain line.	High	New	Boeing	Complete	--	Nov-07	
	Clean Oil/Water Separator 640 and catch basins.	High	SCAP	Boeing	Complete	--	Aug-06	
	Clean out catch basins.	High	SCAP	Boeing	Complete	--	--	Continue source tracing in north drain line.
	Review results of Ecology's TCP, Waste and Water programs, and King County/Hazardous Waste Inspections of NBF (Nov -Dec 2005).	Medium	SCAP	Ecology, EPA	Complete	--	Feb-07	
	Revise Stormwater Pollution Prevention Plan; conduct additional inspections of the NBF facility as necessary.	Medium	SCAP	Ecology, Boeing	Complete		Mar-12	Updated SWPPP completed ; follow-up inspection pending.
KCIA	Sample eight oil/water separators.	High	SCAP	KCIA	Complete	--	Oct-06	Continue source tracing at KCIA.
	Test for PCB joint sealant (~1acre); remove as necessary.	High	SCAP	KCIA	Complete	--	Oct-06	
	Complete source tracing.	High	SCAP	KCIA	Complete	--	Aug-11	KCIA Source Control Report submitted to Ecology June 2011. KCIA north drain line cleaning and video inspection completed August 2011. In 2012, sampled and cleaned six oil/water separators in the north basin.
	Clean out catch basins and lines (if required).	High	SCAP	KCIA	Complete	--	Jun-10	
	Reinspect KC Surplus Storage, NE T-Hangars, and Shultz Distributing, Inc. as necessary to achieve compliance with BMPs.	Medium	SCAP	SPU, Ecology	Complete	--	Jul-07	Conduct periodic re-inspections as needed.
	Conduct follow-up inspections at Shultz Distributing, Inc. until compliance is achieved. Evaluate potential contaminants of concern and pathways.	Low	SCAP	KCIA, Ecology	Complete	--	Jul-07	KCIA conducted Phase II Environmental Site Assessment at the Shultz site in May 2012 to verify contamination at the site. Shultz Distributing and its lessees are working with Ecology's VCP to achieve compliance with regulatory requirements.
	Investigate soil and groundwater investigation and cleanup under Ecology's VCP.	Low	Follow-On	KCIA, property operator	In Progress	TBD		
	Conduct thorough NPDES compliance inspection and determine if additional parameters need to be monitored.	Medium	Follow-On	Ecology	Complete	--	Mar-12	KCIA's stormwater permit was reissued to cover the entire airport facility. In 2012 KCIA updated its SWPPP to cover all industrial activity areas of the airport. Sample parameters include turbidity, pH, zinc, copper, and petroleum sheen.
	Continue business source control inspections and re-inspections as needed to verify that facilities comply with applicable regulations and BMPs.	High	Follow-On	SPU, Ecology	Canceled	--	--	Ongoing activity; see Table 3-1.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
NBF-GTSP	Negotiate an Agreed Order for investigation and cleanup of the this site.	High	New	Ecology, King County, City of Seattle, Boeing	Complete	--	Aug-08	Agreed Order No. DE-5685.
	Update NBF/GTSP Data Gaps Report to incorporate recent activities and data.	Medium	New	Ecology	Complete	--	Aug-09	
	Conduct RI/FS and implement interim actions (as needed).	High	New	Ecology, Boeing, City of Seattle, King County	In Progress	2014		To be conducted in accordance with Agreed Order No. DE-5685.
Upland Properties	Review data for contaminants of concern or pathways to Slip 4 for upland properties.	Low	SCAP	Ecology, SAIC	Complete	--	Dec-06	
Adjacent and Upland Properties	Review municipal and industrial NPDES permits for COCs found in sediments.	Low	SCAP	Ecology, EPA	Complete	--	Dec-08	NPDES permits do not track sediment COCs.
<b>Early Action Area 4 (RM 2.8-3.7 East; Boeing Plant 2 to Jorgensen Forge)</b>								
Boeing Plant 2	Evaluate the remaining Corrective Measures Study study areas and continue to determine needed source control actions.	Medium	SCAP	EPA, Boeing	In Progress	TBD		
	Continue to delineate and evaluate the EMF plume.	Medium	SCAP	EPA, Boeing	In Progress	TBD		
	Complete design and implementation of dredging, capping, and/or backfilling of the Duwamish Sediment Other Area Interim Measure.	High	SCAP	EPA, Ecology, Boeing	In Progress	TBD		
	Remove contaminated bank fill material.	High	SCAP	EPA, Boeing	Planned	TBD		
	Conduct monthly sampling, including groundwater sampling and vapor sampling of the DDC wells and multiple points along the vapor treatment system.	Medium	SCAP	EPA, Boeing	In Progress	TBD		
	Continue quarterly shoreline groundwater monitoring.	High	SCAP	EPA, Boeing	In Progress	TBD		
	Re-evaluate the SWPPP and make necessary changes if process/operational changes are made at Plant 2.	Low	SCAP	Ecology, Boeing	Ongoing	TBD		
	Excavate PCB-contaminated soil in the substation area (southwest corner of Plant 2).	High	New	Boeing, Jorgensen	Planned	TBD		
	Address removal of materials containing PCBs, including joint caulk material.	High	SCAP	EPA, Boeing	Complete	--	Sep-10	Completed removal of joint caulk material containing PCB concentrations greater than 25ppm from concrete in 2-10 area. Removed 1,545 linear feet of caulk material.
	Conduct a joint hydrologic investigation with Jorgensen Forge to provide additional hydrogeologic data at the boundary of the two facilities.	High	SCAP	Boeing, Jorgensen	Planned	TBD		
	Collect in-line sediment samples in the City of Seattle and City of Tukwila systems immediately prior to discharge to Plant 2's storm drain system.	High	SCAP	EPA, Boeing	Planned	TBD		
Conduct stormwater source control sampling of suspended solids and/or water along active storm drain lines.	High	New	Boeing	In Progress	TBD			
Implement catch basin solids sampling program.	High	New	Boeing	In Progress	TBD			

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Determine if the city storm drain outfall discharging to EAA-4 at the South Park Bridge is Outfall J or another outfall.	Medium	SCAP	EPA, City of Seattle	Complete	--	Aug-08	Completed during reconnaissance for sediment trap installation.
Jorgensen Forge	Conduct a joint hydrologic investigation with Boeing to provide additional hydrogeologic data at the boundary of the two facilities.	Medium	SCAP	Boeing, Jorgensen	Planned	TBD		
	Conduct a source control investigation through Ecology Agreed Order No. DE-4127 to determine if the facility is an ongoing source of contamination to LDW sediments.	High	SCAP	Jorgensen, Ecology	Complete	--	Mar-11	Completed under Agreed Order No. DE-4127.
	Conduct soil and groundwater sampling in the southeast portion of the site (historically thought to have been occupied by a wood treating facility) to determine if arsenic contamination is present and if so, whether the contamination is leaching into the adjacent sediments.	High	SCAP	Ecology, Jorgensen	Complete	--	Mar-11	Completed under Agreed Order No. DE-4127.
	Review current groundwater monitoring data to ensure that groundwater is not a pathway for contaminants to the LDW.	High	SCAP	Ecology, Jorgensen	Complete	--	Mar-11	Completed under Agreed Order No. DE-4127.
	Conduct groundwater sampling in the center of the property (previously occupied by Isaacson Iron Works) to determine if contaminants are present above screening levels.	High	SCAP	Ecology, Jorgensen	Complete	--	Mar-11	Completed under Agreed Order No. DE-4127.
	Determine ownership of the 12- and 24-inch diameter storm drain lines located in an easement along the Jorgensen/Boeing property line; determine the exact locations of the connections between these lines and the stormwater systems of Jorgensen, Boeing, City of Tukwila, and KCIA.	High	SCAP	Ecology, Jorgensen Forge, Boeing, City of Tukwila, KCIA	Complete	--	Nov-08	Boeing agreed to take responsibility for the 12-inch line. Ecology issued Notice of Violation to King County/City of Tukwila for PCBs in 24-inch line.
	Remove PCB-contaminated sediments from the 24-inch storm drain line.	High	Follow-On	EPA, Boeing, Jorgensen	Complete	--	Feb-11	Cleaning and closure of 15-inch and 24-inch public storm drains completed in response to an EPA Action Memorandum for a Time Critical Removal Action.
	Assess the quality of discharged water and process through which water is discharged from the vacuum degasser pit, railroad scale sumps, argon-oxygen-decarbonization, and scale sumps.	Low	SCAP	EPA, Jorgensen	Complete	--	Mar-11	
	Develop a hydrogeologic site model as part of the source control investigation to characterize the groundwater system on site, including tidal influence.	High	SCAP	Jorgensen, Boeing	In Progress	TBD		
	Continue to address PCB and metals contamination in sediments of the LDW and Shoreline Bank Area through EPA CERCLA Order No. 10-2013-0032.	High	SCAP	EPA, Jorgensen	Complete	--	Feb-12	Certificate of Completion approved by EPA in February 2012.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Negotiate an Amended Administrative Order on Consent for preparation of a Work Plan to clean up affected sediments along a portion of the LDW adjacent to this property.	High	New	EPA, Jorgensen	Complete	--	Nov-12	EPA issued an Administrative Settlement Agreement, Order on Consent, and Statement Work for the Jorgensen Forge Early Action Area Non-Time Critical Removal Action Implementation in November 2012.
	Implement Non-Time Critical Removal Action.	High	Follow-On	EPA, Jorgensen	In Progress	TBD		
KCIA	Determine the connections between the KCIA stormwater system, the City of Tukwila system, and the 24-inch stormwater pipeline along the Jorgensen/Boeing property line.	High	SCAP	Ecology, KCIA, Jorgensen, Boeing, City of Tukwila	Complete	--	Dec-09	This drainage was rerouted in December 2009, and currently discharges to KCIA SD#2 (EAA-6).
	Determine whether additional sampling of PCBs in the KCIA stormwater system and joint caulk material is necessary, based on review of PCB sampling results for KCIA Lot 12.	Medium	SCAP	Ecology	Complete	--	Jan-12	KCIA provided a source control report for KCIA drainage basin #5 in January 2009. An inline sediment trap located in KCIA Lot 13, remains in place to characterize inputs from Lot 12, which is Boeing's leased area.
	Test, and as needed, remove any material that contains elevated levels of PCBs in this portion of KCIA (including caulk containing PCBs).	Medium	SCAP	Ecology, KCIA	Complete	--	Jun-12	Samples collected at KCIA Lot 13 in June 2012 showed PCBs at 1.1 mg/kg DW. Caulk samples collected in 2001 contained 0.75 to 0.83 mg/kg DW PCBs. Stormwater in this area now discharges to south pump station and EAA-6. PCBs at south pump station in August 2012 were below the SQS/LAET. Lot 13 was mechanically swept in June 2012.
	Review the SWPPP and make necessary changes to prevent contaminants from entering the KCIA stormwater system.	Low	SCAP	Ecology, KCIA	Complete	--	Mar-12	KCIA's stormwater permit was reissued to cover the entire airport facility. In 2012 KCIA updated its SWPPP to cover all industrial activity areas of the airport. Stormwater from Lot 13 was rerouted to the central area basin (EAA-6) in 2009.
	Monitor remedial activities at the former Boeing EMF to ensure that contaminated soil does not enter the storm drain system.	Medium	SCAP	King County, EPA	In Progress	TBD		KCIA is closely monitoring and coordinating access for Boeing to perform remediation work. Boeing plans to continue Enhanced Reductive Dechlorination (ERD) injections in March 2013.
East Marginal Way S.	Determine location and connection of large pipe crossing the northern edge of the Jorgensen property.	High	SCAP	City of Tukwila, Jorgensen, KCIA	Complete	--	2008	
	Determine connections between the KCIA stormwater system and the City of Tukwila system.	High	SCAP	City of Tukwila, KCIA	Complete	--	Dec-09	In December 2009, KCIA rerouted its storm drain lines to eliminate discharge to this pipeline.
<b>Early Action Area 5 (RM 3.4-3.8 West; Terminal 117)</b>								
Terminal 117	Verify placement of institutional controls and write/adopt restrictive covenants to prevent recontamination, check soil cover/barrier, discuss further assessment of subsurface contamination at Malarkey plant.	Medium	SCAP	Port of Seattle, Ecology	Complete	--	Sep-07	Amendment to the scope of work requires more extensive removal of contamination. The basis for this has changed and is no longer applicable.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Conduct a time-critical removal action to remove additional PCB-contaminated soil in the upland portion of Terminal 117.	Medium	New	Port of Seattle	Complete	--	2006	
	Check soil cover/barrier across site for industrial use based on suspected residual subsurface contamination.	Medium	SCAP	Port of Seattle, Ecology	Complete	--	Sep-07	Amendment to the scope of work requires more extensive removal of contamination. The basis for this has changed and is no longer applicable.
	Continue discussions between the Port, the City of Seattle, EPA, and Ecology regarding how to further address the potential presence of subsurface contamination in portions of the site formerly occupied by the Malarkey plant.	High	SCAP	Port of Seattle, Ecology, City of Seattle, EPA	Complete	--	Sep-08	Conduct soil sampling to determine whether subsurface contamination is present.
	Revise the July 2008 EE/CA to incorporate all relevant upland and right-of-way data, including assessments of portions of the site formerly occupied by the Malarkey plant.	High	New	City of Seattle, Port of Seattle, EPA	Complete	--	Jun-10	
	Conduct soil sampling at former Malarkey plant location to determine whether contamination is present in subsurface soil.	High	Follow-On	City of Seattle, Port of Seattle	Complete	--	Jun-10	This work has been incorporated into the EE/CA.
	Complete needed assessments of portions of the site formerly occupied by the Malarkey plant.	High	Follow-On	City of Seattle, Port of Seattle	Complete	--	Jun-10	This work has been incorporated into the EE/CA.
	Conduct removal action in accordance with EPA Enforcement Order on Consent.	High	Follow-On	City of Seattle, Port of Seattle	In Progress	2014		Sediment removal scheduled December 2013-February 2014.
	Install and sample additional groundwater monitoring wells.	High	New	City of Seattle, Port of Seattle	Complete	--	2008	Installed six additional wells and sampled all 11 wells quarterly through May 2009.
	Install and sample deeper monitoring well on Dallas Ave. to evaluate presence of NAPL.	Medium	Follow-On	City of Seattle, Port of Seattle	Complete	--	2009	
	Inspect current tenants in coordination with the Port of Seattle to determine if they are potential sources of recontamination.	Low	SCAP	Port of Seattle, Ecology	Complete	--	Sep-06	The North Building tenant vacated in September 2006.
	Discuss condition and maintenance of onsite septic system with the Port.	Low	SCAP	Port of Seattle, Ecology	Complete	--	Feb-07	The South Building tenant vacated on February 28, 2007.
	Investigate T-117 property and sediments for the presence of dioxin.	Medium	Follow-On	Port of Seattle, City of Seattle	Complete	--	May-09	
Adjacent Streets/Dallas Ave.	Conduct Interim Action to clean up PCBs in street soils.	High	SCAP	City of Seattle	Complete	--	Dec-04	Continue monitoring of stormwater and catch basin sediments.
	Continue monitoring of stormwater and catch basin sediments	High	Follow-On	SPU, Port of Seattle	Ongoing	TBD		
	Remove PCB-contaminated soils in residential yards at 8601 and 8609 17th Avenue S., and restore yards	High	SCAP	City of Seattle	Complete	--	Jun-05	
	Conduct cleanup action to remove PCB-contaminated street soils, install new storm drainage, and restore roads.	Medium	SCAP	City of Seattle	In Progress	2015		Streets and yards will be cleaned after contaminated materials are removed from Terminal 117.
	Install permanent stormwater collection/treatment system per Seattle code.	Medium	Follow-On	City of Seattle	Planned	TBD		

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Investigate nearby streets and yards for the presence of dioxin.	Medium	Follow-On	City of Seattle	Complete	--	May-09	
South Park Marina	Conduct inspection at South Park Marina, including review of waste management practices and compliance with permit.	Medium	SCAP	Ecology	Complete	--	Jun-05	Conduct follow-up inspection
	Conduct follow-up inspections until compliance is achieved.	Low	Follow-On	Ecology	Ongoing	TBD		
	Investigate sewer connections and discharge locations of storm drains and catch basins.	Low	SCAP	Ecology	Planned	TBD		
	Investigate location and fate of A&B Barrel waste lagoon.	Medium	SCAP	Ecology	Complete	--	Jun-07	Conduct soil, groundwater, and bank sampling.
	Conduct soil, groundwater, and bank sampling.	Medium	Follow-On	Ecology, SAIC	Complete	--	Jul-08	
	Sample soils adjacent to fence between Terminal 117 and South Park Marina due to contamination observed in borings at Terminal 117.	Medium	SCAP	Ecology	Complete	--	Jul-10	EE/CA approved by Ecology. The Port of Seattle will remove this material as part of the remedy.
	Sample catch basins for metals and phthalates	Low	SCAP	Ecology	Planned	TBD		
Basin Oil	Monitor facility demolition and characterize soil and groundwater contamination.	Medium	SCAP	Ecology	Complete	--	Jun-09	
	Refer for Site Hazard Assessment.	Medium	SCAP	Ecology	Complete	--	Dec-05	Conduct Site Hazard Assessment
	Conduct Site Hazard Assessment.	Medium	Follow-On	Ecology	Planned	TBD		
	Conduct joint EPA/Ecology compliance inspection.	Medium	SCAP	Ecology, EPA	Complete	--	May-05	
	Re-inspect as needed to ensure compliance.	Low	Follow-On	Ecology, SPU	Complete	--	Jun-09	Site is vacant, soils have been excavated, and sampling has been completed; no further inspections are necessary.
Boeing South Park	Conduct inspection; review drainage system and stormwater pollution prevention practices, check status of hydraulic oil recovery, and look for other potential sources.	Low	SCAP	Ecology	Complete	--	Apr-07	NPDES compliance inspection conducted in October 2012. Boeing's request for a no-exposure exemption from permit coverage was denied.
<b>Early Action Area 6 (RM 3.7-3.9 East; Boeing Isaacson/Central KCIA)</b>								
KC Airport SD #2/PS45 EOF (King County Storm Drain / SPU EOF)	Collect and analyze sediment trap sample to evaluate concentrations of chemicals in the central KCIA drainage basin. Reinstall sediment trap and continue to sample as needed.	High	SCAP	SPU, KCIA	Complete		Jun-12	June 2012 inline samples showed exceedences of screening levels for HPAHs only. December 2010 samples showed no exceedences of screening levels. KCIA will take over annual sediment trap sampling from SPU starting 2013.
	If COCs are present in the storm drain line, conduct source tracing to identify potential contaminant sources at KCIA.	High	SCAP	King County, SPU	Complete		Aug-12	In August 2012 KCIA initiated source tracing by sampling storm drain solids at the south pump station. Metals, PCBs, PAHs, and phthalates were below screening levels. In October 2012, four OWSs within the central basin were sampled and cleaned. The OWSs appear to be functioning properly in reducing the migration of contaminants offsite and into the LDW.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Collect and analyze a solids sample from near the KC Airport SD #2/PS45 EOF outfall to evaluate whether chemicals are being discharged to EAA-6 via this outfall.	Medium	SCAP	King County, SPU	Complete		Jun-12	Samples collected in June 2012 showed no exceedences to screening levels for PCBs, metals, phthalates, or TPH. Inline samples exceeded HPAH screening levels. The south pump station sample did not exceed HPAH screening levels. KCIA postulates that the elevated HPAH in the inline samples may be attributed to high tide backflow from offsite.
	Review information from KCIA to determine whether additional source control investigations are needed at central KCIA.	Medium	Follow-On	Ecology	In Progress	TBD		
	If COCs are present in the storm drain line downstream of CB-39, collect a solids sample from CB-39 on the Boeing Thompson property.	Medium	SCAP	Boeing	Planned	TBD		
	Follow up on discharges observed from the KC Airport SD#2/PS45 EOF in 2007 and 2008, to identify sources and/or characteristics of discharges.	High	SCAP	Ecology, SPU, KCIA	Complete		Oct-12	In October 2012 KCIA repaired and replaced a large number of its stormwater lines and installed a large water quality vault for the south pump station. The south pump station discharge pipes were cleaned in November 2012.
Boeing Isaacson/Thompson Site	Negotiate an Agreed Order to conduct a MTCA RI/FS at the Boeing Isaacson/Thompson site.	High	SCAP	Ecology, Boeing	Complete	--	Apr-10	Agreed Order No. DE-7088.
	Characterize contaminant concentrations in subsurface soil near the former location of the Slip 5 outfall, to the north of the 48-inch storm drain line, and at other locations on the property as needed.	High	SCAP	Boeing	Planned	TBD		To be addressed as part of Agreed Order No. DE-7088.
	Conduct a comprehensive soil and groundwater investigation at this property, including groundwater monitoring at selected wells and evaluation of potential arsenic sources; include wet and dry season samples.	High	SCAP	Boeing	Planned	TBD		To be addressed as part of Agreed Order No. DE-7088.
	If COCs in soil and groundwater are present at concentrations that pose a risk of sediment recontamination, then develop a plan for controlling these contaminant sources.	High	SCAP	Ecology, Boeing	Planned	TBD		To be addressed as part of Agreed Order No. DE-7088.
	If needed, conduct additional tidal studies to address the tidal efficiency anomaly identified in well I-205 during a tidal study conducted in 2000, and to collect additional information on tidal influences.	Low	SCAP	Boeing	Planned	TBD		To be addressed as part of Agreed Order No. DE-7088.
	Collect bank samples and analyze them for COCs to evaluate potential for sediment recontamination from bank erosion.	Medium	SCAP	Boeing, Ecology, and/or Port of Seattle (TBD)	Planned	TBD		To be addressed as part of Agreed Order No. DE-7088.
	Investigate the condition of the 48-inch KC Airport SD#2/PS45 EOF that passes through the Boeing Isaacson property.	Medium	SCAP	King County	Planned	TBD		

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Clarify the purpose, function, and configuration of the edge drains along the Boeing Isaacson shoreline.	Low	SCAP	Boeing, Port of Seattle	In Progress	TBD		To be addressed as part of Agreed Order No. DE-7088.
	Collect stormwater solids samples from the catch basins on the Boeing Isaacson property that drain to the Boeing Thompson stormwater system.	Medium	SCAP	Boeing	Planned	TBD		To be addressed as part of Agreed Order No. DE-7088.
	Investigate the status and source of the unidentified outfall pipe located near the Boeing Isaacson/Jorgensen Forge property boundary (Outfall 2063).	Low	SCAP	Boeing	Planned	TBD		To be addressed as part of Agreed Order No. DE-7088.
	Review Boeing memorandum regarding findings associated with the two drainage pipes that may be discharging to the 8801 Site, and assess the potential that these discharges may contribute to recontamination of LDW sediments.	Medium	SCAP	Ecology	In Progress	TBD		To be addressed as part of Agreed Order No. DE-7088.
	Collect storm drain solids samples from the Boeing Thompson stormwater system to assess concentrations of contaminants.	Medium	SCAP	Boeing	Planned	TBD		To be addressed as part of Agreed Order No. DE-7088.
	Conduct a source control inspection to clarify the nature of current activities at this property and to assess the current potential for sediment recontamination.	Low	SCAP	Ecology	Planned	TBD		
KCIA	Conduct source tracing as needed, depending on sample results from the sediment trap recently installed on the KC Airport SD#2/PS45 EOF system.	Medium	SCAP	King County	Complete	--	Jun-12	Inline sediment trap samples collected in December 2010 and June 2012; HPAHs exceeded screening levels. Grab samples collected as of 2012 showed no exceedences. The south pump station was cleaned in August 2012; pump station discharge pipes were cleaned in November 2012.
	Verify the status of efforts to clean all catch basins in the central KCIA storm drain basin; complete cleaning as necessary.	Medium	SCAP	King County	Complete	--	Oct-12	Eastern and western airport catch basins were cleaned in 2008 and 2010, respectively. Catch basin cleaning in the KCIA central basin was completed in October 2012.
	Determine the presence or absence of PCB-containing joint caulking material within the central KCIA drainage basin.	High	SCAP	King County	Complete	--	Dec-10	June 2012 Inline sediment trap data showed PCB concentrations below screening levels. The associated grab sample had no detection of PCBs. Inline and grab samples collected since 2009 showed PCB concentrations below screening levels or not detected. There are no further plans for sampling for sources of PCBs.
	Conduct a follow-up inspection at United Parcel Service (UPS) Boeing Field to verify that corrective actions have been taken with regard to elevated copper and zinc in stormwater.	Low	SCAP	Ecology	Planned	TBD		

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Conduct a follow-up inspection at Ameriflight to identify which drains discharge to the storm drain system and to ensure that no contaminants are entering storm drains.	Low	SCAP	Ecology	Planned	TBD		
	Assess/confirm the adequate completion of cleanup activities associated with petroleum Leaking Underground Storage Tanks at Hangar Holdings.	Low	SCAP	Ecology	Planned	TBD		
	Conduct a follow-up inspection at Western Metal Products to confirm that catch basins were cleaned out as requested, and to evaluate whether this facility should be required to obtain a stormwater permit.	Low	SCAP	SPU, Ecology	Canceled	--	--	As of 2012, Western Metal Products no longer operates at KCIA.
	Conduct a follow-up inspection at DHL Express to verify that corrective actions have been completed and that no contaminants are entering the storm drain system.	Low	SCAP	SPU	Planned	TBD		
	Conduct re-inspections at KCIA tenant facilities for which the most recent compliance inspection was conducted more than 3 years ago, and any new tenant facilities, to ensure that activities are in compliance with source control best management practices.	Medium	SCAP	SPU, Ecology, King County	Complete	--	Jun-12	KCIA inspected tenant facilities in 2012 in accordance with its municipal and industrial NPDES Permit Requirements. New tenants in 2013 will be assessed for pollutant sources and best management practices soon after start of operations.
<b>Early Action Area 7 (RM 4.9 East; Norfolk CSO/SD)</b>								
Norfolk CSO/SD/EOF	Compile available GIS data to gain a better understanding of the configurations, relationships, and interconnections of the various stormwater systems; conduct dye testing if needed.	Medium	SCAP	SPU, City of Tukwila, King County	Complete	--	Jul-08	
	Obtain drainage plans for private properties along East Marginal Way S. to better delineate drainage basin boundaries in this area.	Low	SCAP	SPU, City of Tukwila, King County	Planned	TBD		
	Conduct further source tracing and sampling within the Norfolk CSO/SD.	Medium	SCAP	Ecology, property owners	In Progress	TBD		20 sediment trap samples have been collected as of December 2011.
Boeing Developmental Center (BDC)	Continue sediment monitoring in the vicinity of the south storm drain sediment removal activities.	High	SCAP	Boeing	In Progress	TBD		Sediment samples were collected in November 2011 as part of annual monitoring.
	Determine the source of PCBs in storm drain solids and conduct source control activities to remove PCBs from the system.	High	SCAP	Boeing	Complete	--	Oct-09	Completed further pressure washing of storm drain line from Vortechincs unit upstream toward and beneath Building 9-101. Boeing conducts annual cleanout of the sediment trap and other oil-water separators.
	Continue monitoring storm drain solids.	High	SCAP	Boeing	In Progress	TBD		PCB concentrations declining. Solids samples collected from Vortechincs sediment trap unit in November 2011. Additional sampling conducted in August 2012. Ecology completed sampling of storm drain solids in another drain line from the BDC (to Outfall 2088).

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Determine need for cleanup of PCB-containing caulk and other building materials	Medium	SCAP	Ecology, Boeing	In Progress	TBD		Boeing has focused upland sampling on drainage areas where impacts to the sediments were detected. In the areas investigated through December 2011 there was no need identified to cleanup caulk or other building materials. Other areas (other buildings/areas) may be investigated as necessary.
	Re-evaluate SWPPP to determine whether process/operational changes have been made at the BDC, and modify as necessary to address new conditions.	Low	SCAP	Ecology, Boeing	Complete	--	Oct-11	The SWPPP was updated in July 2010, and the SPCC in October 2011.
	Re-evaluate the Industrial Stormwater General Permit to assure that the appropriate parameters are measured to assess ongoing sources.	Low	SCAP	Ecology, Boeing	Planned	TBD		
	Determine whether groundwater and soil sampling are needed at Parcel 0423049016 to assess possible historical contamination.	Medium	SCAP	Ecology, Boeing	In Progress	TBD		The initial data gap identified in this area was from a 2007 E&E report noting a barge visible in a historical aerial photo. The barge is still present (now rotten and abandoned) and it is in the LDW on Department of Natural Resources land outside of the noted parcel (Parcel 0423049016). Boeing has identified a historical Phase 1 assessment for the 0423049016 Parcel and is attempting to obtain a copy of that report.
Military Flight Center	Conduct additional testing to assess the effectiveness of removal of PCB-contaminated material; provide caulk removal and testing reports to Ecology.	Medium	SCAP	Boeing	Planned	TBD		
	Re-evaluate the SWPPP and NPDES permit and make any necessary changes, including parameters to address potential ongoing sources.	Low	SCAP	Ecology, Boeing	Planned	TBD		The SWPPP was updated by Boeing in February 2010; the SPCC was updated in August 2009.
	Conduct inspection to ensure that pollution prevention practices are adequate and the facility is in compliance with its stormwater permit.	Low	SCAP	Ecology	In Progress	TBD		
	Monitor stormwater for PCBs at discharge points to assess potential ongoing sources.	Medium	SCAP	Boeing	In Progress	TBD		Boeing conducts annual monitoring for PCBs in an oil-water separator at the Military Flight Center.
	Discuss cleanup options for removal of caulk containing PCBs at less than 50 mg/kg.	Medium	SCAP	Ecology, Boeing	Planned	TBD		
KCIA	Determine where the KCIA storm drain system connects to the Norfolk CSO/SD.	Low	SCAP	KCIA	Complete	--	Jul-05	KCIA has two catch basins, located in grassy areas, that connect to the Norfolk CSO/SD basin. Other up-gradient, offsite drainages connect to the Airport line from the east and south which includes the City of Seattle, Associated Grocers, and BNSF.

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Test and remove any material, if needed, in the southern portion of KCIA that contains elevated levels of PCBs (e.g., caulk containing PCBs).	Medium	SCAP	KCIA	Complete	--	2010	No caulk material is present in this area, only an asphalt service road. Testing not needed.
	Re-evaluate the SWPPP and make any necessary changes to address ongoing sources.	Low	SCAP	Ecology, KCIA	Complete	--	Jul-05	No airport industrial activity occurs in this area. No changes to SWPPP are needed.
Unified Grocers / Associated Grocers	Sample monitoring wells located near the former truck shop to evaluate current groundwater flow and extent of the contaminant plume; determine if additional monitoring wells are needed.	Medium	SCAP	Property owner	Planned	TBD		
	Re-evaluate the free product removal strategy to determine its source control effectiveness.	Medium	SCAP	Property owner	Planned	TBD		
	Determine whether additional groundwater and soil assessment is needed for the maintenance building where UST removal activities took place in 1995.	Medium	SCAP	Ecology	Planned	TBD		
	Apprise the City of Seattle Department of Planning & Development of the potential for new construction or redevelopment activities to encounter contaminated soil or groundwater, so that this can be addressed in the project construction dewatering plan.	Low	SCAP	SPU	Complete		May-08	
	Evaluate spill prevention/cleanup plan for the two operational USTs to assure adequate control of potential spills.	Low	SCAP	Ecology, Property owner	Planned	TBD		
	Determine whether a SWPPP is required to address potential ongoing sources.	Low	SCAP	Ecology	In Progress	TBD		NPDES ISGP compliance inspections were conducted by WQ in December 2010 and February 2011.
Northwest Auto Wrecking	Conduct soil, groundwater, surface water, and sediment sampling, as appropriate, to evaluate potential historical sources.	Medium	SCAP	Northwest Auto Wrecking	Planned	TBD		Review sampling results and assess potential for sediment recontamination.
	Review results of soil, groundwater, surface water, and/or sediment sampling to assess potential for sediment recontamination.	Medium	SCAP	Ecology	Planned	TBD		
	Conduct facility inspection to assess potential ongoing sources.	Low	SCAP	Ecology	Complete	--	Jul-07	Business has closed; property is vacant. Conduct facility inspection once a new business is in place.
	Determine whether an NPDES permit and SWPPP are required.	Low	SCAP	Ecology	Cancelled	--	Jul-07	Not required; property is vacant.
	Obtain information pertaining to the storm drain system from Northwest Auto Wrecking to assess potential historic and ongoing sources.	Low	SCAP	Ecology	Complete	--	2005	Business has closed; property is vacant.
	Determine whether the storm drain system connects to the Norfolk CSO/SD.	Medium	SCAP	Northwest Auto Wrecking	Complete	--	2005	Business has closed; property is vacant.
	Once a new business is operating at this site, conduct a facility inspection to assess the potential for sediment recontamination associated with this property.	Low	Follow-On	Ecology, City of Tukwila, KCIW	Planned	TBD		

**Table 3-2. Source Control Action Items - Early Action Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Affordable Auto Wrecking	Conduct surface water, soil, and groundwater sampling to assess the potential for sediment recontamination.	Medium	SCAP	Affordable Auto Wrecking	Planned	TBD		
	Determine whether the storm drain system connects to the Norfolk CSO/SD.	Medium	SCAP	Affordable Auto Wrecking, SPU, City of Tukwila	Planned	TBD		
	Inspect facility to ensure that recent drainage system modifications are functioning properly and that contaminated runoff does not flow into the municipal storm drain system on MLK Way.	Medium	SCAP	Ecology, SPU, KCIW	Planned	TBD		
	Determine cleanup options for removal of historically-contaminated media, as appropriate.	Medium	SCAP	Ecology, Affordable Auto Wrecking	Planned	TBD		
	Re-evaluate the SWPPP and make necessary changes to address potential ongoing sources.	Low	SCAP	Ecology, Affordable Auto Wrecking	Planned	TBD		
	Oversee and monitor discharges to the combined sewer system.	Medium	SCAP	KCIW	Planned	TBD		
Arco Gas Station	Conduct soil sampling in the area adjacent to the former tank farm under the Voluntary Cleanup Program, to determine if soils are impacted and if remediation is necessary to control this potential contaminant pathway.	Medium	SCAP	Arco	Planned	TBD		
	Conduct additional groundwater monitoring.	Medium	SCAP	Arco	Planned	TBD		
	Based on results of soil and groundwater sampling, determine whether further actions are needed to address potential historical sources.	Medium	SCAP	Ecology	Planned	TBD		
	Determine if a SWPPP is required to address potential ongoing sources.	Low	SCAP	Ecology	Planned	TBD		
	Gain a better understanding of the storm drain system and possible historic or present connections to the Norfolk CSO/SD.	Low	SCAP	Ecology	Planned	TBD		

**Priority:**

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

**Type:**

SCAP	Action item identified in a SCAP
Follow-On	Action item is a follow-on to an action item identified in a SCAP
New	Action item identified after publication of the SCAP

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
<b>RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)</b>								
Harbor Marina Corporate Center / Port of Seattle Terminal 102	Inspect drainage connections to all outfalls. Work with adjacent property owners to clarify origins and ownership of each outfall at the Harbor Marina Corporate Center.	Low	SCAP	Ecology, Port of Seattle	Planned	TBD		
	Determine the permitting requirements and responsible parties for each outfall. Work with adjacent property owners to confirm permit requirements for outfall HRE-1 and assign appropriate responsibility.	Medium	SCAP	Ecology, Port of Seattle	Planned	TBD		
	Demonstrate that the marina is in compliance with all applicable permits.	High	SCAP	Port of Seattle	Planned	TBD		
Port of Seattle Terminal 104	Determine how to address identified data gaps in the western portion of T-104.	High	SCAP	Ecology, Port of Seattle	Planned	TBD		
	Prepare and submit an annual report to document groundwater monitoring results and provide recommendations for future remedial efforts as stated in the VCP Cleanup Action Plan	Medium	SCAP	Port of Seattle	Planned	TBD		
	Ensure that storm drain structures and function are completely delineated and properly permitted. Existing drainage problems have been identified and need to be addressed.	High	SCAP	Ecology, Port of Seattle	Planned	TBD		
	Review post remediation reports and annual report as part of the VCP and determine whether further action is needed.	High	SCAP	Ecology	Planned	TBD		
Ash Grove Cement	Negotiate an agreed order for a Remedial Investigation/ Feasibility Study that will focus on potential soil and groundwater contamination at the site.	High	SCAP	Ecology, Property owner/operator	Planned	TBD		
	Obtain a new NPDES permit for discharge into the City storm drain that discharges at S Hind Street.	High	SCAP	Ecology, Property owner/operator	Complete	--	Apr-10	NPDES permit issued in April 2010 and was effective in June 2010.
	Ensure that storm drain system structures and function are delineated, properly permitted, and existing drainage problems have been identified.	Medium	SCAP	Ecology	Planned	TBD		
	Demonstrate appropriate separation of wastewater from storm water and install an appropriate treatment system.	Medium	SCAP	Property Owner/Operator	Planned	TBD		
	Inspect condition and operational records of the groundwater well used for cooling water to ensure that it cannot release contaminants into the aquifer.	Medium	SCAP	Ecology	Planned	TBD		
	Conduct additional source control inspections to ensure compliance and implementation of BMPs.	High	SCAP	Ecology, SPU	Planned	TBD		
<b>RM 0.9-1.0 East (Slip 1)</b>								
Federal Center South	Review historical property files for information regarding the status and contents of three 30,000-gallon USTs; determine if sediment COCs may be present in soil and groundwater in this area.	Medium	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	If file review indicates that sediment COCs may be present in soil and/or groundwater, require the property owner/operator to perform an environmental assessment of soil and groundwater around the 30,000-gallon UST area.	Medium	SCAP	EPA	Planned	TBD		
	Conduct a visual bank survey; collect and analyze bank soil samples for sediment COCs to evaluate the potential for sediment recontamination from bank erosion.	Medium	SCAP	Ecology, Property owner/operator	Planned	TBD		
	Perform Site Hazard Assessment	High	SCAP	Ecology	Planned	TBD		
	Conduct a follow-up stormwater inspection at the facility to verify completion of corrective actions requested in June 2004, and to collect information on current site operations/conditions.	High	SCAP	Ecology, EPA, SPU	Complete	--	Aug-10	EPA and Ecology inspection identified potential compliance issues. Follow-up needed.
	Determine if Federal Center South must apply for coverage under the Industrial Stormwater General Permit.	Medium	SCAP	EPA, Ecology	Planned	TBD		
Former Snopac Products Property	Review responses to EPA's Request for Information 104(e) Letter sent to Unimar in July 2008; assess potential for historical release(s) of arsenic or other sediment COCs to soil and groundwater beneath this property.	Medium	SCAP	Ecology	Planned	TBD		
	If there is potential for historical releases, require the property owner/operator to collect soil and groundwater samples and analyze them for sediment COCs. Prepare and implement a plan to remediate soil and/or groundwater, as needed.	Medium	SCAP	Ecology	Planned	TBD		
	If EPA sends a 104(e) Request for Information Letter to Snopac Products, review responses for relevant information on potential sources of contaminants to Slip 1.	Medium	SCAP	Ecology	Planned	TBD		
	Collect additional samples from Seep 76 to determine if the arsenic concentration reported in 2004 was an anomaly. Analyze sample for all sediment COCs.	High	SCAP	Ecology	Planned	TBD		
	Conduct a visual bank survey during low tide conditions; collect and analyze bank soil samples for sediment COCs to evaluate the potential for sediment recontamination from bank erosion and leaching. Reconnaissance cores should be collected along the top and bottom of the bank to determine "as is" conditions.	Medium	SCAP	Ecology	Planned	TBD		
	Obtain information from Snopac or other historical property owners regarding the construction of the dock adjacent to the property. If no information is available, perform an evaluation of the materials used to construct the dock.	Medium	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Perform an inspection at the facility when or if a new business occupies the property to ensure compliance with applicable regulations/codes.	Medium	SCAP	Ecology, SPU, King County	Planned	TBD		
Manson Construction Company	Obtain laboratory data and site plans from historical site assessment(s) and remediation performed at the property. Confirm that satisfactory completion of soil cleanup activities was achieved. Determine if arsenic or other sediment COCs are present in soil and groundwater beneath the facility at concentrations that may recontaminate sediments.	High	SCAP	Ecology	Planned	TBD		
	If satisfactory soil cleanup was not achieved, require the property owner/operator to conduct a site assessment to determine residual concentrations of sediment COCs in soil and groundwater beneath the property.	High	SCAP	Ecology	Planned	TBD		
	Collect additional samples from Seep 76 to determine if the arsenic concentration reported in 2004 was an anomaly. Analyze sample for all sediment COCs.	High	SCAP	Ecology	Planned	TBD		
	Conduct a visual bank survey during low tide conditions; collect and analyze bank soil samples for COCs. Reconnaissance cores should be collected along the top and bottom of the bank to determine "as is" conditions.	Medium	SCAP	Ecology	Planned	TBD		
	Review responses to EPA's Request for Information 104(e) letter sent to Manson Construction in July 2008.	Medium	SCAP	Ecology	Planned	TBD		
	Inspect the facility to verify that stormwater is discharged to the sanitary sewer and to ensure that operations at the facility are in compliance with applicable regulations/codes.	Medium	SCAP	SPU, Ecology, King County	Complete	--	2008	A January 2008 investigation by King County indicated that some stormwater from the property occupied by Manson Construction is conveyed to the Cadman stormwater system. Follow-up action items were included in the RM 1.0-1.2 East (King County Lease Parcels) SCAP.
<b>RM 1.0-1.2 East (KC Lease Parcels)</b>								
Public Outfall Nos. 2007 and 2244	Conduct business inspections at facilities with stormwater drainage to Outfall Nos. 2007 and 2244 including Cadman, Lehigh Northwest, and J.A. Jack.	Medium	SCAP	King County, Ecology	Planned	TBD		
S Brandon Street Combined Sewer Overflow	Provide data to Ecology from solids samples collected in June 2010 in the S Brandon Street CSO basin.	Medium	SCAP	King County	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Evaluate the 2009 effluent discharge and 2010 solids sample data to assess whether the effluent concentrations and/or solids sample concentrations represent a potential source of contaminants to sediments associated with the KC Lease Parcels source control area, and develop source control actions if necessary.	Medium	SCAP	Ecology	Planned	TBD		
	Use source tracing data to identify and evaluate possible point source contributions of LDW COCs to CSO discharges. Determine if contaminant loading analyses are necessary for King County Industrial Waste (KCIW) Program permit holders in this CSO basin.	Medium	SCAP	King County	Planned	TBD		
Manson Construction Company	Conduct a follow-up inspection at the Manson Construction facility to determine if corrective measures have been implemented and to ensure that operations at Manson Construction are in compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW. Assess whether the facility should apply for coverage under the Industrial Stormwater General Permit.	High	SCAP	Ecology	Planned	TBD		
	Determine if the catch basin on the Manson Construction facility that was identified by the City of Seattle and field-verified by King County is connected to the Cadman stormwater system.	High	SCAP	King County, Ecology	Planned	TBD		
	Obtain and review a copy of <i>Environmental Site Assessment, Duwamish Properties</i> prepared by Boateng for King County in January 1997, to identify additional potential sources of COCs to sediment and develop appropriate source control actions, if necessary.	Medium	SCAP	Ecology	Planned	TBD		
Cadman Seattle, Inc. and Lehigh Northwest	Conduct a follow-up business inspection of Cadman and Lehigh Northwest to verify compliance with Ecology's 2007 and 2009 recommendations, applicable regulations, and BMPs to prevent the release of contaminants to the LDW.	High	SCAP	Ecology	Planned	TBD		
	Require Cadman and Lehigh Northwest to report when discharges to Outfall No. 2244 occur to allow Ecology to track overflow events and evaluate potential impacts to the LDW.	High	SCAP	Ecology	Planned	TBD		
	Review the updated Stormwater Pollution Prevention Plan (SWPPP), when completed, to ensure compliance with Ecology's requirements.	High	SCAP	Ecology	Planned	Feb-13		NPDES Sand and Gravel Permit compliance inspection scheduled for early 2013. Revised SWPPP dated June 2012 was submitted to Ecology in September 2012.

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Obtain and review a copy of <i>Environmental Site Assessment, Duwamish Properties</i> , prepared by Boateng for King County in January 1997, to identify additional potential sources of COCs to sediment and develop appropriate source control actions, if necessary.	Medium	SCAP	Ecology	Planned	TBD		
United Western Supply	Perform a source control inspection of United Western Supply and the buildings on the southern portion of the property to verify compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW.	Medium	SCAP	King County, Ecology	Planned	TBD		
	Review responses from Western Utilities and United Western Supply to EPA's CERCLA Section 104(e) Request for Information letters, when available.	Medium	SCAP	Ecology	Planned	TBD		
	Obtain and review the March 1997 environmental assessment report, prepared by Boateng, in order to identify potential sources of COCs to sediment and develop appropriate source control actions.	Medium	SCAP	Ecology	Planned	TBD		
J.A. Jack & Sons	Conduct a follow-up inspection of J.A. Jack to verify compliance with corrective actions identified by Ecology in 2007 and SPU in 2009, applicable regulations, and BMPs to prevent the release of contaminants to the LDW.	High	SCAP	Ecology	Planned	1/15/2013		Inspection scheduled for January 2013.
	Evaluate the onsite stormwater collection system to determine its efficiency since Ecology inspectors observed stormwater flowing to the catch basins on the St. Gobain facility.	High	SCAP	Ecology	Planned	TBD		
	Determine if the infiltration gallery is in compliance with Underground Injection Control regulations.	Medium	SCAP	Ecology	Planned	TBD		
	Obtain additional information, through facility inspections/ observations or environmental sampling, to determine if discharges from the Pinch Point area are permissible and if these discharges are a potential source of sediment recontamination.	High	SCAP	Ecology	Planned	TBD		
	Require J.A. Jack to obtain environmental data to assess the groundwater quality in the infiltration gallery in order to determine if sediment COCs are present in groundwater and if these COCs may be transported to the LDW.	Medium	SCAP	Ecology	Planned	TBD		
	Conduct a visual bank survey. If bank erosion is likely, collect bank soil samples and analyze them for sediment COCs to evaluate the potential for contaminants to enter the LDW via bank erosion.	Medium	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Facilities Within the S Brandon Street CSO Basin	Conduct business inspections within the S Brandon Street CSO basin to verify compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW.	Low	SCAP	King County, Ecology, SPU	Planned	TBD		
	Review information regarding two Leaking Underground Storage Tank facilities, Bob's Texaco Service and Chevron 9-0636, to evaluate the potential for sediment recontamination, if any, that may be associated with these facilities.	Low	SCAP	Ecology	Planned	TBD		
	Perform an inspection at Union Pacific Motor (a LUST facility) to verify compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW.	Low	SCAP	Ecology	Planned	TBD		
	Perform inspections at two facilities holding KCIW discharge authorizations, City of Seattle--SPU Materials Storage Yard and Kamco Seafood, Inc., that have not been assigned Facility/Site ID numbers by Ecology.	Low	SCAP	Ecology	Planned	TBD		
<b>RM 1.2-1.7 East (Saint Gobain to Glacier Northwest)</b>								
Saint Gobain Containers Inc.	Review response to EPA 104(e) Request for Information letter sent to Saint Gobain Containers Inc. in July 2008.	High	SCAP	Ecology	Planned	TBD		Evaluate need for further investigations.
	Determine appropriate engineering controls for the inaccessible contamination located beneath the soil/water separator described in the 1991 Limited UST Assessment.	High	SCAP	Property Owner/Operator	Planned	TBD		
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	EPA, SPU	Complete	--	Aug-10	SPU conducted initial inspection July 2009, follow-up inspection August 2010. Corrective actions required. EPA is NPDES lead for Saint Gobain.
	Conduct follow-up source control inspections as needed until compliance is achieved.	Low	Follow-on	SPU	Complete	--	Apr-12	Follow-up NPDES ISGP compliance inspection scheduled for April 2012.
	Sample catch basins as needed.	Medium	SCAP	Ecology, SPU	Planned	TBD		If needed, conduct source tracing.
Longview Fibre Paper and Packaging	Review response to EPA 104(e) Request for Information letter sent to Longview Fibre Paper and Packaging in March 2008.	High	SCAP	Ecology	Planned	TBD		Evaluate need for further investigations.
	Review the latest groundwater monitoring report regarding exceedances of diesel-range hydrocarbons.	High	SCAP	Ecology	Planned	TBD		If needed, require the property owner/operator to prepare a remedial action plan.
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	Ecology, SPU	Planned	TBD		
	Sample catch basins as needed.	Medium	SCAP	Ecology, SPU	Planned	TBD		If needed, conduct source tracing.
Certainteed Gypsum	Review response to EPA 104(e) Request for Information letter sent to Certainteed Gypsum in July 2008.	High	SCAP	Ecology	Planned	TBD		Evaluate need for further investigations.

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	Ecology, SPU	Complete	--	Sep-09	SPU conducted initial inspection July 2009, follow-up inspection July 2009. Compliance achieved.
	Sample catch basins as needed.	Medium	SCAP	Ecology, SPU	Planned	TBD		If needed, conduct source tracing.
	Locate and review the 500-gallon UST closure report documented in Ecology's UST database. Evaluate the potential for groundwater contamination.	Low	SCAP	Ecology	Planned	TBD		
Burlington Environmental/PSC Environmental Services	Negotiate Agreed Orders and issue new permit. One order will include implementation of the Cleanup Action Plan for the eastern portion of the site.	Medium	SCAP	Ecology, PSC	Complete	--	May-10	Draft Agreed Order DE-7347 for eastern portion of site issued by Ecology in February 2010. Agreed Order and CAP finalized in May 2010.
	Implement Cleanup Action Plan as specified in Agreed Order and Dangerous Waste Permit.	Medium	Follow-on	Property Owner/Operator	Planned	Dec-16		EDR approved in the summer of 2011. Early elements of the cleanup action were initiated in late 2011 and early 2012.
Art Brass Plating	Complete interim action and RI in accordance with Agreed Order.	Medium	SCAP	Property Owner/Operator	Complete	--	Dec-12	Agreed Order DE-5296. Air sparging and SVE interim action initiated in 2008. Still operating. Revised RI Report conditionally approved in December 2012.
	Negotiate Agreed Order to include an FS and draft Cleanup Action Plan for the area west of 4th Avenue S.	Medium	Follow-on	Property Owner/Operator	Planned	Dec-13		An Agreed Order for a joint (4-PLP) FS and draft Cleanup Action Plan is planned for 2013.
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	Ecology, King County	Planned	TBD		
Blaser Die Casting	Complete RI in accordance with MTCA Enforcement Order.	Medium	SCAP	Property Owner/Operator	Complete	--	Dec-12	Enforcement Order DE-5479. Revised RI Report conditionally approved in October 2012.
	Negotiate Agreed Order to include an FS and draft Cleanup Action Plan for the area west of 4th Avenue S.	Medium	Follow-on	Property Owner/Operator	Planned	Dec-13		An Agreed Order for a joint (4-PLP) FS and draft Cleanup Action Plan is planned for 2013.
Capital Industries Inc.	Complete RI report in accordance with Agreed Order.	Medium	SCAP	Property Owner/Operator	Complete	--	Dec-12	Enforcement Order DE-5479. Revised RI Report conditionally approved in October 2012.
	Negotiate Agreed Order to include an FS and draft Cleanup Action Plan for the area west of 4th Avenue S.	Medium	Follow-on	Property Owner/Operator	Planned	Dec-13		An Agreed Order for a joint (4-PLP) FS and draft Cleanup Action Plan is planned for 2013.
<b>RM 1.7-2.0 East (Slip 2 to Slip 3)</b>								
1st Avenue S Bridge Storm Drain (Outfall 2503)	Assess the effectiveness of the vegetated swale in treating stormwater discharged via Outfall 2503.	Medium	SCAP	Ecology	Planned	TBD		
	Conduct business inspections at properties with stormwater drainage to the 1st Avenue S Bridge (East) outfall, including Seattle Truck Repair, Evergreen Tractor, and the former Taco Time parcel.	Medium	SCAP	SPU, Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Michigan Street CSO	Provide data regarding contaminant concentrations in Michigan Street CSO discharges.	Medium	SCAP	King County	In Progress	TBD		King County conducted in-line solids sampling in the Michigan CSO basin. Validated data were not available as of the end of the current reporting period (September 2010).
	Conduct business inspections within the Michigan Street CSO basin to identify undocumented industrial operations, if any, that may represent sediment recontamination sources.	Low	SCAP	SPU	Planned	TBD		
	Conduct a stormwater compliance inspection at the King County Airport Staging Yard/Georgetown Yard; this facility is covered under the Industrial Stormwater General Permit but no information on inspections was identified.	Low	SCAP	Ecology	Planned	TBD		
Slip 2 Outfall (Glacier Northwest; Outfall 2019)	Conduct business inspections at properties with stormwater drainage to Outfall 2019, including Bank and Office Interiors, Ener-G Foods, and Shippers Transport Express (formerly Consolidated Freightways).	Medium	SCAP	SPU, Ecology	Planned	TBD		
	Identify the owner of Outfall 2019 and evaluate the adequacy of existing NPDES permits with regard to stormwater discharges from this outfall.	Medium	SCAP	SPU, Ecology	Planned	TBD		
	Review response to EPA Section 104(e) Request for Information submitted by Ener-G Foods to determine whether this facility is a potential source of LDW sediment recontamination.	Medium	SCAP	Ecology	Planned	TBD		
Glacier Northwest, Inc.	Conduct a follow-up source control inspection to verify compliance with previous recommendations.	Medium	SCAP	Ecology	Complete	--	May-10	Ecology inspection conducted on May 25, 2010. Warning letter issued. Corrections subsequently made.
	Request additional information from Glacier Northwest regarding the process water treatment and recycling system at the facility, including the capacity of the system and the frequency and volume of discharges to the LDW.	Medium	SCAP	Ecology	Planned	TBD		If discharges are frequent, collect catch basin solids samples and/or effluent discharge samples as needed.
	Request additional information from Glacier Northwest regarding (a) the trench drain installed in 1985; (b) the storm drain line shown on SPU maps that appears to discharge to Slip 2 approximately half-way between the head and mouth of the slip; (c) connections to Outfall 2018, if any; and (d) ownership of Outfall 2019.	Medium	SCAP	Ecology	Planned	TBD		
	Review information submitted by Glacier Northwest in response to EPA Section 104(e) Request for Information.	Medium	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Seattle Biodiesel	Conduct a follow-up source control inspection to verify compliance with Ecology recommendations and applicable regulations/codes.	Medium	SCAP	Ecology	Planned	TBD		Seattle Biodiesel is no longer in business; General Biodiesel now operates at this location under a new NPDES permit number. Permit compliance issues have been noted over the last year.
	Collect information regarding chemical concentrations in bank soils.	Medium	SCAP	Ecology	Planned	TBD		
	Review information submitted by Lonestar Investors LP (the property owner) in response to EPA Section 104(e) Request for Information.	Medium	SCAP	Ecology	Planned	TBD		
Duwamish Marine Center	Conduct a follow-up source control inspection at Duwamish Marine Center to verify compliance with applicable regulations/code and implementation of appropriate stormwater BMPs.	Medium	SCAP	Ecology, SPU	Planned	TBD		
	Conduct a follow-up business inspection at Samson Tug and Barge to verify compliance with corrective actions requested by SPU in July and October 2008. Also verify that the cleaning solution tank belonging to Burgess Enterprises has been removed.	Medium	SCAP	SPU	In Progress	May-13		Samson Tug & Barge triggered a requirement to install stormwater treatment. Work started on treatment system in 2012.
	Determine the status of Outfalls 2021 and 2022; if they are currently in use, determine the area drained by these outfalls and assess the potential for COCs to reach the LDW via this pathway.	High	SCAP	SPU, Ecology	Planned	Jan-14		
	Verify the status of NPDES permits for Samson Tug and Barge and Duwamish Metal Fabricators.	Medium	SCAP	Ecology	Planned	TBD		
	Require the property owner/operator to collect additional soil/groundwater data.	High	SCAP	Ecology	Complete	--	May-09	An RI Report was submitted to Ecology on May 11, 2009, which presents results of subsurface investigation activities.
	Assess the need for additional investigation/cleanup activities to be conducted under an Agreed Order.	High	Follow-On	Ecology	Complete	--	Nov-09	Additional investigation/cleanup activities needed; Ecology will negotiate an Agreed Order.
	Negotiate an Agreed Order to conduct additional investigation/cleanup activities	High	Follow-On	Ecology	Complete	--	Sep-11	Entered into Agreed Order No. DE-8072 on September 2, 2011
	Require the property owner/operator to collect data on concentrations of chemical contaminants in river bank soils to assess the potential for sediment recontamination by erosion.	High	SCAP	Ecology	Planned	Jan-14		To be conducted as part of Agreed Order.
	Review information submitted by James Gilmur and Samson Tug and Barge in response to EPA Section 104(e) Requests for Information.	Medium	SCAP	Ecology	Planned	TBD		
Seattle Department of Transportation Parcel	Complete discussions with the adjacent property owner to prevent parking and vehicle maintenance on the Seattle Department of Transportation property.	Low	SCAP	SPU	In Progress	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Former Frank's Used Cars	Conduct a brief site visit to assess current site conditions and determine whether stormwater from this property is a potential source of sediment recontamination.	Low	SCAP	Ecology, SPU	Planned	TBD		
	Review the current status of cleanup activities at this site to determine whether residual soil contamination poses a risk of sediment recontamination.	Medium	SCAP	Ecology	Planned	TBD		
Bank and Office Interiors/Other Tenants	Conduct source control inspections at Bank and Office Interiors and other businesses located on this property.	Medium	SCAP	SPU, Ecology	Planned	TBD		
	Review information submitted by Ener-G Foods in response to EPA 104(e) Request for Information.	Low	SCAP	Ecology	Planned	TBD		
Fittings, Inc.	Determine whether this facility should apply for coverage under the Industrial Stormwater General Permit	Medium	SCAP	Ecology	Planned	TBD		
Former Consolidated Freightways	Conduct a site inspection to identify whether activities along the western edge of the property (in the area that drains to Slip 2) could be a source of sediment recontamination via stormwater discharge.	Low	SCAP	Ecology, SPU	Planned	TBD		
	Locate and review the results of soil and groundwater sampling proposed in 2000 (if the sampling plans were implemented), and assess the potential for sediment recontamination via groundwater transport.	Medium	SCAP	Ecology	Planned	TBD		
	Search for additional information regarding the two dump areas located at this property in 1940, as identified in historical aerial photographs, and evaluate the potential for sediment recontamination associated with these areas.	Medium	SCAP	Ecology	Planned	TBD		
Facilities Within the Michigan Street CSO Basin	Emerald Tool, Inc.: Conduct a business inspection at this facility; request information regarding concentrations of sediment COCs in soil and catch basins at this property.	Low	SCAP	SPU, Ecology	Planned	TBD		
	Kelly Moore Paint Company: Assess the current nature and extent of soil and groundwater contamination associated with this facility to determine the potential for contaminated groundwater to infiltrate the combined sewer system.	Low	SCAP	Ecology	Planned	TBD		
	Kelly Moore Paint Company: Determine the current status of cleanup efforts to evaluate whether additional remedial activities are required.	Low	SCAP	Ecology	In Progress	TBD		Sampling and cleanup activities are underway. Ecology continues to track progress.

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Pioneer Porcelain Enamel Company: Conduct a business inspection to assess current activities at the site and verify that they are in compliance with applicable regulations/code and have implemented appropriate stormwater BMPs.	Low	SCAP	SPU, Ecology	Planned	TBD		
	Former Unocal Service Station 0907: Conduct a site inspection to verify current activities at the site and that activities are in compliance with applicable regulations/code and that appropriate stormwater BMPs have been implemented.	Low	SCAP	Ecology	Planned	TBD		
	Pioneer Porcelain Enamel Company, Scougal Rubber Corporation, former Sonn Property, former Unocal Service Station 0907, Winters Investment LP/Riveretz's Auto Care/Former Georgetown Gasco/Tesoro: Request the property owner to provide information regarding the nature and extent of soil contamination at the site to determine if contaminants in soil may be leaching to groundwater, and if contaminated groundwater may then be infiltrating into the combined sewer system.	Low	SCAP	Ecology	Planned	TBD		Interim Action Work Plan and Final Cleanup Report for Scougal Rubber was submitted to Ecology on June 30, 2010. Scougal Rubber Corp. submitted a technical memorandum in December 2012 summarizing remedial actions conducted September 2011-September 2012.
<b>RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)</b>								
S Brighton Street CSO/SD	Conduct in-line storm drain sampling to evaluate whether COCs may be transported to the LDW via the S Brighton Street CSO/SD.	High	SCAP	SPU	Complete	--	Jun-09	Metals (arsenic, copper, lead, mercury, zinc), phthalates (BEHP, BBP, dimethylphthalate), PCBs, and other chemicals detected at levels of potential concern in catch basin and inline storm drain solids samples.
	Conduct source tracing in the S Brighton Street CSO/SD basin.	High	Follow-On	SPU, Ecology	In Progress	TBD		SPU collected one source tracing samples in this basin during the current reporting period.
	Review VCP files pertaining to four former facilities at South Seattle Community College (Arrow Transportation, Inland Transportation Company, Ben's Truck Repair, and Hat n' Boots Gas Station). Investigate the South Seattle Community College property to determine what cleanup actions may have been conducted during development, and whether potential sources of sediment recontamination may remain onsite from the four former facilities.	Medium	SCAP	Ecology	Planned	TBD		
S River Street SD	Conduct in-line storm drain sampling to evaluate whether COCs are migrating to the LDW via the S River Street SD.	High	SCAP	SPU	Complete	--	Jun-09	Metals (arsenic, copper, zinc), phthalates (BEHP, BBP, diethylphthalate, dimethylphthalate), PCBs, and other chemicals detected at levels of concern in catch basin and inline storm drain sediment samples
	Conduct source tracing in the S River Street SD basin.	High	Follow-On	SPU, Ecology	In Progress	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
SCS Refrigerated Services	Review the PRP response to EPA's CERCLA 104(e) letters sent to SCS Holding LLC and SCS Refrigerated Services LLC in March 2008.	Low	SCAP	Ecology	Planned	TBD		Identify additional source control actions as needed.
	Conduct a source control inspection to assess whether recommendations from the May 2007 inspection have been addressed, confirm whether the facility discharges to the LDW through Outfall 2024, and determine the discharge point of storm drain lines along the northern and western edges of the facility.	High	SCAP	SPU, Ecology	Complete	--	May-09	Initial inspection on 3/6/09; follow-up inspection on 5/22/09 found facility in compliance with stormwater regulations/code.
Seattle Distribution Center	Review the response to EPA's CERCLA 104(e) letter sent to CLPF Seattle Distribution in March 2008.	Low	SCAP	Ecology	Planned	TBD		Identify additional source control actions as needed.
	Conduct a source control inspection to determine whether the facility needs a NPDES permit, and confirm the presence of discharge points to the LDW including Outfall 2025 and an additional private storm drain line.	High	SCAP	SPU, Ecology	In Progress	TBD		Inspections conducted 3/18/09, 5/22/09, and 6/4/09; corrective actions in progress. Continue inspections until compliance is achieved.
Glacier Marine Services	Review responses to EPA's CERCLA 104(e) Request for Information letters sent to Northland Services, Inc., Fox Avenue LLC, Seatac Marine Properties, Evergreen Marine Leasing, and Fox Avenue Warehouse in 2008.	Low	SCAP	Ecology	Planned	TBD		
	Conduct a source control inspection to clarify issues related to storm drain system configuration and location of outfalls, sanitary sewer connections, and current activities at the facility as identified in the SCAP; conduct storm drain sampling as needed.	High	SCAP	SPU, Ecology	Planned	TBD		
	Conduct in-line storm drain sampling to evaluate whether COCs are migrating to LDW sediments via the Glacier Marine Services storm drain system.	High	SCAP	SPU, Ecology	Planned	TBD		
V. Van Dyke	Review responses to EPA's Request for Information 104(e) Letter sent to V. Van Dyke, Inc. in March 2008	Low	SCAP	Ecology	Planned	TBD		
	Determine whether a UST may have been removed from the property without a proper closure.	Medium	SCAP	Ecology	Planned	TBD		
	Conduct a source control inspection to verify compliance with applicable regulations/codes.	High	SCAP	SPU, Ecology	Complete	--	May-09	SPU inspections conducted on March 19 and May 5, 2009. Facility in compliance with applicable codes and regulations. NPDES ISGP compliance inspection scheduled for January 2013.
	Locate and review additional reports related to V. Van Dyke property that are missing from Ecology's files.	Medium	SCAP	Ecology	Planned	TBD		
	Work with V. Van Dyke to complete quarterly groundwater or other monitoring suggested by Adapt, if needed.	Medium	SCAP	Ecology	Planned	Oct-13		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Riverside Industrial Park	Review responses to EPA's Request for Information 104(e) Letter sent to Riverside Industrial Park and Big John's Truck Repair in 2008.	Low	SCAP	Ecology	Planned	TBD		
	Conduct a source control inspection to address the two former shop building floor drains, determine if storm drain lines between the shop building and office building pass through areas where contaminated soil has been excavated, and conduct in-line storm drain sampling as needed.	High	SCAP	Ecology, SPU	Planned	TBD		
	Determine the status of cleanup at the facility and whether to pursue additional investigation and cleanup under an administrative order.	Medium	SCAP	Ecology	Planned	TBD		
Shultz Distributing	Conduct a source control inspection to verify compliance with applicable regulations/codes, determine whether storm drain lines pass through the area of chlorinated solvent groundwater contamination near the tank farm, determine whether the storm drains discharge to the S Brighton Street CSO/SD, confirm that the pump was removed from the oil/water separator, and that stormwater now discharges to the municipal storm drain system.	High	SCAP	SPU, Ecology	Complete	--	Aug-10	SPU inspection conducted on August 18, 2010; facility in compliance.
	Conduct in-line storm drain sampling to evaluate whether COCs are migrating to LDW sediments via the Shultz Distributing storm drain system.	High	SCAP	SPU, Ecology	Complete	--	Aug-10	One on-site CB sample, three right-of-way CB samples, and two in-line samples conducted in this area; metals, PCBs, PAHs, phthalates, and other SVOCs above screening levels.
	Review AGI's results and conclusions and determine whether additional investigations should be conducted.	Medium	SCAP	Ecology	Planned	TBD		
Cascade Columbia Distribution/Fox Avenue Building	Review responses to EPA's CERCLA 104(e) letter sent to Great Western Chemical Company in July 2008.	Low	SCAP	Ecology	Planned	TBD		Action item also included in RM 2.3-2.8 East SCAP for Fox Avenue Building.
	Coordinate any source control to be implemented at Cascade Columbia Distribution with the work that is to be conducted under the new 2009 Agreed Order.	Medium	SCAP	Ecology	Planned	TBD		Ecology and Fox negotiated a second Agreed Order in 2012, signed in June 2012.
	Verify that the source of the "NW Corner Plume" will be investigated under the new Agreed Order.	Medium	SCAP	Ecology	Planned	TBD		
Bunge Foods/Dawn Food Products/Guimont Parcel	Review responses to EPA's CERCLA 104(e) letter sent to Bunge Foods Processing LLC in July 2008.	Medium	SCAP	Ecology	Planned	TBD		Action item also included in RM 2.3-2.8 East SCAP for Guimont Parcel/Dawn Food Products/Former Bunge Foods.
Muckleshoot Seafood Products	Review responses to EPA's CERCLA 104(e) letter sent to Silver Bay Logging in March 2008.	Medium	SCAP	Ecology	Planned	TBD		Identify additional source control actions as needed.
Rainier Petroleum	Review responses to EPA's CERCLA 104(e) letter sent to Rainier Petroleum Corporation in July 2008.	Medium	SCAP	Ecology	Planned	TBD		Identify additional source control actions as needed.

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Morton Marine Equipment	Review responses to EPA's CERCLA 104(e) letter sent to Morton Marine Equipment in March 2008.	Medium	SCAP	Ecology	Planned	TBD		
R.A. Barnes	Conduct additional investigations as needed to determine facility location and potential for sediment recontamination.	Medium	SCAP	Ecology	Planned	TBD		
<b>RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)</b>								
SPU Storm Drains and Outfalls	Collect additional solids samples from catch basins and maintenance holes in city-owned storm drains as needed to evaluate concentrations of COCs in the drainage basin.	High	SCAP	SPU	Complete	--	Jun-09	Two samples collected from S Garden Street SD in June 2009 contained metals, PCBs, phthalates, PAHs, and TPH present at levels of concern. Samples collected in September 2008 in S Myrtle Street SD also contained elevated concentrations of metals, PAHs, phthalates, phenols, and PCBs.
	Conduct source tracing to identify potential contaminant sources to stormwater discharging to the LDW through the S Myrtle Street and S Garden Street outfalls.	High	SCAP	SPU	In Progress	TBD		No samples collected from S Myrtle Street SD or S Garden Street SD during the current reporting period.
Guimont Parcel (Dawn Foods/former Bunge Foods)	Review responses to EPA's Request for Information 104(e) letters sent to William P. Guimont, Fox Avenue Warehouse Corporation, Bunge Foods Processing LLC, and Dawn Food Products, Inc.	High	SCAP	Ecology	Planned	TBD		
Seattle Boiler Works, Inc.	Review responses to EPA's Request for Information 104(e) letters sent to Fred Hopkins/Seattle Boiler Works, Inc., Frank H. Hopkins Family LLC, and National Steel Construction Company, and identify additional data gaps/source control action items as needed.	High	SCAP	Ecology	Planned	TBD		
	Conduct follow-up inspections to the June 2007 stormwater compliance inspection as needed to verify that deficiencies noted during the inspection have been corrected. Obtain an updated facility plan showing the locations of all catch basins, maintenance holes, storm drain lines, stormwater conveyance lines, and outfalls and field verify the locations of these drainage system features.	High	SCAP	Ecology	In Progress	TBD		Ecology WQ permit compliance inspection conducted on June 22, 2010. No inspection report available as of the end of the current reporting period.
	Determine if the five outfalls that are not included in Seattle Boiler Work's NPDES permit are in use. If in use and Seattle Boiler Works is the source of discharge, modify the facility's stormwater permit to include these outfalls.	High	SCAP	Ecology	Planned	TBD		
	If Seattle Boiler Works is not the source of discharges to these five outfalls, perform source tracing to identify potential sources discharging to the outfalls.	High	SCAP	Ecology/SPU	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Seattle Iron & Metals Corporation	Review responses to EPA's Request for Information 104(e) Letter sent to Seattle Iron & Metals, Manson Construction Company, Othello Street Warehouse Corporation, and The Maust Corporation in July 2008.	High	SCAP	Ecology	Planned	TBD		
	Locate and review Hart Crowser's 1998 Voluntary Cleanup Action Report, 606 South Myrtle Street, to evaluate the extent of soil and groundwater sampling that has been conducted at this property, identify any sediment COCs and evaluate the potential pathways for sediment recontamination.	Medium	SCAP	Ecology	Planned	TBD		
	Obtain records from the soil removal and remediation performed by U.S. SeaCon and determine if the action was the Independent Remedial Action that was performed prior to 1998 or an additional remedial action performed at the property. Determine if additional sampling is needed to characterize site for sediment COCs.	Medium	SCAP	Ecology	Planned	TBD		
	Monitor compliance with Ecology Follow-Up Order No. 6185.	High	SCAP	Ecology	Complete	--	2011	Seattle Iron & Metals has complied with this order. Ecology is currently renewing the stormwater permit for this facility.
	Investigate means to determine if ASR is reaching the LDW directly or via the Seattle Iron & Metals or Seattle Boiler Works storm drain systems.	Medium	SCAP	Ecology	Planned	TBD		
	Obtain information documenting the status of the furnace to determine if it was relocated from the Harbor Island facility to Seattle Iron & Metals' current facility. Current furnace operations, if any, will be identified.	Medium	SCAP	Ecology/PSCAA	Planned	TBD		
	Request information from the facility operator regarding the source of discharge, if any, to Outfall 2034, observed along the Seattle Iron & Metals shoreline during SPU's outfall survey.	High	SCAP	Ecology	Planned	TBD		
Puget Sound Truck Lines	Review responses to EPA's Request for Information 104(e) letters sent to Puget Sound Truck Lines and R&A Properties LLC.	High	SCAP	Ecology	Planned	TBD		
	Review records of soil cleanup activities completed in 1995 to verify that groundwater discharge from this property is not a potential sediment recontamination source.	Medium	SCAP	Ecology	Complete	--	2011	Petroleum hydrocarbon contamination in soil associated with four USTs removed in 1990 is not likely to pose a risk of LDW sediment recontamination.
	Perform a follow-up stormwater compliance inspection to determine whether catch basins are cleaned regularly and if housekeeping has improved. Obtain a facility plan that shows the locations of all catch basins and storm drain lines at the facility.	Medium	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Determine whether the five outfalls identified at the property are active, and identify the source of discharge from these outfalls, if any.	High	SCAP	Ecology, Property owner/operator	Planned	TBD		
Seattle City Light Georgetown Pump Station	Determine if the drainage ditch/pipe is active and if it discharges to the LDW. If active, determine the area drained by the drainage ditch/pipe and determine the potential for sediment COCs to reach the LDW.	High	SCAP	Ecology, SPU	Planned	TBD		
	Obtain and review information about any groundwater sampling that has been conducted at this property. Based on this review, evaluate the need for further source control actions.	Medium	SCAP	Ecology	Planned	TBD		
Crowley Marine Services	In conjunction with an Agreed Order for the Crowley Marine Services site, perform additional investigations that include collection of data on chemical concentrations in soil and groundwater at the western and southern portions of the property.	High	SCAP	Property owner/operator	Planned	2014		
	Review information submitted to EPA in response to the Request for Information 104(e) letters sent to Crowley Marine Services, Samson Tug and Barge Company, Northland Services, and Evergreen Marine Leasing.	High	SCAP	Ecology	Planned	TBD		
	Conduct facility inspections for current tenants at the Crowley Marine Services property to determine if operations could be a source of LDW sediment recontamination.	Medium	SCAP	Ecology, SPU	Complete	--	Jun-10	SPU conducted inspections at Boom Boys Cranes LLC; Heko Services Inc.; and Organic Fuel Processors; all in compliance. Ecology inspected First Student - 8th Ave S facility and Organic Fuel Processors. Organic Fuel Processors and subtenants are not in compliance with NPDES requirements.
	Require the owner and/or tenants to obtain an NPDES permit if facility inspections conclude that business operations require a stormwater discharge permit.	Medium	SCAP	Ecology	Complete	--	2011	Organic Fuel Processors obtained ISGP coverage in 2010. First Student - 8th Avenue obtained ISGP coverage in 2011.
	Collect stormwater and/or solids samples from storm drain system to determine if onsite system is source of COCs found in waterway sediment.	High	SCAP	Ecology	Planned	2014		To be conducted in accordance with Agreed Order No. DE-6721. See also Table 3-2, Early Action Area 3.
	Review the Environmental Investigation Report, Crowley Marine Services Site, dated August 1, 2008 (prepared by SLR International Corp) and identify remaining data gaps and source control actions for the property.	High	SCAP	Ecology	Complete	--	2012	
Fox Avenue Building and Fox Avenue Building #2/Former	Monitor the progress of the RI/FS to investigate and remediate soil and groundwater contamination beneath the property.	Medium	SCAP	Ecology	In Progress	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Great Western Chemical Company	Review responses to EPA's July 2008 Request for Information 104(e) letter sent to Great Western Chemical Company, including evaluation of the presence and/or potential for generation of dioxin associated with former activities at the property.	Low	SCAP	Ecology	Planned	TBD		
Whitehead Company, Inc./Former Tyee Industries	Require the property owner/operator to address the pentachlorophenol contamination in groundwater discovered by Cascade Columbia Distributions' consultant.	Medium	SCAP	Ecology	Planned	TBD		
	Perform a business inspection to identify current operations at this property, and to evaluate whether operations could be an ongoing source of contaminants to LDW sediments.	Medium	SCAP	Ecology, SPU	Planned	TBD		
Whitehead Company, Inc./Former Perkins Lot	Conduct facility inspection to determine if activities conducted by businesses at this location require an NPDES permit, and to ensure compliance with applicable codes and regulations.	Medium	SCAP	Ecology, KCIW	Complete		2011	Taxi King has applied for coverage under the ISGP. Bud's Auto Wrecking was notified of the requirement to apply for ISGP coverage, and is in process.
	Assist Svendsen Brothers with obtaining coverage under the Industrial Stormwater General Permit and KCIW discharge authorization or permit.	Medium	SCAP	Ecology, KCIW	In Progress	TBD		
	Perform a follow-up inspection at Taxi King to ensure that corrective actions identified in July 2008 have been implemented.	Medium	SCAP	Ecology, SPU	Complete	--	Sep-08	Follow-up inspection conducted 9/19/08; facility in compliance with applicable codes and regulations at that time.
	Obtain a list of previous tenants from the property owner to evaluate historical operations and to determine if these operations could have resulted in soil or groundwater contamination.	Medium	SCAP	Ecology, Property owner/operator	Planned	TBD		
Former Trim Systems	Inspect site to ensure that operations at the facility are in compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW. Obtain a facility plan showing the locations of all catch basins and storm drains (if any).	Medium	SCAP	Ecology, SPU	Planned	TBD		Seattle Iron & Metals has proposed to expand its operations to this property. This parcel is included in the draft Seattle Iron & Metals individual NPDES permit renewal, and will be included in future Seattle Iron & Metals site inspections.
	Review responses to EPA's July 2008 Request for Information 104(e) letters sent to Seattle Iron & Metals, Manson Construction, and Northwest Container Services.	High	SCAP	Ecology	Canceled	--	--	EPA letters sent to Manson Construction and Northwest Container Services do not include a request for information regarding this location. Review of 104(e) response for Seattle Iron & Metals included above.
Nitze-Stagen/Frye Parcels	Inspect site to ensure that operations at Pioneer Distribution are in compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW. Obtain facility plans showing the locations of all catch basins and storm drain lines (if any). Require property owner to obtain NPDES permit, as necessary.	Medium	SCAP	Ecology, SPU	Planned	TBD		
	Review responses to EPA's Request for Information 104(e) letters sent to Nitze-Stagen and Pioneer Human Services.	High	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Former Sternoff Parcel	Evaluate the need for additional soil and groundwater samples and analyze them for sediment COCs to determine the potential for sediment recontamination via the groundwater discharge pathway.	Medium	SCAP	Ecology	Planned	TBD		
	Locate documentation verifying that a PCB-contaminated "trash pile" and approximately 52,187 pounds of contaminated soil have been removed from the property.	Medium	SCAP	Ecology	Planned	TBD		
	Determine the disposition of petroleum-contaminated soil stockpiled at the property by Remedco and provide the documentation to Ecology.	Low	SCAP	Ecology	Planned	TBD		
	Inspect facility to confirm that stormwater does not drain to the LDW and ensure that operations are in compliance with applicable codes and regulations.	Medium	SCAP	Ecology, SPU	Planned	TBD		
<b>RM 3.9-4.3 East (Slip 6)</b>								
King County Stormwater Outfall	Collect in-line water and storm drain solids samples to evaluate if COCs are migrating to Slip 6 source control area sediments via the storm drain outfall.	High	SCAP	King County	In Progress	TBD		Sediment trap installed in September 2008; first sample collected in March 2009.
	Conduct source tracing to identify sources of COCs to the storm drain line, as necessary.	High	SCAP	King County	Planned	TBD		Contaminant concentrations in March 2009 sediment trap sample were below sediment screening levels.
8801 Site (Former PACCAR Site)	Negotiate an Agreed Order to address upland cleanup and source control of soil and groundwater contamination at the site.	High	SCAP	Ecology, Property owner/operator	Complete	--	Nov-08	
	Re-evaluate existing soil and groundwater data and compare to site-specific screening levels (to be developed) for metals, PAHs, petroleum hydrocarbons, PCBs, SVOCs, and VOCs as COCs in the LDW, and test for dioxin/furans.	High	SCAP	Ecology, Property owner/operator	In Progress	TBD		Draft Remedial Investigation Report submitted to Ecology on September 30, 2010, as required by Agreed Order # 6069. Final RI Report submitted to Ecology in February 2012.
	Expand investigation of the southwest storage area and northwest corner of the site to determine the extent of soil and groundwater contamination.	High	SCAP	Ecology, Property owner/operator	In Progress	TBD		Work continuing as required by Agreed Order # 6069.
	Complete Phase 2 of the Sediment Evaluation Work, which includes sediment core sampling in selected locations in the LDW adjacent to the site.	High	SCAP	Ecology, Property owner/operator	In Progress	TBD		
	Negotiate expanding the stormwater and storm drain solids monitoring to add COCs at the site. Review future monitoring results to determine if further actions are necessary.	High	SCAP	Ecology, Property owner/operator	In Progress	TBD		
	Review the current SWPPP and Operations and Maintenance Plan. Make necessary changes and additions to prevent contaminants from potential upland sources (such as fuel leaks from damaged vehicles) from migrating to Slip 6 source control area sediments via the stormwater system.	Medium	SCAP	Ecology, Property owner/operator	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Former Rhône-Poulenc Site	Address the toluene groundwater contamination in the southwest corner of the East Parcel, in accordance with the Revised East Parcel Corrective Measures Implementation Work Plan.	High	SCAP	EPA, Property owner/operator	In Progress	TBD		
	Continue to monitor the effectiveness of the hydraulic interim control measure, and investigate the presence of elevated copper concentrations in groundwater outside the barrier wall and the potential leak in the barrier wall.	High	SCAP	EPA, Property owner/operator	Ongoing	TBD		
	Investigate and address shoreline bank contamination from historical site operations and releases (e.g. application of vanillin black liquor solids to the shoreline bank for weed control).	High	SCAP	EPA, Property owner/operator	In Progress	TBD		
	Review the current SWPPP and Operations and Maintenance Plan. Make necessary changes and additions to prevent contaminants from potential upland sources (such as fuel leaks from damaged vehicles) from migrating to Slip 6 source control area sediments via the stormwater system.	High	SCAP	Ecology, Property owner/operator	Planned	TBD		
	Oversee and inspect discharge to the King County sanitary sewer system from groundwater remediation at this site through the KCIW Program.	Low	SCAP	KCIW	Ongoing	TBD		
KCIA	Evaluate the "Drainage Area 3" portion of the KCIA stormwater system that discharges to the LDW via the King County stormwater line to determine if stormwater and/or storm drain solids monitoring is necessary.	High	SCAP	Ecology, KCIA	Complete	--	Apr-12	SPU/KCIA installed sediment traps at the discharge point east of East Marginal Way S. SPU collected samples in March 2009, December 2010 and April 2012. KCIA will take over sampling from SPU starting 2013. April 2012 data indicates PCB and metals concentrations below SQS/LAET. Phenanthrene, total HPAH, and BEHP were above SQS/LAET.
	Review and modify KCIA stormwater management activities to prevent contaminants from entering the KCIA stormwater system.	Medium	SCAP	Ecology, King County	Ongoing	TBD		KCIA is complying with NPDES permit requirements and has implemented relevant BMPs. KCIA sampled and cleaned an OWS in October 2012; phenanthrene, total HPAH, and BEHP concentrations were above the SQS/LAET. Central catch basins were cleaned in October 2012.
	Assess and modify all tenant and airport pollutant prevention measures within KCIA.	Medium	SCAP	KCIA	Ongoing	TBD		Efforts to comply with KCIA's industrial and municipal NPDES permits are ongoing and include annual tenant assessments for potential pollutant generating sources.
	Determine if PCBs are present in joint caulk material within this portion of the airport and conduct a removal, if necessary.	Medium	SCAP	KCIA	Complete	--	2012	Sediment trap and grab samples collected in March 2009, December 2010, and April 2012 showed no detection of PCBs above the SQS/LAET.

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Museum of Flight (MOF)	Monitor stormwater and/or storm drain solids at MOF and former BDC properties in the vicinity of USTs and associated groundwater contamination.	High	SCAP	Ecology, Property owner/operator	Planned	TBD		
	Develop a plan to remove USTs and associated soil and groundwater contamination on the MOF property.	Medium	SCAP	Ecology, Property owner/operator	Planned	TBD		
	Identify the source and extent of groundwater contamination on the former BDC property, and conduct remedial action, as necessary.	High	SCAP	Ecology, Property owner/operator	Planned	TBD		
Boeing Developmental Center (BDC)	Conduct stormwater and/or storm drain solids monitoring for outfalls DC14 and DC15.	High	SCAP	Ecology, Boeing	In Progress	TBD		Ecology/SAIC collected two sediment samples near DC14; the only chemical found at concentrations above the SQS was benzyl alcohol. Ecology completed sampling of storm drain solids in an adjacent drain line from the BDC (to outfall 2088).
	Investigate UST locations to determine whether any USTs are located within the Slip 6 drainage basin and whether any USTs present a source of contaminants to soil and/or groundwater.	Low	SCAP	Boeing	In Progress	TBD		The drainage basin to the two outfalls flowing into Slip 6 (DC 14 and DC 15) includes Buildings 9-05, 9-07, 9-04, 9-77, 9-08 at the BDC. The Environmental Compliance Group at the BDC was contacted and they will indicate the presence of USTs near these buildings in March 2012.
	Review the current SWPPP and make changes and additions necessary to prevent contaminants from entering the BDC stormwater system.	Medium	SCAP	Ecology, Boeing	Complete	--	Oct-11	The SWPPP for the BDC was updated in July 2010, and the SPCC in October 2011.
<b>RM 4.3-4.9 East (Boeing Developmental Center)</b>								
BDC Outfalls	Request Boeing to investigate the status of Outfall 2086, which appears to be abandoned.	Medium	SCAP	Ecology/Boeing	Planned	TBD		
	Request Boeing to prepare a work plan for collection of subsurface sediment samples in the area of the LDW adjacent to the BDC outfalls.	Medium	SCAP	Ecology/Boeing	Planned	TBD		
	Request Boeing to collect grab solids samples from the BDC SD system. Priority should be given to SD lines with medium to high flows and SD lines serving areas with significant industrial activities. Samples should be analyzed for PCBs, PAHs, and metals.	High	SCAP	Ecology/Boeing	Planned	TBD		
	If COCs are detected in the SD system at concentrations above the SQS, request Boeing to conduct source tracing and control as needed to reduce the potential for sediment recontamination.	High	SCAP	Ecology/Boeing	Planned	TBD		
Central portion of BDC	Review response to EPA's Request for Information 104(e) letters sent to Boeing.	Medium	SCAP	Ecology	Planned	TBD		
	Continue to monitor RCRA cleanup activities to ensure contaminants present in groundwater as a result of historical releases are not entering the LDW.	Low	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Conduct a stormwater compliance inspection to ensure that current and planned operations are consistent with stormwater regulations and best management practices. Review changes to industrial activities at BDC to assess potential for sediment recontamination associated with new operations.	Medium	SCAP	Ecology	Planned	TBD		
	Request additional information about the nature of BDC's emissions and air permit as they relate to deposition on impervious surfaces and the stormwater pathway to the LDW.	Low	SCAP	Ecology	Planned	TBD		
	Request Boeing to collect at least one round of seep samples from the four known seepage locations (see Figure 2) to confirm that no contaminants are being discharged to the LDW via this transport pathway.	Medium	SCAP	Ecology/Boeing	Planned	TBD		
<b>RM 1.0-1.3 West (Kellogg Island to Lafarge Cement)</b>								
Lafarge North America Inc. Seattle	Request information from Lafarge regarding the status of Outfall 001/2139 and 004.	Medium	SCAP	Ecology	Planned	TBD		
	Request information from Lafarge regarding the installation of an updated stormwater treatment system within 12 months of the NPDES permit renewal, as described in the SWPPP.	Medium	SCAP	Ecology	In Progress	Jan-13		Ecology is requiring stormwater treatment to be installed by December 31, 2012.
	Review new sediment data from the 2009 Lafarge maintenance dredging and the 2011 surface sediment sampling conducted by Ecology to determine if additional sediment sampling is needed for sediment characterization.	Medium	SCAP	Ecology	Planned	TBD		
	Conduct a follow-up business inspection to verify compliance with the corrective actions required by Ecology as a result of the June 2009 inspection, applicable regulations, and BMPs.	Low	SCAP	Ecology	Planned	TBD		
	Review the response to the CERCLA Section 104(e) Supplemental Information Request sent to Lafarge by EPA.	Medium	SCAP	Ecology	Planned	TBD		
	Request Lafarge to collect environmental data to determine if soil and groundwater are contaminated due to historical drum recycling and reclamation activities at the Lafarge property.	Medium	SCAP	Ecology	Planned	TBD		
	Request Lafarge to collect additional seep samples to better characterize groundwater being discharged into the LDW. Seep samples will be analyzed for sediment COCs, including PCBs.	Medium	SCAP	Ecology	Planned	TBD		
	Request Lafarge to provide additional information about the composition of material behind the bulkhead and whether or not bulkhead repairs were completed during 2006.	Low	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Request Lafarge to provide additional information about the nature and composition of material behind the bulkhead adjacent to the LDW.	Medium	SCAP	Ecology	Planned	TBD		
<b>RM 1.3-1.6 West (Glacier Bay)</b>								
SW Kenny SD (Glacier Bay Outfall)	Collect inline sediment samples to evaluate whether contaminants are currently being transported to Glacier Bay via this pathway.	Medium	SCAP	SPU	Complete	--	Mar-09	Zinc, PAHs, phthalates, PCBs, and TPH-oil present at elevated concentrations.
	If COCs are present in the storm drain line, conduct source tracing to identify sources of contaminants.	Medium	SCAP	SPU	In Progress	TBD		An inline solids sample collected in May 2010 contained elevated concentrations of metals, PCBs, PAHs, phthalates, and TPH.
Alaska Marine Lines	Sample groundwater along shoreline to determine whether residual site contaminants are being discharged to Glacier Bay.	Medium	SCAP	Property owner/operator	Planned	TBD		
	Confirm location of former USTs that were removed in 1990.	Low	SCAP	Property owner/operator	Planned	TBD		
	Conduct follow-up inspection to ensure that concerns and recommendations from the January 2006 inspection have been addressed.	Low	SCAP	Ecology	Planned	TBD		
	Verify that remediation associated with filling of graving dock was completed and all conditions met.	Low	SCAP	Ecology	Planned	TBD		
Duwamish Shipyard	Negotiate an Agreed Order to address soil and groundwater contamination.	High	SCAP	Ecology, Property owner/operator	Complete	--	Sep-10	Agreed Order No. DE-6735.
	Clean out stormwater catch basins and lines, sample solids, and report results; clean and prepare video documentation of stormwater system.	High	SCAP	Property owner/operator	Complete	--	Jan-08	
	Evaluate results of test pit and soil stock pile testing.	Low	New	Property owner/operator	Complete	--	Jan-08	None needed; no exceedances of MTCA cleanup levels.
	Prepare work plans for further site investigations as specified in the Agreed Order.	High	SCAP	Property owner/operator	Complete	--	Aug-10	Final RI/FS Work Plan submitted to Ecology.
	Conduct site investigations as specified in the Agreed Order Statement of Work.	High	SCAP	Property owner/operator	Planned	2013		Phase 1 Site Investigations completed. Ecology required further investigations and expects an updated Work Plan in March 2013 following dispute resolution.
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions.	High	SCAP	Ecology	Planned	2014		
Glacier Northwest	Direct current and/or previous property owners/operators to conduct site characterization investigations.	High	SCAP	Ecology	Complete	--	May-09	Agreed Order No. DE-6000.
	Under the Agreed Order, require PLPs to prepare a Data Gaps Report.	High	Follow-up	Ecology	Complete	--	Sep-10	

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Under the Agreed Order, require PLPs to prepare work plans for site investigations as specified by Ecology.	High	SCAP	Property owner/operator	In Progress	Jun-13		In August 2012 Ecology completed and approved a Final Work Plan. The PLPs disputed and several work meetings are planned before a final decision is made regarding the Final Work Plan.
	Upon approval of work plans by Ecology, conduct site investigations as specified.	High	SCAP	Property owner/operator	Planned	Aug-13		
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions.	High	SCAP	Ecology	Planned	Jun-13		
	Conduct a site inspection to evaluate current operations with respect to stormwater and waste management.	Low	SCAP	Ecology, SPU	Complete	--	May-09	Facility in compliance.
	Verify the storm drainage pathway at the site; if stormwater flow to the LDW is confirmed, assess the need for stormwater characterization.	Medium	SCAP	SPU, Ecology	Complete	--	Nov-09	Historical stormwater piping investigation completed November 2009. No contaminant migration pathway to LDW.
	Issue CERCLA 104(e) request to the facility and property owners to obtain additional information on current and historical operations.	Low	New	EPA	Complete	--	2008	
	Review CERCLA 104(e) response submitted by Glacier Northwest.	Medium	Follow-up	EPA, Ecology	Complete	--	2008	
	Review CERCLA 104(e) response submitted by Reichhold, Inc.	Medium	New	EPA, Ecology	Planned	TBD		
N Terminal 115 (Former MRI Corporation)	Pursue further investigation of the potential for groundwater transport of contaminants to Glacier Bay or to storm drain lines which discharge to Glacier Bay; review results and determine whether remedial action is required.	Medium	SCAP	Ecology	Complete	--	2008	Port of Seattle to conduct a remedial investigation under the VCP.
	Require Port to enter the VCP in lieu of starting negotiations for Agreed Order.	Medium	New	Ecology	Complete	--	May-09	Ecology decided to pursue an Agreed Order with the Port of Seattle.
	Require Port to prepare Data Gaps Report and Remedial Investigation under VCP, including evaluation of arsenic in groundwater.	Medium	New	Ecology	Complete	--	Jan-10	Port of Seattle submitted Environmental Investigation Report in January 2010.
	Negotiate an Agreed Order to address soil and groundwater contamination.	Medium	New	Ecology	Complete	--	Mar-11	The Port of Seattle and Ecology signed Agreed Order DE 8099 on March 2, 2011.
	Conduct Remedial Investigation as specified in Agreed Order No. 8099.	Medium	New	Port of Seattle	Planned	Apr-13		The Port of Seattle submitted a Draft Work Plan for the RI/FS to Ecology in April 2011. Ecology commented and a revised version was expected in 2012.
	Conduct a site inspection to evaluate current operations with respect to stormwater and waste management.	Medium	SCAP	Ecology, SPU	Planned	Apr-14		
	Verify the storm drainage pathway at the site; if stormwater flow to the LDW is confirmed, assess the need for stormwater characterization.	Medium	SCAP	SPU, Ecology	Planned	Apr-14		
Chemithon	Prepare and/or update the SWPPP and processes to ensure that site activities do not result in transport of contaminants to the LDW.	Low	SCAP	Property owner/operator	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
<b>RM 1.6-2.1 West (Terminal 115)</b>								
SW Kenny Street SD/POS SD 6132/Terminal 115 CSO (Outfall 2127)	Identify and evaluate potential sources of the sediment COCs reported above screening values in storm drain structures within the SW Kenny Street SD basin.	Medium	SCAP	SPU, Ecology	In Progress	TBD		One sediment trap sample and one in-line solids sample collected in 2012.
Highland Park Way SW SD/POS 6162 (Outfall 2125)	Identify and evaluate potential sources of the sediment COCs reported above screening values in storm drain structures within the Highland Park Way SW SD basin.	Medium	SCAP	SPU, Ecology	In Progress	TBD		Two sediment trap samples and two in-line solids samples collected in 2012.
	Review data from storm drain solids samples collected upgradient of Outfall 2125 in April and October 2010 and May 2011, and data from sand cover samples collected from the clean sand cover placed on the maintenance dredged area in Berth 1, to evaluate the potential for sediment recontamination.	Medium	SCAP	Ecology, Port of Seattle, SPU	Planned	TBD		
West Michigan CSO (Outfall 2506)	Evaluate the 2009 King County effluent discharge data to assess whether the effluent concentrations from the West Michigan CSO represent a potential source of contaminants to the sediments near the Terminal 115 source control area.	Medium	SCAP	Ecology	Planned	TBD		
Terminal 115 - Port of Seattle Storm Drain Outfalls (Outfalls 2122, 2123, 2124, 2220, and POS 6146)	Review data from storm drain solids samples collected upgradient of Outfalls 2123, 2124, and 2220 in April and October 2010 and May 2011; storm drain solids samples collected upgradient of Outfall 2128 in September 2011; and data from sand cover samples collected from the clean sand cover placed on the maintenance dredged area in Berth 1 to evaluate the potential for sediment recontamination.	Medium	SCAP	Ecology, Port of Seattle	Planned	TBD		
	Collect base flow samples from the portions of the Terminal 115 SD system that discharge to Outfalls 2128 and 2220 to determine if contaminants in base flow (i.e., groundwater draining into the storm drain system through French drains and groundwater drainage structures) are present at concentrations exceeding Washington State Water Quality Standards (WAC 173-201A) and/or the draft groundwater-to-sediment screening levels.	Medium	SCAP	Port of Seattle	Planned	TBD		
	Negotiate an Agreed Order with the Port, to include Terminal-wide investigations to characterize the nature and extent of potential COC sources in fill material, soil, groundwater, and stormwater at Terminal 115, including specific areas identified in the Terminal 115 SCAP.	High	SCAP	Ecology, Port of Seattle	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Collect storm drain solids samples from the storm drain lines discharging to Outfalls 2122, 2123, 2124, 2128, 2220, and POS 6146 and provide the data to Ecology to identify potential contaminant sources. Samples were recently collected from the storm drain lines discharging to Outfalls 2123, 2124, 2128, and 2220.	High	SCAP	Port of Seattle	In Progress	TBD		
	Perform a video inspection of storm drain lines to identify areas where groundwater infiltrates the storm drain system.	High	SCAP	Port of Seattle	Planned	TBD		
	Provide information regarding discharges to the deck drains north of Berth 1 to Ecology. Information to be provided will include, at minimum, a description of BMPs employed to prevent pollution of the stormwater runoff that is conveyed to the deck drains.	High	SCAP	Port of Seattle	Planned	TBD		
	Provide additional information to Ecology regarding stormwater drainage to the LDW from the 150 SW Michigan Street area of the Terminal 115 property. Information to be provided will include, at minimum, a map showing the area draining to the two small outfalls and a description of BMPs employed to prevent stormwater pollution.	High	SCAP	Port of Seattle	Planned	TBD		
Icicle Seafoods	Review SPU's 2009 and Ecology's 2010 inspection reports to verify that operations and materials used at the facility do not represent a potential source of sediment COCs, which could commingle with stormwater or be spilled directly to the LDW.	Medium	SCAP	Ecology	Canceled	--	--	This facility has moved to a different location, therefore this action item is no longer relevant.
	Review the responses to CERCLA Section 104(e) Request for Information letters from the companies that provide services to or are affiliated with Icicle Seafoods to identify potential sources of sediment recontamination. These companies include: Cypress Island Seafood, LLC, Murphy Overseas, LLC, and Smoki Foods.	Low	SCAP	Ecology	Planned	TBD		
Gene Summy Lumber and Commercial Fence (N Terminal 115)	Review the response to the CERCLA Section 104(e) Request for Information letter from to identify potential sources of sediment recontamination that may be associated with historical operations.	Low	SCAP	Ecology	Planned	TBD		
Northwest Container Services	Perform a follow-up stormwater inspection at Northwest Container Services to verify compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW.	Medium	SCAP	Ecology, SPU	Planned	Feb-13		Northwest Container Services closed and moved out but then returned. Northland Services expanded their permit to include the Northwest Container Services footprint. A compliance inspection is scheduled for early 2013.

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Shultz Distributing	Determine if stormwater from the Shultz Distributing facility is conveyed to the Highland Park Way SW SD system without treatment.	High	SCAP	SPU, Port of Seattle	Planned	TBD		
	Perform a facility inspection to verify compliance with applicable regulations and BMPs to prevent the release of contaminants to the LDW.	Medium	SCAP	Ecology, SPU, King County	Planned	TBD		
Seafreeze Cold Storage	Review the responses from Seafreeze, Custom Seafoods, and Northwest Seafood Processors to the CERCLA Section 104(e) Request for Information letter to identify potential sources of sediment recontamination (if any) that may be associated with current or historical operations.	Low	SCAP	Ecology	Planned	TBD		
Seattle Engineering Department Penn Yard	Perform a property inspection to determine current use of the property and determine if stormwater and/or spills may be conveyed to the LDW via sheet flow or groundwater discharge.	Medium	SCAP	Ecology	Planned	TBD		
	Request information from the City of Seattle Engineering Department regarding historical operations performed by the department to determine if operations may have resulted in releases of contaminants to soil and/or groundwater.	Medium	SCAP	Ecology	Planned	TBD		
Former Foss Environmental Services	Request additional information regarding the status of the utility-owned pad-mounted electrical transformer from Haslund MP to determine if it remains at the property, and if so, to determine if it contains PCB-bearing fluid.	Medium	SCAP	Ecology	Planned	TBD		
	Request additional information from Haslund MP to determine the locations of storm drain lines on the former Foss Environmental property.	Medium	SCAP	Ecology	Planned	TBD		
	Review responses from McGraw-Hill Companies, Inc. and Ilahie Holdings, Inc. to the CERCLA Section 104(e) Request for Information letters to identify potential sources of sediment recontamination that may be associated with current or historical operations.	Low	SCAP	Ecology	Planned	TBD		
	Request that Haslund MP perform an environmental investigation to characterize the nature and extent of potential sediment COCs in soil and groundwater beneath the property. Soil and groundwater contamination may be present due to historical operations by Boeing.	High	SCAP	Ecology	Planned	TBD		
Aluminum & Bronze Fabricators	Determine if Aluminum & Bronze can obtain a CNE certificate or is required to obtain coverage under the Industrial Stormwater General Permit.	Medium	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Catholic Printery	Review the April 2010 local source control inspection report to determine if there is a potential for sediment recontamination via the stormwater pathway.	Medium	SCAP	Ecology	Planned	TBD		
<b>RM 2.2-3.4 West (Riverside Drive)</b>								
7 <sup>th</sup> Avenue S SD Outfall (Outfall 2112)	Continue source tracing to identify potential sources of the sediment COCs reported above screening levels in storm drain structures in the 7 <sup>th</sup> Avenue S SD basin.	Medium	SCAP	SPU, Ecology	In Progress	TBD		
King County Outfall (Outfall 3037)	Conduct source tracing to identify potential sources of sediment COCs reported above screening levels in LDW sediments adjacent to Outfall 3037.	Medium	SCAP	King County	In Progress	TBD		
Private Outfalls (Outfalls 2106, 2108, and 2113)	Conduct an inspection during a storm event to determine if the three unresolved outfalls (Outfalls 2106, 2108, and 2113) are operational or have been abandoned.	Medium	SCAP	SPU	Planned	TBD		
	If discharge from these outfalls is observed, conduct dye testing to determine if storm drain lines are connected to the unresolved outfalls, and delineate the associated drainage areas.	Medium	SCAP	SPU	Planned	TBD		
Independent Metals Plant 2	Conduct a follow-up stormwater compliance inspection to verify compliance with the corrective actions identified repeatedly by Ecology during inspections performed from 2007 to 2011. Evaluate compliance with corrective actions, and take enforcement action as appropriate.	High	SCAP	Ecology	In Progress	TBD		Ecology WQ conducted NPDES inspections on 4/16/12, 5/30/12 and 11/2/12.
	Review Independent Metals' revised SWPPP, when provided, and verify that the information identified in Ecology's October 21, 2011, corrective action letter is included in the SWPPP.	Low	SCAP	Ecology	Planned	TBD		
	Request drainage information from Independent Metals for Outfalls 2109 and 2111 to determine if the outfalls are operational and to identify the drainage areas associated with the outfalls, if any.	High	SCAP	Ecology	Planned	TBD		
Former Long Painting – 10 <sup>th</sup> Avenue S Facility	Perform a facility inspection at Unity Electric to verify compliance with applicable regulations and BMPs.	Medium	SCAP	King County	Planned	TBD		
American Civil Constructors Barge Removal Ramp	Request American Civil Constructors to provide information about the fill used for a barge removal ramp, to determine if the fill is a potential source of contaminants to adjacent sediments.	High	SCAP	EPA, USACE	Planned	TBD		
Machinists Inc – Main Facility	Evaluate the stormwater treatment system, when completed, to ensure compliance with applicable regulations and BMPs.	Low	SCAP	Ecology	Planned	TBD		

**Table 3-3. Source Control Action Items - Tier 2 and 3 Areas**

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
The Gear Works	Conduct a follow-up inspection to verify that Gear Works has complied with the corrective actions and recommendations identified by Ecology during the June 2010 inspection.	Medium	SCAP	Ecology	Complete	--	Feb-12	Ecology WQ conducted NPDES inspection on 2/23/12. The Gear Works was in compliance.
West Coast Wire Rope & Rigging	Re-inspect West Coast Wire to determine if the facility is in compliance with corrective actions identified during the May 2007 inspection.	Medium	SCAP	Ecology	Complete	--	Apr-12	Ecology WQ conducted NPDES inspection on 4/24/12. Several corrective actions were required.
Olympic Steel Door	Request Olympic Steel Door, Redox, and All Metal Arts to obtain coverage under the ISGP or apply for a CNE.	Low	SCAP	Ecology	Planned	TBD		
	Conduct a follow-up business inspection to verify compliance with corrective actions identified by SPU in 2009, applicable regulations, and BMPs, to prevent release of contaminants to the LDW.	Medium	SCAP	SPU	Planned	TBD		
Marine Lumber Service Inc.	Review the September 2011 inspection report to evaluate Marine Lumber Service's progress with regard to implementing source control BMPs and preventing ACZA leachate from entering the storm drain system.	Medium	SCAP	Ecology	In Progress	TBD		Ecology conducted NPDES inspections on 1/4/12, 1/30/12, and 4/26/12 and an Urban Waters Inspection on 1/15/12.
Rogers Machinery Co Inc.	Request Rogers Machinery to discharge wash water to the sanitary sewer.	Low	SCAP	Ecology	Planned	TBD		
Independent Metals Plant 1	Request Independent Metals to obtain environmental data to determine if soil and groundwater is contaminated by metals recycling operations and if COCs in soil and groundwater may be transported to the LDW.	Medium	SCAP	Ecology	Planned	TBD		

**Priority:**

	High = High priority action item -- to be completed prior to sediment cleanup
	Medium = Medium priority action item -- to be completed prior to or concurrent with sediment cleanup
	Low = Low priority action -- ongoing actions, or actions to be completed as resources become available
	Completed action item

**Type:**

SCAP	Action item identified in a SCAP
Follow-On	Action item is a follow-on to an action item identified in a SCAP
New	Action item identified after publication of the SCAP

**Table 3-4. Property Assessments Completed  
2003 through 2012**

<b>Source Control Area</b>	<b>No. of Properties Adjacent to LDW or Within a Storm Drain Basin that Discharges to Source Control Area</b>	<b>No. of Properties Within a CSO Basin that Discharges to Source Control Area</b>
EAA-1 (Duwamish/Diagonal)	317	136
EAA-2 (Trotsky Inlet)	27	0
EAA-3 (Slip 4)	13	0
EAA-4 (Boeing Plant 2/Jorgensen Forge)	2	0
EAA-5 (Terminal 117)	4	0
EAA-6 (Boeing Isaacson/Central KCIA)	20	0
EAA-7 (Norfolk CSO/SD)	7	0
RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)	3	0
RM 0.9-1.0 East (Slip 1)	3	0
RM 1.0-1.2 East (KC Lease Parcels)	4	108
RM 1.2-1.7 East (St. Gobain to Glacier Northwest)	3	4
RM 1.7-2.0 East (Slip 2 to Slip 3)	12	129
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)	9	0
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)	16	0
RM 3.9-4.3 East (Slip 6)	4	0
RM 4.3-4.9 East (Boeing Developmental Center)	1	0
RM 0.0-1.0 West (Spokane Street to Kellogg Island)	62	57
RM 1.0-1.3 West (Kellogg Island to Lafarge Cement)	1	0
RM 1.3-1.6 West (Glacier Bay)	11	0
RM 1.6-2.1 West (Terminal 115)	30	2
RM 2.1 West (1st Avenue S SD)	35	0
RM 2.2-3.4 West (Riverside Drive)	75	108
RM 3.8-4.2 West (Sea King Industrial Park)	In Progress	In Progress
RM 4.2-4.8 West (Restoration Areas)	In Progress	In Progress
<b>Total Property Assessments Completed (through December 2012)</b>	<b>659</b>	<b>544</b>

**Note:** Portions of KCIA are included in EAA-3, EAA-6, and EAA-7 source control areas. In this table, all of KCIA is included with EAA-3.

## 4.0 Early Action Area 1 (Duwamish/Diagonal Way)

The RM 0.1-0.9 East source control area (EAA-1; Duwamish/Diagonal Way) includes the Diagonal Avenue S CSO/SD basin and the S Nevada Street SD basin. Portions of the source control area that are adjacent to the LDW are shown in Figure 4-1. The Diagonal Avenue S SD basin is shown in Figure 4-2.

<b>Location</b>	RM 0.1-0.9 East
<b>Chemicals of Concern</b>	Bis(2-ethylhexyl)phthalate (BEHP), PAHs, lead, zinc, PCBs
<b>Data Gaps Evaluation</b>	Property reviews: June 2003 (SAIC 2003) Data Gaps Report for Duwamish/Diagonal CSO/SD Basin: August 2009 (SAIC 2009c)
<b>SCAP</b>	December 2004 (Ecology 2004b)

Source control action items for the Duwamish/Diagonal Way source control area are listed in Table 3-2. A total of 51 source control action items have been identified for this source control area; as of December 2012, 33 of these have been completed. Of the remaining action items, one is considered high priority.

### 4.1 Business Inspections

- SPU conducted 163 business inspections at 95 facilities in the Diagonal Avenue S SD basin during the current reporting period (January through December 2012); these are listed in Appendix B.
  - SPU conducted 3 audits, 69 initial inspections, and 91 follow-up inspections. Of these, 8 facilities were identified by SPU as not in compliance as of the end of December 2012:
    - City of Seattle-Operations Control Center (2700 Airport Way S)
    - ConGlobal Industries (1 S Idaho Street)
    - Jefferson Park Horticulture (4101 Beacon Avenue S)
    - QFC-Rainier (2707 Rainier Avenue S)
    - Safelite Auto Glass (4005 6<sup>th</sup> Avenue S)
    - Seattle DOT-Sunny Jim (4200 Airport Way S)
    - UPS-7<sup>th</sup> Ave (4329 7<sup>th</sup> Avenue S)
    - Veterans Administration Medical Center (1660 S Columbian Way)
- In June 2012, SPU conducted a dye test at Western Peterbilt, located at 3707 Airport Way S. The dye test confirmed that an internal trench drain, oil/water separator, and a steam cleaning wash bay at the facility is connected to a storm drain that eventually ties into the Diagonal Avenue S CSO/SD and discharges to the LDW (Ecology 2012e).
- Ecology conducted 19 inspections at 17 facilities within this source control area during the current reporting period; these are listed in Appendix C.

- Several violations were noted during an inspection at ConGlobal Industries, including failure to implement adequate stormwater treatment. Ecology is pursuing formal enforcement action.
- Three stormwater treatment units were installed at UPRR Argo Yard; these are scheduled to be operational by January 2013.

## 4.2 Source Tracing

- SPU has collected 63 sediment trap samples from six locations in the Diagonal Avenue S SD basin. The most recent samples were collected in March 2009; because results had been fairly consistent over the previous monitoring periods, a decision was made in 2010 to discontinue sediment trap sampling. SPU plans to re-install two of the traps in this system in May 2013.
- In addition, SPU has collected 75 in-line solids samples, 80 onsite catch basin samples, and 94 right-of-way catch basin samples in the Diagonal Avenue S CSO/SD basin. During the current reporting period, 10 in-line solids samples, two onsite catch basin samples, and eight right-of-way catch basin samples were collected in this drainage basin.
  - Elevated concentrations of PCBs were detected at several locations, including 46 milligrams per kilogram (mg/kg) DW at MH18, 12 mg/kg DW at RCBSTEV4, 8.2 mg/kg DW at TUL-CB2, and 7.3 mg/kg DW at MH259 (Figure 4-2).
  - Mercury was detected at 7.6 mg/kg in MH18, near 6<sup>th</sup> Avenue S and S Snoqualmie Street. This concentration is well above the CSL for mercury of 0.59 mg/kg.
  - Lead was detected at 2,760 mg/kg at MH260.
  - Concentrations of BEHP were elevated at several locations: 46 mg/kg DW at TUL-CB2, 37 mg/kg DW at RCBSTEV4, 14 mg/kg DW at MH257, and 10 mg/kg DW at MH18. The 2LAET value for BEHP is 1.9 mg/kg DW.
- SPU has collected one in-line solids sample in the S Nevada Street SD. No samples were collected in this basin during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 4-2. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic		☒		
	Copper			☒	

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
	Lead		☒		
	Mercury		☒		
	Zinc		☒	×	×
PCBs	Total PCBs		☒	☒	☒
PAHs	LPAH		☒	☒	☒
	HPAH		☒	☒	☒
	Total cPAH		☒	☒	☒
Phthalates	BEHP		☒	☒	☒
	Butylbenzylphthalate		☒	×	☒
	Dimethylphthalate			☒	
	Di-n-butylphthalate			☒	
	Di-n-octylphthalate				
Other SVOCs	1,2-Dichlorobenzene				
	1,4-Dichlorobenzene				
	2-Methylnaphthalene				
	2-Methylphenol				
	4-Methylphenol				
	2,4-Dimethylphenol				
	Benzoic acid				
	Benzyl alcohol				
	Dibenzofuran				
	Hexachlorobenzene				
	Pentachlorophenol				
	Phenol				
TPH	TPH-diesel		☒	☒	☒
	TPH-oil		×	☒	☒

CB = catch basin

cPAH = carcinogenic PAH

HPAH = high molecular weight PAH

LPAH = low molecular weight PAH

SVOC = semi-volatile organic compound

TPH = total petroleum hydrocarbon

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for "Other SVOCs" from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

### 4.3 Facility-Specific Source Control Actions

#### Port of Seattle Terminal 108 / Former Chiyoda Property

The Port of Seattle is working to manage source control for this site under Ecology's Voluntary Cleanup Program (VCP). In 2008, the Port of Seattle, in consultation with Ecology, prepared an Environmental Conditions Report for Terminal 108 (Windward 2008b) and developed a Source Control Strategy Work Plan, which outlined an approach for evaluating and developing long-term source control actions at this property (Windward 2008a).

Based on the findings in these reports, the Port decided that different source control options were appropriate for the western (T108W) and eastern (T108E) parcels of the site.

<b>Current Operations</b>	The larger eastern parcel (T108E) is leased to ConGlobal Industries for empty container and truck chassis storage and repair. The smaller western parcel (T108W) is unoccupied.
<b>Historical Operations</b>	City/county wastewater treatment plant, with treatment lagoons (used for one-time PCB-contaminated sediment); dredge sediment filling; bulk cement terminal.
<b>Address</b>	4525 Diagonal Avenue S
<b>Facility/Site ID</b>	2344 (Chevron Seattle Terminal 4097)
<b>Chemicals of Concern</b>	PCBs, PAHs, cadmium, lead, chromium, petroleum hydrocarbons
<b>Media Affected</b>	Groundwater, soil

In October 2009, the Port prepared a Source Control Strategy Plan for T108W (Windward 2009), and in August 2011 they submitted a Source Control Strategy Plan for T108E and the western portion of Terminal 106 (T106W), located just to the north (AECOM 2011). These areas are currently leased to ConGlobal Industries for shipping container and truck chassis storage and repair.

- In June 2012, the Port of Seattle prepared a SAP for the collection of data to support source control engineering evaluations, and to conduct sampling. This SAP was prepared to address the data gaps identified in the Source Control Strategy Plan. The SAP summarizes the scope of work and presents the methods that will be used for sample collection, analysis, data management, and reporting (AECOM 2012a).
- The Port collected groundwater and bank soil samples in December 2012 (Kuroiwa 2012). Four groundwater samples were collected at T106 (MW-S1, MW-S2, MW-S3, and MW-S4), and three groundwater samples were collected at T108 (PGG-2, PGG-5, and PGG-6). Preliminary results indicate that metals are present in all locations and petroleum hydrocarbons are present at T108. PCBs, PAHs, and benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in any of the groundwater samples.
- Bank soil samples were collected at four locations at T108 (BS-1, BS-2, BS-3, BS-4). Based on preliminary data, PCBs were detected at BS-3; PAHs were detected at BS-2, BS-3, and BS-4. A native soil sample was also collected at T-108. PCBs and PAHs were not detected in sample BS-1, BS-2, or the native soil sample (Kuroiwa 2012).
- The next round of groundwater sampling is scheduled for March 2013.

### ConGlobal Industries (formerly Container Care International)

ConGlobal Industries leases portions of the Port of Seattle's Terminal 106 and 108 properties. The facility has been granted coverage under the ISGP (No. WAR-010569) and is subject to the conditions of the Port's Phase I municipal stormwater permit. Stormwater from the T106W area is discharged to the LDW via the Diagonal Avenue S CSO/SD and S Nevada Street SD.

<b>Current Operations</b>	Shipping container and truck chassis storage and repair
<b>Historical Operations</b>	Same as current
<b>Address</b>	1 S Idaho Street
<b>Facility/Site ID</b>	54918197
<b>Chemicals of Concern</b>	Unknown
<b>Media Affected</b>	Stormwater

In 2010, stormwater Level 3 corrective actions were triggered at ConGlobal Industries, requiring the installation of stormwater treatment by September 30, 2010.

- ConGlobal was inspected on November 15, 2012. At this inspection it was determined that adequate stormwater treatment was not properly implemented at this facility. Ecology is pursuing a formal enforcement action.

### Washington State Liquor Control Board

Ecology performed a reconnaissance-level investigation at the Washington State Liquor Control Board property in July 2011. Findings suggested that soil and groundwater pose only a limited risk to LDW sediments; however, elevated concentrations of PCBs in three catch basins may represent a risk for LDW sediment recontamination.

<b>Current Operations</b>	Distribution warehouse
<b>Historical Operations</b>	Same as current
<b>Address</b>	4401 East Marginal Way S
<b>Facility/Site ID</b>	1891210
<b>Chemicals of Concern</b>	PCBs
<b>Media Affected</b>	Stormwater

- In January 2012, Ecology decommissioned 8 groundwater monitoring wells that were used in the 2011 investigation (Hart Crowser 2012a).

### Rainier Commons / Former Rainier Brewery Property

The former Rainier Brewery property is currently known as Rainier Commons. In 2004/2005, SPU discovered elevated concentrations of PCBs in a catch basin on Airport Way S, adjacent to this property. Samples collected from catch basins at the property contained PCB concentrations of 177 to 2,226 mg/kg DW. Stormwater drainage patterns are somewhat complicated at this facility.

<b>Current Operations</b>	Coffee roasting and storage, artist loft, two restaurants
<b>Historical Operations</b>	Brewery
<b>Address</b>	3100 Airport Way S
<b>Facility/Site ID</b>	9192461
<b>Chemicals of Concern</b>	PCBs
<b>Media Affected</b>	Stormwater

In general, the northern catch basins drain to the Diagonal Avenue S SD system on Airport Way S, while the southern catch basins drain to a combined sewer on Airport Way S prior to discharging to the King County Hanford Trunk combined sewer pipeline, which is tributary to a CSO outfall that is outside of the LDW (King County Hanford #2 CSO Outfall of the East Waterway).

- In early 2012, Rainier Commons completed a demonstration project to remove paint from an area that is generally representative of the exterior PCB paint at the property. The demonstrations provided data on paint removal technologies, and their performance on Rainier Commons structures. EPA Region 10 is working with Rainier Commons to develop a plan and schedule for exterior paint removal and for several smaller interior projects. The results of the demonstration project suggest that Rainier Commons can successfully remove PCB paint and that there are little or no PCBs remaining following effective paint removal (Bartus 2012).
- In July 2012, SPU resampled two catch basins on and downstream of the Rainier Commons property, as well as a maintenance hole downstream of the property. The samples contained elevated levels of PCBs (7.3 to 12.4 mg/kg DW). According to SPU, these data indicate that PCBs continue to migrate off this site. The system was cleaned in early 2008. SPU issued an NOV to Rainier Commons and required them to re-clean the drainage system. This work is expected to be complete in 2013.





## 5.0 Early Action Area 2 (Trotsky Inlet)

The RM 2.1-2.2 West (EAA-2; Trotsky Inlet) source control area is shown in Figure 5-1. The EAA-2 source control area includes the 2<sup>nd</sup> Avenue S SD basin.

<b>Location</b>	RM 2.1-2.2 West
<b>Chemicals of Concern</b>	PCBs, phthalates, mercury, lead, zinc, dichloro-diphenyl-trichloroethane (DDT), dieldrin
<b>Data Gaps Evaluation</b>	February 2007 (SAIC 2007b); December 2008 – Douglas Management Company property (SAIC 2008d); June 2009 – Boyer Towing property (SAIC 2009b)
<b>SCAP</b>	June 29, 2007 (Ecology 2007a)

Source control action items for the Trotsky Inlet source control area are listed in Table 3-2. A total of 33 source control action items have been identified for this source control area; as of December 2012, 18 of these have been completed. Of the remaining action items, one is considered high priority.

### 5.1 Business Inspections

- SPU conducted a total of 16 business inspections at eight facilities in the Trotsky Inlet basin during the current reporting period, including seven initial and nine follow-up inspections (Appendix B). All were in compliance as of the end of December 2012.

### 5.2 Source Tracing

- SPU has collected four in-line solids samples, five onsite catch basin samples, and 18 right-of-way catch basin samples in the 2<sup>nd</sup> Avenue S SD basin. During the current reporting period, one in-line solids sample, one onsite catch basin sample, and two right-of-way catch basin samples were collected in this drainage basin.
  - Highest concentrations were detected at sample location CB169 (Figure 5-1), a catch basin located at 7417 4<sup>th</sup> Avenue S (American Environmental Construction). Mercury (0.83 mg/kg), zinc (1,660 mg/kg), TPH-oil (4,900 mg/kg), total PCBs (1.03 mg/kg DW), BEHP (28 mg/kg DW), butylbenzylphthalate (3.5 mg/kg DW), and dimethylphthalate (0.18 mg/kg DW) exceeded the CSL/2LAET level at this location.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figure 3-2. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Copper			
	Lead			
	Mercury		☒	
	Zinc	×	☒	×
PCBs	PCBs, total	×	☒	
PAHs	LPAH			
	HPAH			
	Total cPAH		☒	
Phthalates	BEHP	☒	☒	☒
	Butylbenzylphthalate	×	☒	×
	Dimethylphthalate		☒	×
	Di-n-butylphthalate			
	Di-n-octylphthalate	×		
Other SVOCs	2-Methylnaphthalene			
	4-Methylphenol			
	Benzyl alcohol			
	N-Nitrosodiphenylamine			
	Pentachlorophenol			
	Phenol			
TPH	TPH-diesel			
	TPH-oil	☒	☒	☒

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

- Ecology collected a bank soil sample at one location in this source control area in May 2011; a data report was published in March 2012 (Hart Crowser 2012b).
  - At the Boyer-Trotsky sampling location, concentrations of the following compounds exceeded the SQS/LAET: butylbenzylphthalate (0.13 mg/kg DW) and PCBs (0.56 mg/kg DW).

### 5.3 Facility-Specific Source Control Actions

#### Industrial Container Services / Trotsky Property / Former Northwest Cooperage

On May 18, 2010, Ecology entered into an Agreed Order (DE-6720) with Herman and Jacqueline Trotsky (owners) and Industrial Container Services – WA, LLC (operator) (Ecology 2010d). The Agreed Order requires that the property owners conduct an RI/FS to define the nature and extent of contamination in soil, groundwater, surface water, and sediments, and to evaluate cleanup alternatives. In addition, the property owners are required to prepare a draft Cleanup Action Plan (CAP) that identifies the preferred cleanup action and develops a schedule to remediate the contamination (Ecology 2010b).

<b>Current Operations</b>	Steel drum reconditioning
<b>Historical Operations</b>	Same as above
<b>Address</b>	7152 1 <sup>st</sup> Avenue S
<b>Facility/Site ID</b>	2154 (Industrial Container Services WA LLC)
<b>Chemicals of Concern</b>	PCBs, metals (arsenic, chromium, copper, lead, mercury, zinc), PAHs, phthalates, chlorinated benzenes, phenols, petroleum hydrocarbons, pesticides
<b>Media Affected</b>	Soil, groundwater, sediment

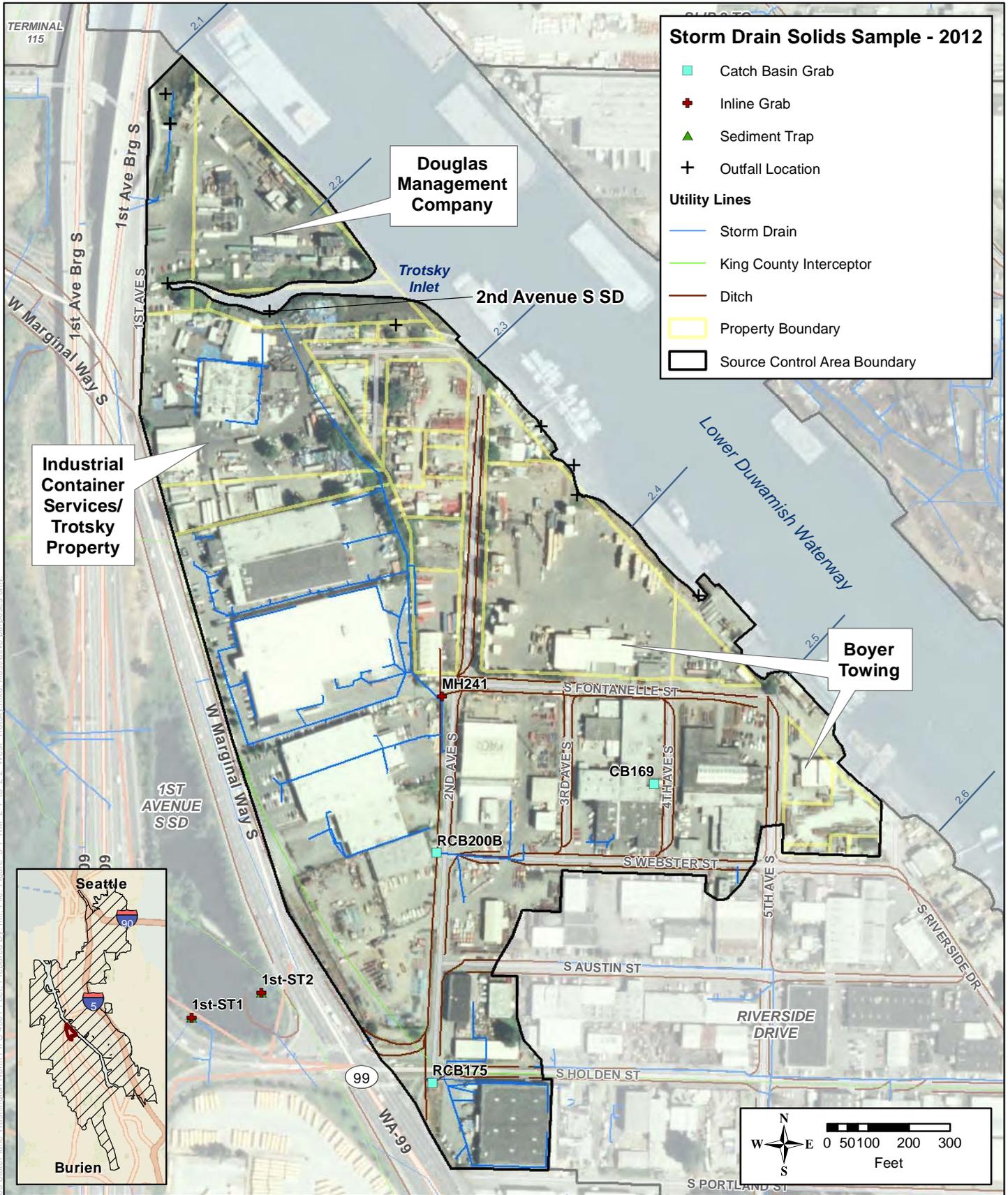
- In February 2012, Industrial Container Services submitted a revised RI/FS Work Plan to Ecology for final review and approval (Dalton, Olmsted & Fuglevand 2012). Ecology conditionally approved this Work Plan (Sutton 2012).
- The potentially liable parties (PLPs) completed field data collection for the investigation described in the RI/FS. Ecology and the PLPs are negotiating the activities and requirements for an additional phase of the RI/FS. Field work for the additional phase of the RI is scheduled to begin in summer of 2013.

#### Douglas Management Company / Alaska Marine Lines

On May 6, 2011, Ecology entered into an Agreed Order (DE-8258) with 7100 1<sup>st</sup> Avenue S, Seattle, LLC (owner). The Agreed Order requires that the owners conduct an RI/FS to define the nature and extent of contamination in soil, groundwater, surface water, and sediments, and to evaluate cleanup alternatives. In addition, the operator is required to prepare a draft CAP that identifies the preferred cleanup action and develops a schedule to remediate the contamination (Ecology 2011b).

<b>Current Operations</b>	Shipping container storage
<b>Historical Operations</b>	Shipbuilding, metal and salvage, sand and gravel batch plant, marine cargo handling
<b>Address</b>	7100 1 <sup>st</sup> Avenue S
<b>Facility/Site ID</b>	97573251 (Douglas Management Dock)
<b>Chemicals of Concern</b>	Petroleum hydrocarbons, PCBs, metals (arsenic, chromium, copper, mercury, and zinc), volatile organic compounds (VOCs), semivolatile organic compound (SVOCs)
<b>Media Affected</b>	Soil, groundwater

- The PLP completed an RI/FS Work Plan in February 2012. Ecology and the property owner/operator are negotiating details regarding the Work Plan; negotiations are expected to be completed in early 2013. Proposed activities include characterizing the nature and extent of soil and groundwater contamination; assessing stormwater discharges and catch basin solids to evaluate whether the stormwater system is a potential transport mechanism for contaminants in soil and groundwater to the LDW; evaluating existing soil, groundwater, and stormwater solids data; and identifying data gaps.



### Storm Drain Solids Sample - 2012

- Catch Basin Grab
- + Inline Grab
- ▲ Sediment Trap
- + Outfall Location

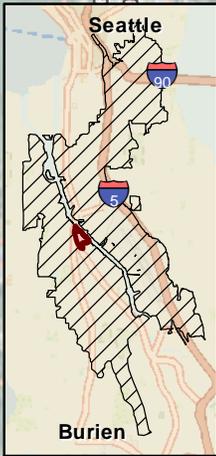
**Utility Lines**

- Storm Drain
- King County Interceptor
- Ditch
- Property Boundary
- Source Control Area Boundary

**Industrial Container Services/  
Trotsky Property**

**Douglas Management Company**

**Boyer Towing**



**Figure 5-1. Early Action Area 2:  
RM 2.1-2.2 West (Trotsky Inlet)**

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared by: mlf. File: Figure\_5-1\_RM\_2.1\_to\_2.2\_West\_Trotsky.mxd. Illustrative purposes only.

## 6.0 Early Action Area 3 (Slip 4)

The RM 2.8 East (EAA-3; Slip 4) source control area is shown in Figure 6-1. This source control area includes the North Boeing Field/Georgetown Steam Plant site, the northern portion of KCIA, and the I-5 SD, KCIA SD#3/PS44 EOF, and Georgetown Flume drainage basins.

<b>Location</b>	RM 2.8 East
<b>Chemicals of Concern</b>	PCBs, phthalates, PAHs, metals
<b>Data Gaps Evaluations</b>	Slip 4: January 15, 2004 (SEA 2004) Crowley and First South Properties: October 2006 (SAIC 2006c) Upland property reviews: October 2006 through February 2007 (SAIC 2006a, SAIC 2006b, SAIC 2006d, SAIC 2006e, SAIC 2007a, SAIC 2007e) NBF-GTSP: February 2007 (SAIC 2007c, SAIC 2009d)
<b>SCAP</b>	July 2006 (Ecology 2006); Slip 4 Status Report – February 2007 (SAIC 2007d); Slip 4 Interim Source Control Status Report – March 2011 (Ecology 2011d)

Source control action items for the Slip 4 source control area are listed in Table 3-2. A total of 56 source control action items have been identified for this source control area; as of December 2012, 41 of these have been completed and four have been canceled. Of the remaining action items, four are considered high priority.

The City of Seattle completed a non-time critical removal action to address contaminated sediment at the Slip 4 Early Action Area and submitted a Removal Action Completion Report for the Slip 4 Early Action Area on July 26, 2012 (Integral 2012a). The Slip 4 removal action construction occurred between October 3, 2011, and February 7, 2012.

The primary objective of the removal action was to reduce the concentrations of contaminants in post-cleanup surface sediments to below the SQS for PCBs and other chemicals. The Slip 4 EAA removal action was not based on complete removal of contaminated sediments to the SQS. Instead, the selected removal included dredging and excavation to target elevations designed to remove the most highly contaminated sediments, create stable slopes, and improve and expand habitat. The entire EAA was then covered with an engineered sediment cap to protect human health and the environment from residual contaminants that may be left behind.

The removal action included dredging and excavation of 10,256 cubic yards of sediment and soil, disposal of 17,334 tons of soil, sediment, and debris in a Subtitle D landfill, demolition of 20,019 square feet of concrete pier structure, recycling of 3,278 tons of concrete and 79 tons of steel, importing and placing 53,006 tons of clean material to construct sediment caps and slope caps over 3.43 acres, and construction of engineered soil covers with habitat enhancements over 0.15 acre in former upland areas (Integral 2012a).

Post-construction sediment sampling in an area along the boundary of the cleanup found levels of PCBs in surface sediments that were elevated relative to pre-construction concentrations. A nominal 9-inch layer of waterway cap material was placed over the boundary area in February 2012, and additional samples were collected following placement of this cover (Integral 2012b). In May 2012, 8<sup>th</sup> Avenue Terminals (Crowley Marine Services) requested that the City of Seattle

collect additional data to determine whether remediation activities may have influenced PCB concentrations in surface sediments within their property. Samples were collected in October 2012; a data report was scheduled to be completed in January 2013 (Seattle City Light 2012).

## 6.1 Business Inspections

- SPU conducted a total of 11 business inspections at seven facilities in the Slip 4 basin during the current reporting period, including seven initial inspections and four follow-up inspections (Appendix B). There was one facility that was not in compliance as of December 2012.
  - SPU inspected Marine Vacuum Services on July 25, 2012. The SPU inspector noticed that the site was impacting groundwater. He noted that a large number of leaks from trucks and other sources led to buildup of contamination in a trench that lies along the southern side of the property (Ecology 2012h).
- Ecology conducted four inspections at three facilities in the Slip 4 source control area during the current reporting period (Appendix C).
  - Ecology conducted an ISGP compliance inspection at First Student (7400 8<sup>th</sup> Avenue S). The facility was asked to revise their stormwater monitoring plan, and implement housekeeping improvements.

## 6.2 Source Tracing

- Boeing and SPU have been sampling sediment traps in the Slip 4 storm drains since 2005.<sup>8</sup> Boeing has collected 89 sediment trap samples from seven sediment traps located on Boeing-leased property at NBF, and SPU has collected 21 samples from two sediment traps located on the northern portion of KCIA and 11 samples from one sediment trap in the I-5 SD. During the current reporting period, Boeing collected samples in April 2012; SPU collected samples in June/July 2012.
- While generally decreasing over time, PCB concentrations in all sediment traps except T3A remain at concentrations above the LAET for impacts to sediment (0.13 mg/kg DW). The concentration of PCBs at T4 was above the 2LAET (1.0 mg/kg DW) in April 2012.

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<sup>8</sup> Sediment traps have been installed at the following locations:

- T1 – Downstream end of the north lateral and north central lateral storm drain lines, upstream of the King County Lift Station that pumps stormwater to KC Airport SD#3/PS44 EOF.
- T2 and T2A – Downstream and upstream, respectively, of the Boeing-leased property along the south lateral storm drain line.
- T3 and T3A – Downstream and upstream, respectively, of the Boeing-leased property along the south central lateral storm drain line.
- T4 and T4A – Downstream and upstream, respectively, of the Boeing-leased property along the north central lateral storm drain line.
- T5 and T5A – Downstream and upstream, respectively, of the Boeing-leased property along the north lateral storm drain line.
- T6 – Intersection of S Hardy Street and Airport Way S, along the I-5 Storm Drain.

Sediment Trap Location	Range of All PCB Conc'ns (mg/kg DW)	Most Recent PCB Conc'n (mg/kg DW)
Sample Dates	2005–2011	April 2012
T1 (Downstream end of north and north-central lateral SD)	0.68 – 420	0.62
T2 (Downstream end of south lateral SD)	0.010 – 1.46	0.75
T2A (Upstream of NBF on the south lateral SD)	<0.02 – 0.38	0.18*
T3 (Downstream end of south-central lateral SD)	0.026 – 1.81	0.70
T3A (Upstream of NBF on the south-central lateral SD)	<0.02 – 0.73	<0.02*
T4 (Downstream end of north-central lateral SD)	0.24 – 2.75	1.4
T4A (Upstream of NBF on the north-central lateral SD)	<0.011 – 5.60	0.26
T5 (Downstream end of north lateral SD)	2.1 – 800	3.6
T5A (Upstream of NBF on the north lateral SD)	0.086 – 0.67	0.41**
T6 (I-5 SD)	<0.019 – 7.8	0.16 (June 2012)

\* Most recent sample was collected in October 2009.

\*\* During 2012, offsite drainage to the north lateral storm drain line was rerouted around the NBF site. The sediment trap at T5A was removed, and a grab solids sample was collected at the wet well in this new King County storm drain line in lieu of the T5A sediment trap sample.

- To date, SPU has collected 10 in-line solids samples and one onsite catch basin (CB) sample in the NBF/northern KCIA storm drain basin that discharges at KCIA SD#3/PS44 emergency overflow (EOF). One sample was collected by SPU from this basin during the current reporting period.
- To date, SPU has collected two in-line solids samples, three onsite catch basin samples, and three right-of-way catch basin samples in the I-5 SD. One in-line solids sample was collected during the current reporting period.
- SPU has collected six onsite catch basin samples in areas of the EAA-3 source control area that discharge to Slip 4 via private storm drains. SPU has also collected eight right-of-way catch basin samples and one catch basin sample from structures plumbed to the combined sewer system within EAA-3.
- To date, SPU has collected 13 in-line solids samples, 2 onsite catch basin samples, and 7 right-of-way catch basin sample in the Georgetown Flume. In 2010, the Flume was removed and replaced with a new storm drain system that collects roof runoff from the GTSP, as well as runoff from S Myrtle Street and other areas west of the flume corridor, outside of KCIA boundaries. No source tracing samples have been collected from the new GTSP storm drain. SPU attempted to sample this system in 2012, but no sediment had accumulated in the lines or the catch basins.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figure 3-2. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps (SPU and Boeing)	In-line Solids (SPU)	Onsite CB Solids (SPU)	Right-of-Way CB Solids (SPU)
Metals	Arsenic				
	Copper	×			
	Lead	×			
	Mercury	×			
	Zinc	×	×		
PCBs	PCBs, total	×			
PAHs	LPAH	×			
	HPAH	×			
Phthalates	BEHP	☒			
	Butylbenzylphthalate	×			
	Dimethylphthalate				
	Di-n-butylphthalate	×			
	Di-n-octylphthalate	×			
Other SVOCs	1,4-Dichlorobenzene				
	2,4-Dimethylphenol				
	2-Methylnaphthalene				
	2-Methylphenol				
	4-Methylphenol				
	Benzoic acid				
	Benzyl alcohol				
	Dibenzofuran				
	Pentachlorophenol				
	Phenol				
TPH	TPH-diesel				
	TPH-oil	☒			

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012). Table includes only SPU samples and SPU/Boeing sediment trap samples; it does not include other storm drain solids samples collected as part of ongoing investigations at the NBF-GTSP site.

Data for "Other SVOCs" from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

## 6.3 Facility-Specific Source Control Actions

### Crowley Marine Services / 8<sup>th</sup> Avenue Terminals

Ecology and 8<sup>th</sup> Avenue Terminals, Inc. negotiated Agreed Order DE-6721 to conduct an RI/FS, implement interim actions if needed, and prepare a draft CAP. The Agreed Order became effective on October 12, 2009 (Ecology 2009k).

- In July and August 2012, 8<sup>th</sup> Avenue Terminals installed a new stormwater system to replace a collapsed line that formerly drained the northern portion of the property. The new stormwater system is connected to an existing outfall to Slip 4.
- Crowley Marine Services submitted a draft final RI/FS Work Plan to Ecology in March 2012. Ecology and Crowley Marine Services are continuing to negotiate the content of the RI. Ecology expects an approved RI/FS Work Plan, SAP, and Quality Assurance Project Plan in early 2013.

<b>Current Operations</b>	Cargo container storage, berthing facility, railroad operations
<b>Historical Operations</b>	Hydraulic parts manufacturing, lumber mill, pole-dipping, excelsior (wood packing material) manufacturing
<b>Address</b>	7400 8 <sup>th</sup> Avenue S, Seattle 98108
<b>Facility/Site ID</b>	1940187 (Crowley Marine Services Inc. 8 <sup>th</sup> Avenue S) 63123962 (Alaska Logistics LLC)
<b>Chemicals of Concern</b>	Arsenic, copper, PAHs, PCBs, phthalates, petroleum hydrocarbons
<b>Media Affected</b>	Sediment, soil, groundwater

### King County International Airport

- Ecology updated KCIA's ISGP to include all industrial activities at the airport. KCIA subsequently revised its SWPPP to address these additional activities. Under the updated permit, KCIA will monitor stormwater in each of the airport's four drainage basins that include the north area (Slip 4 basin), central area (Former Slip 5 basin), south-central area (Slip 6 basin), and south area (Norfolk CSO basin). Sampling at five locations was initiated during the first quarter of 2011. KCIA sampled stormwater monthly to quarterly at two locations in the north area in 2012. Sample parameters include turbidity, pH, zinc, copper, and petroleum sheen.
- Based on eight quarters of sampling in the north area since 2011, KCIA achieved consistent attainment for turbidity, zinc and copper at sampling point SP1 (representative of north-east area). Copper has been intermittently above benchmarks at the SPM sampling location. Metalzorb products have been installed to reduce dissolved copper

<b>Current Operations</b>	General aviation airport and related activities
<b>Historical Operations</b>	Military airport operations; general aviation
<b>Address</b>	7277 Perimeter Road S (main terminal); various tenant addresses
<b>Facility/Site ID</b>	2051 (King County Int. Airport Maintenance Shop)
<b>Chemicals of Concern</b>	PAHs, phthalates, copper, zinc, petroleum hydrocarbons, PCBs
<b>Media Affected</b>	Stormwater, groundwater

concentrations. Other source control activities have included tenant inspections to assess pollutant sources and best management practices (BMPs), performing daily sweeping, weekly oil water separator (OWS) inspections, spill/SWPPP training, and monthly airport-wide inspections.

- In May 2012, KCIA conducted a Phase II Environmental Site Assessment at the Shultz Distributing site to assess whether contaminants are present (URS 2012b). Soil and groundwater contamination with petroleum hydrocarbons was confirmed at the site. Shultz Distributing and its lessees are working with Ecology under its VCP to investigate and conduct cleanup at the site as needed.
- In October 2012, KCIA sampled and cleaned six OWSs in the north drainage basin. Samples collected at these structures exceeded the SQS/LAET for PCBs, metals, PAHs, and BEHP. These structures are designed to collect stormwater solids and hydrocarbons, which are then appropriately disposed of offsite during periodic cleanings. Comparing in-line sediment traps and upgradient OWS solids data, the OWSs appear to be functioning properly in reducing the migration of contaminants offsite and into the LDW.
- In 2012, KCIA completed the Taxiway Alpha Rehabilitation Project with the repair/replacement/abandonment of damaged stormwater drainage lines in the north area. The system became operational in summer 2012. The project was expected to reduce groundwater infiltration into the storm drain system, and potentially reducing iron bacteria precipitate which affects turbidity.

### North Boeing Field / Georgetown Steam Plant Site

An Agreed Order (DE-5685) for the NBF-GTSP Site was signed by the PLPs (Boeing, City of Seattle, King County) and Ecology, effective August 14, 2008 (Ecology 2008c). Under the terms of the Agreed Order, Ecology will complete an RI/FS and conduct one or more interim actions, if appropriate, at the NBF-GTSP site. The PLPs will be given first opportunity to perform any interim actions that may be required under the Agreed Order. The PLPs will pay remedial action costs for Ecology-conducted remedial actions at the site.

<b>Current Operations</b>	GTSP: Museum NBF: Aircraft finishing and testing; aircraft research and development
<b>Historical Operations</b>	GTSP: Power plant, cooling water discharge NBF: Same as current
<b>Address</b>	GTSP: 6700 13 <sup>th</sup> Avenue S, Seattle 98108 NBF: 7500 East Marginal Way S, Seattle 98108
<b>Facility/Site ID</b>	2050 (NBF-GTSP)
<b>Chemicals of Concern</b>	PCBs, PAHs, metals, phthalates, VOCs, petroleum hydrocarbons
<b>Media Affected</b>	Soil, groundwater, stormwater

Source control activities conducted at the NBF-GTSP site during the current reporting period are listed below.

Dates	Activity	Description
January – December 2012	RI/FS Work Plan	Preparation of the Draft RI/FS work plan continued in early 2012. The draft Work Plan was submitted to the PLPs on March 30, 2012. The PLPs responded with extensive comments. Negotiation of the final work plan continued through December 2012.
January 2012	Fence Line Interim Action	Work on removal of PCB and TPH-contaminated soils near the GTSP continued in early 2012 (Landau 2012d). Discovery of a contaminated concrete structure on the property boundary between the GTSP and KCIA delayed project completion. The structure was cleaned and backfilled with concrete and bentonite on the GTSP property. The structure was investigated on the KCIA property and was found not to be contaminated (Landau 2012e). The fence line interim action was considered substantially complete in January 2012 (Integral 2012b).
January – December 2012	Long Term Stormwater Treatment System Operation and Monitoring	Boeing continued to operate and monitor the NBF Long-Term Stormwater Treatment system throughout 2012. Monitoring results indicate the system is meeting EPA-established interim PCB goals for water quality (0.03 µg/L) and a flow-weighted average annual concentration for total PCBs in water (0.018 µg/L). The treatment system is designed to treat site stormwater with the highest PCB concentrations and approximately 60% of all site stormwater (Landau 2012a, 2012b).
January – December 2012	NBF Paint Abatement and Storm Drain Cleaning	Boeing continued paint abatement and storm drain cleaning activities during 2012. Paint abatement activities included removal of paint from metal doors, painted concrete, and the metal roof vent on the 3-322 building; from bollards and pressure-indicating valves near the 3-318 and 3-390 buildings; from painted concrete foundation and pillars at the 3-374 building; and from painted concrete foundation, pillars, roll-up doors, and pedestrian doors/door frames at the 3-318 building. Boeing contractors cleaned all accessible catch basins, manholes, and OWSs except for OWS-640. Boeing contractors also cleaned 1,190 linear feet of the north lateral storm drain line. The report will be available in 2013.
January – March 2012	Trichloroethene (TCE) Investigation on KCIA Property	KCIA completed a groundwater monitoring investigation on property adjacent to the GTSP. The purpose of the investigation was to determine if there is a source of TCE on the KCIA property that is migrating onto the GTSP property. The investigation did not identify a significant source of TCE on KCIA property (URS 2012a).
August 2012	Analysis of Interim Actions for NBF Building 3-360 and 3-800 VOC Plume	In August 2012 Boeing completed an analysis of substrate injections into a VOC groundwater plume located in the 3-360 and 3-800 areas. The injections were conducted in 2009, 2010, and 2011 to reduce concentrations of VOCs by reductive dechlorination. The analysis indicated that over half of the performance wells show VOC concentration reductions of 65% or greater.

Dates	Activity	Description
December 2012	Comparison of Stormwater Solids Sampling Methods	Ecology's contractor completed a technical memorandum documenting the comparison of stormwater solids sampling by centrifuge and filter bag methods. While the centrifuge method was able to capture more of the fine-grained storm drain solids than the filter bags, the centrifuge sampling method was very difficult to use in monitoring variable stormwater flows (SAIC 2012d).

Additional activities in progress as of December 2012 include the following:

- In May 2012, Ecology prepared a response to Boeing's Evaluation of Highest Beneficial Groundwater Use at the Boeing EMF site and NBF. For the NBF, Ecology stated that a non-potability determination was unjustified at this time.

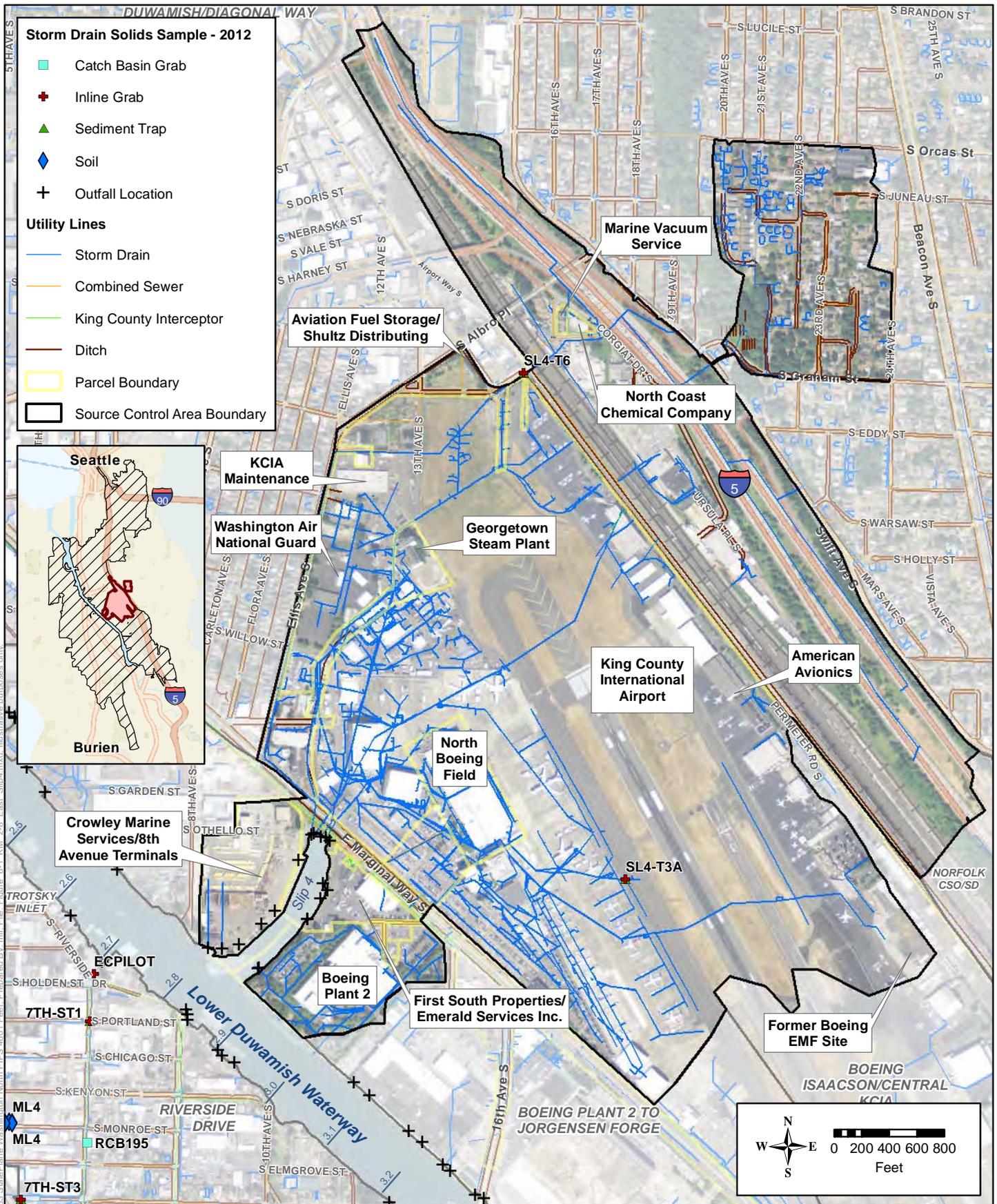
Boeing proposed using natural background concentrations of secondary Maximum Contaminant Limits (MCLs) as a basis for non-potability. In order to consider this, groundwater samples from uncontaminated areas must be used to establish natural background. Ecology stated that, in order to determine potability, Boeing will need to provide sufficient groundwater monitoring data from properly placed monitoring wells and an approved statistical analysis to establish natural background concentrations.

It is possible that the Washington Department of Health (WDOH) may require treatment of secondary inorganic MCL exceedances for new community water systems and new non-transient non-community water systems. If this is the case, Boeing will need to conduct a cost analysis to determine if groundwater treatment is not practicable at these sites. However, if treatment for exceedances of secondary MCLs is not required for individual private groundwater supply wells, the presence of naturally occurring secondary exceedances of MCLs in groundwater is not sufficient to determine non-potability of groundwater at these sites.

Given the level of public interested in the NBF site, Ecology will solicit public input before any final decision is made regarding groundwater potability (Ecology 2012c).

### **Former Boeing Electronics Manufacturing Facility**

- This facility is located just inside the EAA-3 source control area boundary (Figure 6-1). However, since the groundwater plume travels through EAA-4, in this report the updates for this facility are listed with EAA-4 (Section 7.3).



**Figure 6-1. Early Action Area 3:  
RM 2.8 East (Slip 4)**

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet; Prepared By: mlf; File: Figure 6-1\_RM\_2.8\_East\_Slip4.mxd; Illustrative purposes only.

## 7.0 Early Action Area 4 (Boeing Plant 2 to Jorgensen Forge)

The RM 2.8-3.7 East (EAA-4; Boeing Plant 2 to Jorgensen Forge) source control area is shown in Figure 7-1. This source control area includes stormwater that discharges to the LDW from private outfalls at Boeing Plant 2 and Jorgensen Forge, and from the public 16<sup>th</sup> Avenue S SD. Portions of central KCIA and the City of Tukwila right-of-way drainage on East Marginal Way S formerly discharged to the LDW in this area, through the KCIA-Jorgensen SD. This drainage was rerouted in December 2009 (Ecology 2011f). Stormwater in this area currently discharges to KCIA SD#2 (EAA-6).

<b>Location</b>	RM 2.8-3.7 East
<b>Chemicals of Concern</b>	PCBs, phthalates, PAHs, metals
<b>Data Gaps Evaluation</b>	June 2007 (E&E 2007a)
<b>SCAP</b>	December 2007 (Ecology 2007f)

Source control action items for the Boeing Plant 2 to Jorgensen Forge source control area are listed in Table 3-2. A total of 33 source control action items have been identified for this source control area; as of December 2012, 17 of these have been completed. Of the remaining action items, 10 are considered high priority.

### 7.1 Business Inspections

- Ecology conducted one inspection, at Boeing Plant 2, during the current reporting period (Appendix C).

### 7.2 Source Tracing

- SPU collected two sediment trap samples and one in-line solids sample in the KC-Jorgensen storm drain line before it was rerouted in 2009. The sediment trap was moved at that time to an upstream manhole location in the KCIA SD#2 basin.
- SPU has collected six in-line solids samples and two right-of-way catch basin samples in the 16<sup>th</sup> Avenue S SD basin. No samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps	In-line Solids	Right-of-Way CB Solids
Metals	Mercury			
	Zinc			

Chemical Class	Chemical	Sediment Traps	In-line Solids	Right-of-Way CB Solids
PCBs	PCBs, total			
Phthalates	BEHP			
	Butylbenzylphthalate			
	Dimethylphthalate			
Other SVOCs	2-Methylphenol			
	Benzoic acid			
	Benzyl alcohol			
	Phenol			
TPH	TPH-oil			

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

### 7.3 Facility-Specific Source Control Actions

#### Boeing Plant 2

Boeing is conducting RCRA Corrective Actions at Boeing Plant 2 under an Administrative Order on Consent, issued to Boeing in 1994 by EPA. This includes corrective actions for both the upland area and the sediment/bank areas.

In August 2011, EPA issued its Final Decision and Response to Comments for Plant 2 Sediments, containing the final remedy for the Duwamish Sediment Other Area and Southwest Bank and other Plant 2 sediment areas. The remedy is documented in the *Final Decisions and Response to Comments for Boeing Plant 2 Sediments* (USEPA 2011c).

<b>Current Operations</b>	Airplane parts manufacturing
<b>Historical Operations</b>	Same
<b>Address</b>	7755 East Marginal Way S
<b>Facility/Site ID</b>	2100 (Boeing Plant 2)
<b>Chemicals of Concern</b>	VOCs, PCBs, PAHs, metals, petroleum hydrocarbons
<b>Media Affected</b>	Groundwater, stormwater, soil, air, sediment

- A Section 404 Permit was obtained from the U.S. Army Corps of Engineers (USACE) on December 31, 2012. Dredging is scheduled to begin in early January 2013 (Arrigani 2013).
- Boeing submitted plans to the City of Seattle Department of Planning and Development to convert the Airgas site into a parking lot (Schmoyer 2013). The new parking layout will increase the impervious surface from 9,117 square feet to 12,555 square feet (Rupert Engineering 2012).

## Jorgensen Forge

The Jorgensen Forge site is divided into an upland portion and a sediment portion. Ecology is the lead for the upland cleanup and EPA is the lead for the sediment cleanup.

For the upland cleanup, Ecology and Jorgensen Forge Corporation negotiated an Agreed Order (DE-4127), effective July 12, 2007. The order requires Jorgensen Forge to evaluate existing data, identify potential ongoing sources of contaminants to sediment, and conduct additional investigations to fill identified data gaps (Ecology 2007c). Activities required under Agreed Order DE-4127 were completed in 2012. Ecology and Jorgensen Forge are negotiating a new Agreed Order to conduct an RI/FS and CAP for the upland area of the site.

<b>Current Operations</b>	Manufacture of steel forgings and rolled aluminum rings; processing of nickel, titanium, and specialized alloys
<b>Historical Operations</b>	Manufacture of structural steel, tractors, and road equipment; prefabricated steel cutting and distribution
<b>Address</b>	8531 East Marginal Way S
<b>Facility/Site ID</b>	2382 (Jorgensen Forge Corp) 36575469 (Jorgensen Forge Area 3 Gasoline)
<b>Chemicals of Concern</b>	Metals, PCBs, petroleum hydrocarbons, non-halogenated solvents
<b>Media Affected</b>	Soil, groundwater

From 2003 through 2012, sediment contamination at this site was addressed under EPA CERCLA Order No.10-2003-0001. In 2012, EPA and Earle M. Jorgensen negotiated a new Administrative Settlement Agreement, Order on Consent, and Statement of Work (USEPA 2012a). CERCLA Order No. 10-2013-0032 is expected to be implemented in 2013.

In December 2009, stormwater drainage from KCIA, which previously discharged to the LDW via the 24-inch KC-Jorgensen outfall, was rerouted to KCIA SD#2 in the Boeing Isaacson/Central KCIA (EAA-6) source control area. In February 2011, the 24-inch Tukwila SD was sealed at the upstream end to prevent discharge of stormwater runoff to this outfall from East Marginal Way S (Floyd|Snider 2011).

### Water Quality

In August 2011, Ecology's Water Quality Program issued Administrative Order No. 8682, requiring treatment to address benchmark exceedances.

- A treatment system and stormwater conveyance system was installed in late 2012 and is scheduled to go on-line in the middle of January 2013 (Wright 2013).

### Contaminated Sediments and Bank Soils

- Sampling conducted at the end of the Boeing/Jorgensen 24-inch boundary pipe (former KC-Jorgensen discharge) indicated that PCBs are present in soils and require removal. EPA continues to be the lead agency for the pipe outfall cleanup, which is scheduled to occur during the summer or fall of 2013, in sequence with the sediment and bank cleanup

currently scheduled for fall 2013. Sampling conducted to date is discussed in the *Geoprobe Investigation Summary Report* by Farallon and Anchor QEA, dated August 2012.

- In February 2012, EPA reviewed and approved the Jorgensen Forge Certification of Completion for the CERCLA Administrative Order on Consent. Also in February 2012, EPA issued a draft CERCLA Removal Implementation Administrative Settlement Agreement and Order on Consent with which to begin negotiations (USEPA 2012a).
- In November 2012, EPA issued a final Administrative Settlement Agreement, Order on Consent, and Statement of Work for the Jorgensen Forge Early Action Area Non-Time Critical Removal Action Implementation. In November 2012, a *Draft Basis of Design Report* was submitted to EPA for the Early Action Area cleanup.
- In September 2012, Jorgensen Forge settled with EPA for violations of the federal Emergency Planning and Community Right-to-Know Act. As part of their settlement, they filed the missing reports and agreed to pay a penalty of \$73,600 (USEPA 2012c).

### Former Boeing Electronics Manufacturing Facility

Under a Removal Action Settlement Agreement and Order on Consent between Boeing and EPA (2007), Boeing will characterize the EMF and groundwater plume, and develop an Engineering Evaluation/Cost Analysis for this site.

- In May 2012, Ecology prepared a response to Boeing's Evaluation of Highest Beneficial Groundwater Use at the Boeing EMF site and NBF.

<b>Current Operations</b>	Property leased to Boeing and subleased to UPS
<b>Historical Operations</b>	Prototype aircraft testing from 1940-1960s. Electronic circuit board manufacturing conducted during 1960s to 1982.
<b>Address</b>	7355 Airport Way S or 7355 Perimeter Rd S
<b>Facility/Site ID</b>	73142589
<b>Chemicals of Concern</b>	TCE, 1,2-dichloroethane (cis and trans isomers) and vinyl chloride
<b>Media Affected</b>	Soil contamination, groundwater

In their response, Ecology stated that the chloride and estimated total dissolved solids (TDS) in the groundwater wells located in the portion of the EMF site closest to the shoreline indicate that this groundwater is non-potable. Ecology also stated that additional TDS and hydraulic data need to be provided for this section of the EMF site, demonstrating that the groundwater near the shoreline is hydraulically connected to the LDW.

For the other portions of the EMF site, Ecology stated that a non-potability determination was unjustified at this time. Boeing proposed using natural background concentrations of secondary MCLs as a basis for non-potability. However, for this to be considered, groundwater samples from uncontaminated areas must be used to establish natural background. In order to determine potability, Boeing will need to provide sufficient groundwater monitoring data from properly placed monitoring wells, and an approved statistical analysis to establish natural background concentrations.

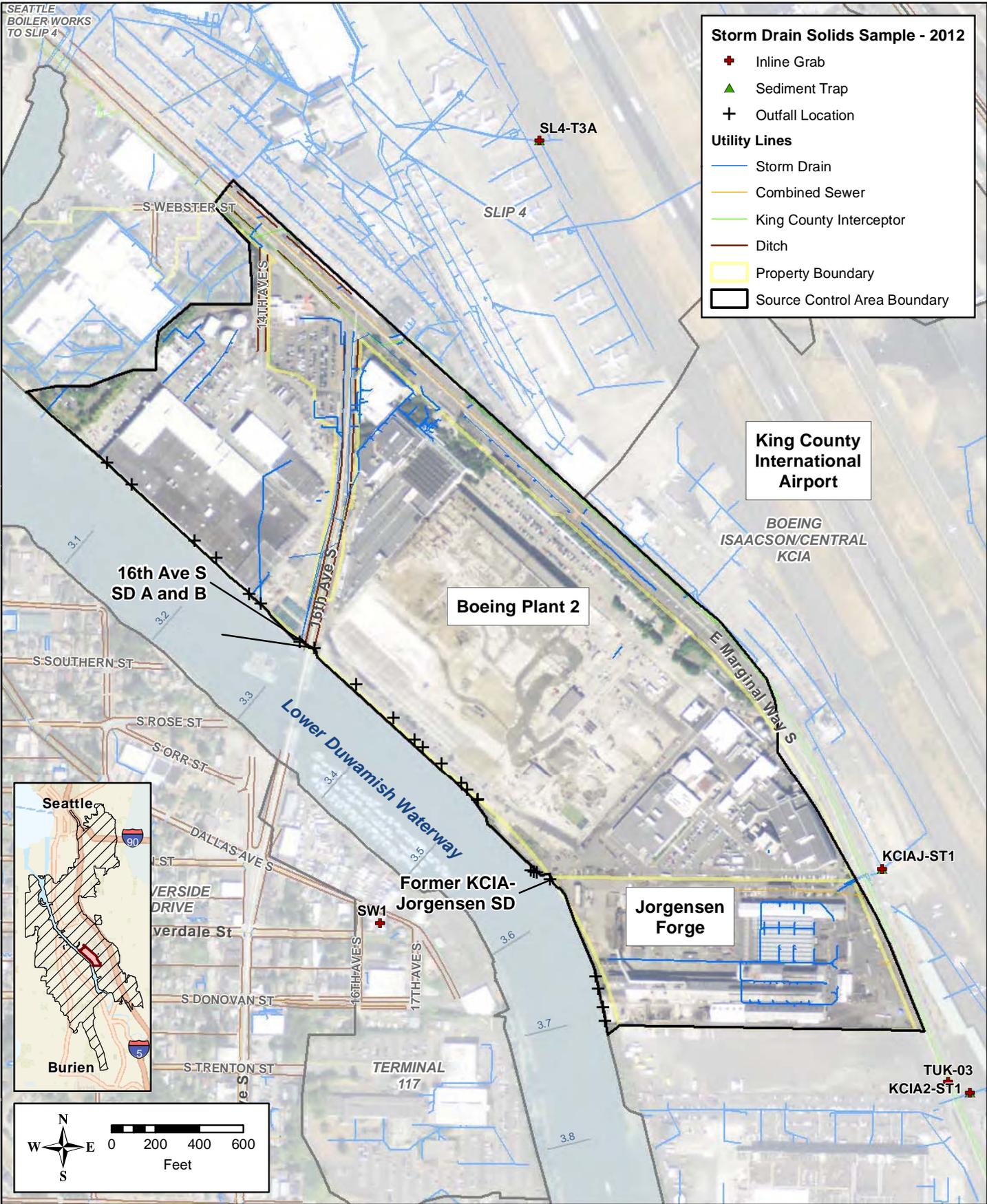
WDOH may require treatment of secondary inorganic MCL exceedances for new community water systems and new non-transient non-community water systems. A cost

analysis would need to be completed to determine if groundwater treatment is not practicable at these sites. If however, treatment for exceedances of secondary MCLs is not required for individual private groundwater supply wells, the presence of naturally occurring secondary exceedances of MCLs in groundwater is not sufficient to determine non-potability of groundwater at these sites.

EPA will determine the need for public input on groundwater potability at the EMF site (Ecology 2012c).

- Boeing plans to continue Enhanced Reductive Dechlorination injections at EMF in March 2013.

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Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared by: File: Figure 7-1\_RM 2.8 to 3.7\_East\_BP2 to Jorgensen.mxd; Illustrative purposes only.



## 8.0 Early Action Area 5 (Terminal 117)

The RM 3.4-3.8 West (EAA-5; Terminal 117) source control area is shown in Figure 8-1. This source control area includes Port of Seattle's Terminal 117, South Park Marina, and Boeing's South Park facility.

<b>Location</b>	RM 3.4-3.8 West
<b>Chemicals of Concern</b>	PCBs, PAHs, phenol, phthalates
<b>Data Gaps Evaluations</b>	Terminal 117: September 2003 (Windward 2003c) South Park Marina: June 2007 (SAIC 2007g)
<b>SCAP</b>	July 2005 (Ecology 2005)

Source control action items for the Terminal 117 source control area are listed in Table 3-2. A total of 32 source control action items have been identified for this source control area; as of December 2012, 24 of these have been completed. Of the remaining action items, two are considered high priority.

### 8.1 Business Inspections

- Ecology conducted six inspections at two facilities (Boeing South Park and South Park Bridge) during the current reporting period (Appendix C).
  - Ecology determined that Boeing South Park has industrial activities, equipment, and/or materials exposed to stormwater and is not eligible for a CNE.

### 8.2 Source Tracing

- To date, SPU has collected four onsite catch basin samples (three discharging to the separated storm drain system and one discharging to the combined sewer system), nine right-of-way catch basin samples (two discharging to the separated storm drain system and seven discharging to the combined sewer system), and one in-line solids sample (discharging to the combined sewer system) within this source control area. One in-line solids sample was collected during the current reporting period.
  - BEHP and dimethylphthalate exceeded their respective CSL/2LAET values in sample SW-1. This sample was collected in a storm drain line that discharges to the combined sewer system.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An "X" indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An "X" surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 8-1. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	In-Line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Lead			
	Mercury			
	Zinc	×		
PCBs	PCBs, total	×		
PAHs	LPAH			
	HPAH			
Phthalates	BEHP	☒		
	Butylbenzylphthalate	×		
	Diethylphthalate			
	Dimethylphthalate	☒		
Other SVOCs	2-Methylnaphthalene			
	4-Methylphenol			
	Benzoic acid			
	Benzyl alcohol			
	Dibenzofuran			
	Hexachlorobenzene			
TPH	TPH-diesel			
	TPH-oil			

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

### 8.3 Facility-Specific Source Control Actions

#### Terminal 117 and Adjacent Streets

In June 2011 EPA signed an Administrative Settlement Agreement and Order on Consent with the Port of Seattle and the City of Seattle to implement cleanup actions at Terminal 117 (USEPA 2011b). The order requires the Port and the City to implement EPA’s cleanup decision for the Terminal 117 EAA. The cleanup includes the marine sediments adjacent to Terminal 117, the former industrial

<b>Current Operations</b>	Port of Seattle operations (International Inspection, Construction Services)
<b>Historical Operations</b>	Asphalt manufacturing; untreated lumber storage
<b>Address</b>	8700 Dallas Avenue S
<b>Facility/Site ID</b>	37657495 (Malarkey Asphalt Company)
<b>Chemicals of Concern</b>	PCBs
<b>Media Affected</b>	Soil, groundwater, sediment

facility on terminal property, and 10 acres of soil in the nearby streets and residential area (USEPA 2011a).

- In September 2012, EPA held a community open house to discuss the cleanup at and around T-117. Representatives from EPA, Port of Seattle, City of Seattle, and Duwamish River Cleanup Coalition provided updates on the project and answered questions about upcoming construction activities related to T-117 (Williams 2012).
- The City of Seattle started cleanup of the yards adjacent to T-117 in 2012. This work is scheduled to be complete in 2013. The Port is scheduled to begin the T-117 sediment and upland cleanup in 2013. The City is scheduled to begin the adjacent street cleanup in 2014.
- On June 10, 2012, the Port's contractor collected samples and tested surface solids (including goose droppings) from paved areas adjacent to catch basins at T-117. The surface solids represented the accumulation over a period of approximately six months. The solids sampling activities were performed in response to EPA's verbal request to collect additional analytical data for the project site. The surface solids samples collected from areas adjacent to the catch basins were analyzed for petroleum hydrocarbons (diesel-range and residual-range organics), PCBs, and PAHs. The sample composited from the goose fecal solids was analyzed for PCBs. Petroleum hydrocarbons were detected in both solids samples from outside the catch basins. Eighteen PAHs were detected, including seven cPAHs. PCBs (Aroclor 1260) were detected in both of the solids samples adjacent to the catch basins, at concentrations exceeding the LAET for OC normalized total PCBs in sediment (0.13 mg/kg). PCBs were also detected in the goose fecal solids sample, although at a much lower concentration than detected in the catch basin adjacent solids (Sealaska Environmental 2012).

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**Figure 8-1. Early Action Area 5:  
RM 3.4-3.8 West (Terminal 117)**

## 9.0 Early Action Area 6 (Boeing Isaacson/Central KCIA)

The RM 3.7-3.9 East (EAA-6; Boeing Isaacson/Central KCIA) source control area includes the Boeing Thompson and Isaacson properties adjacent to the LDW (shown in Figure 9-1) and the portions of central KCIA that are within the drainage basin for KCIA SD#2/PS45 EOF (Figure 9-2). Action items for this source control area are listed in Table 3-2.

<b>Location</b>	RM 3.7-3.9 East
<b>Chemicals of Concern</b>	Arsenic, PAHs, phthalates, PCBs, benzoic acid, benzyl alcohol, dibenzofuran, other metals
<b>Data Gaps Evaluation</b>	May 2008 (SAIC 2008b)
<b>SCAP</b>	May 2009 (Ecology 2009a)

Action items for the Boeing Isaacson/Central KCIA source control area are listed in Table 3-2. A total of 28 source control action items have been identified for this source control area; as of December 2012, nine of these have been completed and one has been canceled. Of the remaining action items, three are considered high priority.

### 9.1 Business Inspections

- Ecology conducted one inspection in this source control area, at the Quad 7 Construction Project at KCIA, during the current reporting period (Appendix C).

### 9.2 Source Tracing

- EPA collected a storm drain solids sample at one location (TUK-03) in the KCIA SD#2 basin in 2011 (KTA 2012a). Two chemicals exceeded the CSL/2LAET: 1,2-dichlorobenzene (0.34 mg/kg DW) and 2,4-dimethylphenol (0.040 mg/kg DW). Arsenic, phenol, and hexachlorobutadiene exceeded the SQS/LAET.
- To date, SPU has collected five sediment trap samples, seven in-line solids samples, one onsite catch basin sample, and one right-of-way catch basin sample in the Central KCIA storm drain basin. During the current reporting period, two sediment trap samples and two in-line solids samples were collected in this drainage basin.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 9-2. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic				
	Lead	☒			
	Mercury				
	Zinc	☒	×		
PCBs	PCBs, total	☒	☒		
PAHs	LPAH	☒			
	HPAH	☒			
	cPAH	☒	☒		
Phthalates	BEHP				
	Butylbenzylphthalate	×	×		
	Dimethylphthalate				
Other SVOCs	2,4-Dimethylphenol				
	Dibenzofuran				
	Hexachlorobutadiene				
TPH	TPH-oil	☒			

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for "Other SVOCs" from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

### 9.3 Facility-Specific Source Control Actions

#### Boeing Isaacson/Thompson

On April 23, 2010, Boeing and Ecology entered into Agreed Order No. DE-7088, to conduct an RI/FS and prepare a draft CAP (Ecology 2010c). Ecology approved an RI/FS work plan for this site in September 2011 (Landau 2011).

- Boeing met with Ecology in May 2012 to discuss the development of preliminary cleanup levels for the draft RI report. Boeing also provided a response to Ecology's request for additional sediment sample analyses. Boeing submitted the analytical results for stormwater samples from manhole MH32 and MH80. The work planned for June 2012

<b>Current Operations</b>	Vacant (Boeing Isaacson); office space/storage (Boeing Thompson)
<b>Historical Operations</b>	Steel forging and fabrication, sawmill, wood preserving, aircraft manufacturing/assembly
<b>Address</b>	8541 to 8811 East Marginal Way S
<b>Facility/Site ID</b>	2218 (Boeing Isaacson Thompson) 1138721 (Boeing Isaacson Property) 83767996 (Boeing Thompson) 4274402 (Boeing Thompson Site)
<b>Chemicals of Concern</b>	Arsenic, lead, silver, zinc
<b>Media Affected</b>	Soil, groundwater, stormwater

included conducting the third quarterly groundwater monitoring event, collecting a seep sample, meeting with Ecology to continue discussion of preliminary cleanup levels, and preparing the draft RI report (Landau 2012c).

- In October 2012, Boeing submitted investigation summary tables for groundwater and soil sample results collected at the Port of Seattle property (between the western Boeing property line and the LDW). Ecology’s site manager noted that there are two sources of metals contamination in the fill, forge slag (usually high barium) and arsenic-chrome-zinc wood treating waste, which may explain why the arsenic concentrations do not always track with the other metals (Bet 2012).
- Boeing completed the RI sampling in 2012. The draft RI report is due to Ecology in February 2013.
- Jonathon Maas of the EPA compiled detailed notes on Mineralized Cell Wood Preserving Company. The notes include a description of the process used by Mineralized Cell Wood Preserving Company that involved the low-pressure injection of a water-based solution of arsenic and a suite of metal sulfates into green timbers. There were two of these plants on the LDW during the 1930s and 1940s. One plant was located just north of Slip 5, and the other was located just west of Glacier Bay on the west side of the LDW. Elevated levels of arsenic and metals contamination resulting from these operations were observed at the locations of the former plants (USEPA 2012b).
- Ecology started discussions with the Port of Seattle regarding their property along the shore of the Isaacson property. Boeing and the Port completed a preliminary investigation for metals in soil and groundwater on the Port property (see above). The Port property contains the same high concentrations of metals as the adjacent Boeing property. The parties continue to have discussions about the Port’s participation in the upland site cleanup.

### King County International Airport

- In 2012, KCIA completed quarterly groundwater compliance monitoring. Due to the impact of redevelopment at the Quad 7 site, the final report will be completed in spring 2013. Final results from four quarters of groundwater monitoring showed no exceedances of MTCA standards for petroleum hydrocarbons.

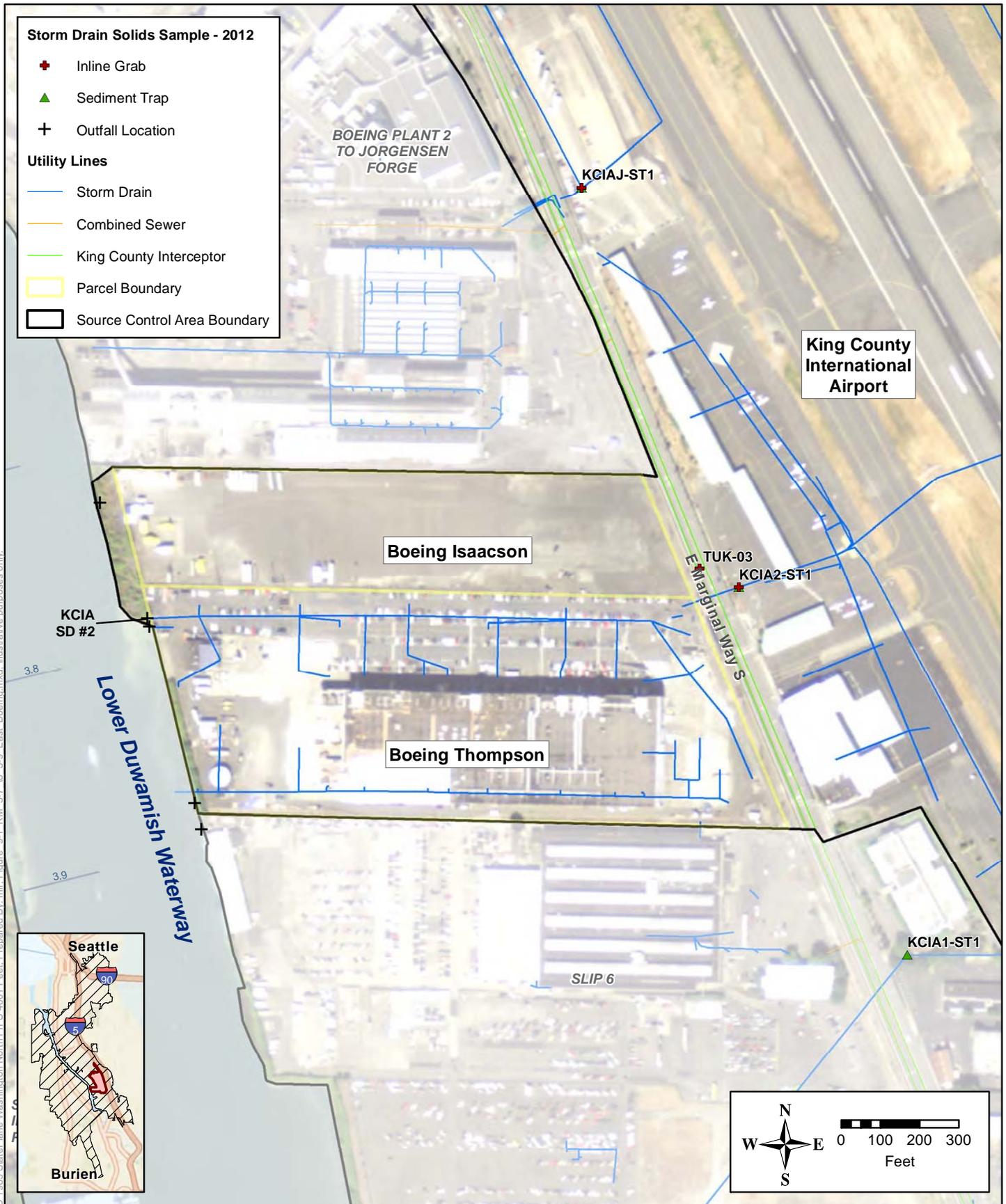
<b>Current Operations</b>	General aviation airport and related activities
<b>Historical Operations</b>	Military airport operations; general aviation
<b>Address</b>	7277 Perimeter Road S (main terminal); various tenant addresses
<b>Facility/Site ID</b>	NA
<b>Chemicals of Concern</b>	PAHs, phthalates, copper, zinc, petroleum hydrocarbons, PCBs
<b>Media Affected</b>	Stormwater, groundwater

- KCIA completed the Taxiway Alpha Rehabilitation Project in 2012, with the installation of a water quality vault north of the pump station and the repair, replacement, or abandonment of damaged stormwater drainage lines in the central area. The system became operational in November 2012. The project was expected to reduce groundwater

infiltration into the storm drain system, and potentially reduce iron bacteria precipitate, which affects turbidity.

- On October 2012, central catch basins in the KCIA central basin were cleaned during the final completion of the Taxiway Alpha Project. Separate stormwater pipe repair projects are planned for summer 2013.
- In August 2012, the south pump station vault was sampled for solids and cleaned. The south pump station samples showed no exceedances of screening levels for PCBs, PAHs, metals, phthalates, and TPH. In addition, the south pump station discharge pipe was cleaned in November 2012.
- In October 2012, four OWSs at the central basin and upgradient of the south pump station were sampled and cleaned. Stormwater solids from the OWSs were above screening levels; however, these structures are BMPs, designed to collect sediments and petroleum hydrocarbons to reduce the transport of contaminants downstream. According to KCIA, the 2012 SPU data indicated that the OWSs were functioning properly to reduce the migration of contaminants from KCIA to the LDW.
- Ecology updated KCIA's ISGP to include all industrial activities at the airport. KCIA subsequently updated its SWPPP to address these additional activities. Under the updated permit, KCIA will monitor stormwater in each of the airport's four drainage basins that include the north area (Slip 4 basin), central area (Former Slip 5 basin), south-central area (Slip 6 basin), and south area (Norfolk CSO basin).

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mfr. Figure 9-1. RM 3-7 to 3-9. East. Boeing.mxd. Illustrative purposes only.



- Storm Drain Solids Sample - 2012**
- ✚ Inline Grab
  - ▲ Sediment Trap
  - ✚ Outfall Location
- Utility Lines**
- Storm Drain
  - Combined Sewer
  - King County Interceptor
  - ▭ Parcel Boundary
  - ▭ Source Control Area Boundary

King County International Airport

Boeing Isaacson

Boeing Thompson

BOEING PLANT 2 TO JORGENSEN FORGE

KCIA SD #2

KCIAJ-ST1

E Marginal Way S

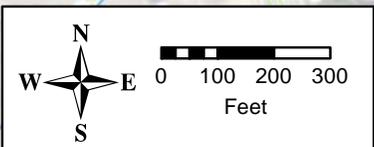
TUK-03

KCIA2-ST1

KCIA1-ST1

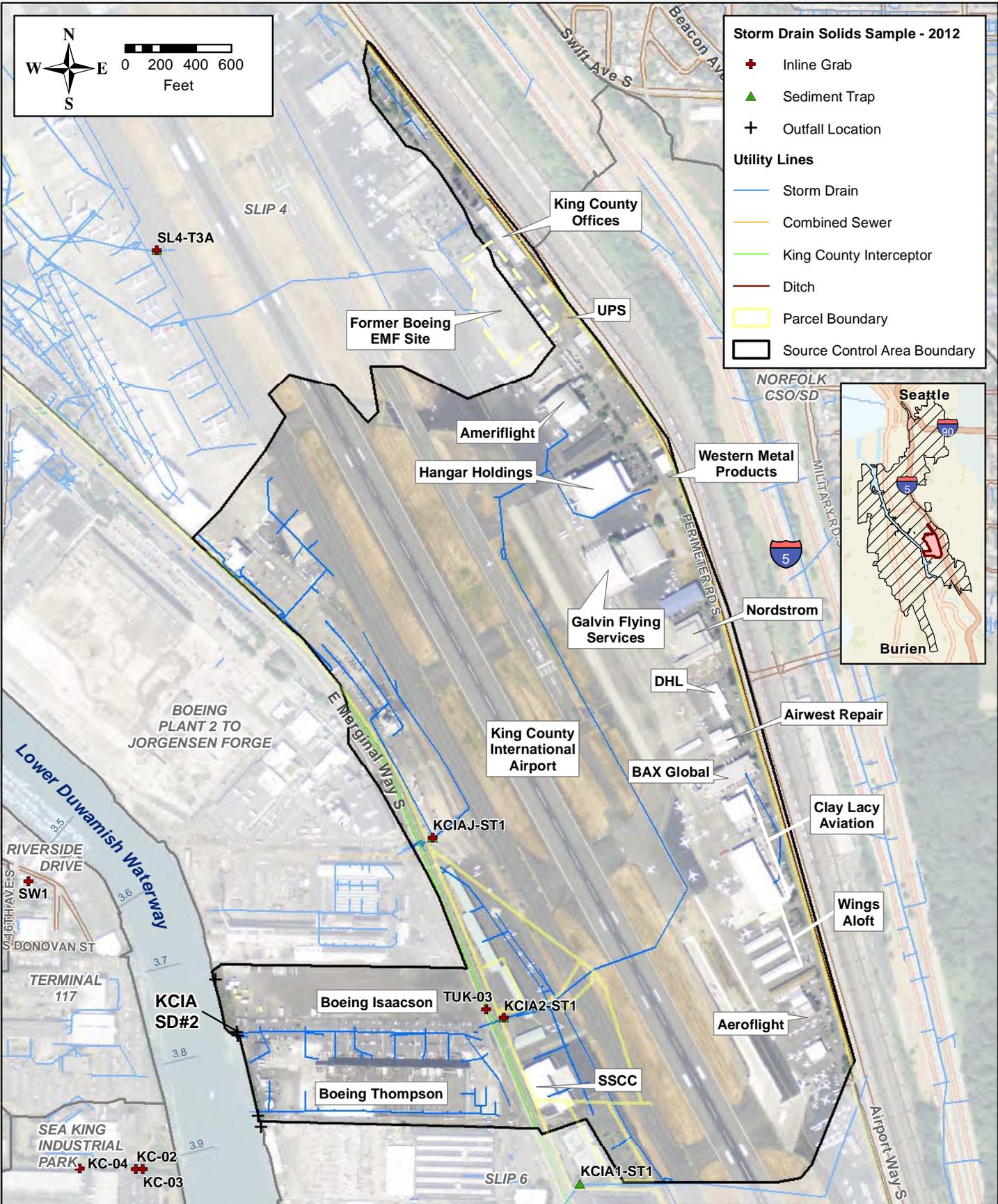
SLIP 6

Lower Duwamish Waterway



**Figure 9-1. Early Action Area 6:  
RM 3.7-3.9 East (Boeing Isaacson/Central KCIA)  
Boeing Thompson and Isaacson Properties**





Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mfr. File: Figure 9-2\_RM\_3-7 to 3-9\_East\_KCIA.mxd. Illustrative purposes only.

**Figure 9-2. Early Action Area 6:  
Central KCIA**



## 10.0 Early Action Area 7 (Norfolk CSO/SD)

The portion of the RM 4.9 East (EAA-7; Norfolk CSO/SD) source control area that is adjacent to the LDW is shown in Figure 10-1; the Norfolk SD basin is shown in Figure 10-2.

<b>Location</b>	RM 4.9 East
<b>Chemicals of Concern</b>	PCBs, PAHs, phthalates, hexachlorobenzene, metals
<b>Data Gaps Evaluation</b>	September 2007 (E&E 2007b)
<b>SCAP</b>	September 2007 (Ecology 2007d)

Source control action items for the Norfolk CSO/SD source control area are listed in Table 3-2. A total of 42 source control action items were identified for this source control area; as of December 2012, 10 of these have been completed and one has been canceled. Of the remaining action items, two are considered high priority.

### 10.1 Business Inspections

- SPU conducted a total of 29 inspections at 12 facilities in the Norfolk CSO/SD/EOF basin during the current reporting period, including 11 initial inspections and 18 follow-up inspections (Appendix B). One facility (Wall and Ceiling, 9830 40<sup>th</sup> Avenue S) was identified by SPU as not in compliance as of the end of December 2012.
- Ecology conducted two inspections at two facilities during the current reporting period (Appendix C).
  - Ecology noted several violations at Northwest Gourmet Foods (9620 Martin Luther King Jr. Way S) and indicated that they were not in compliance with their NPDES permit.

### 10.2 Source Tracing

- EPA collected storm drain solids samples in the S 96<sup>th</sup> Street SD basin during 2011 and 2012. In-line samples were collected at four locations on August 23, 2011, seven locations on March 27, 2012, and an additional two locations on September 19, 2012 (Figure 10-2). BEHP (1.9 to 49 mg/kg DW) and total PCBs (0.25 to 93 mg/kg DW) significantly exceeded screening levels.
  - Total PCBs exceeded the 2LAET at three sampling locations: TUK-16, collected from a swale on the southwest side of the KCIA runway (93 mg/kg DW); TUK-15, collected from a KCIA manhole (12.3 mg/kg DW), and TUK-18 (4.4 mg/kg DW).
  - BEHP concentrations were highest at TUK-18 (49 mg/kg DW), TUK-15 (24 mg/kg DW), and TUK-09, a manhole along East Marginal Way S (19 mg/kg DW).
- To date, SPU has collected 23 sediment trap samples, 38 in-line solids samples, nine onsite catch basin samples, and 16 right-of-way catch basin samples in the Norfolk CSO/SD/EOF basin. During the current reporting period, three sediment trap samples,

four in-line solids samples, and one onsite catch basin sample were collected in this drainage basin (Appendix E).

- A catch basin at 9883 40<sup>th</sup> Avenue S (CB78 on Figure 10-2) contained high concentrations of PAHs, including total low molecular weight (LPAH) at 18 mg/kg DW, total high molecular weight PAH (HPAH) at 192 mg/kg DW (which is 11 times the 2LAET), and total cPAH at 26 mg/kg DW (which is 26 times the 2LAET). In addition, this sample contained BEHP at 46 mg/kg DW.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 10-2. Storm drain screening levels are defined in Section 3.2

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic				
	Copper				
	Lead				
	Mercury		☒		
	Zinc	×	☒	☒	
PCBs	PCBs, total		☒	×	
PAHs	LPAH			☒	
	HPAH		☒	☒	
	Total cPAH		☒	☒	
Phthalates	BEHP	×	☒	☒	
	Butylbenzylphthalate	×	☒	×	
	Dibutylphthalate				
	Diethylphthalate				
	Dimethylphthalate		☒	×	
	Di-n-butylphthalate				
	Di-n-octylphthalate		☒		
Other SVOCs	1,2-Dichlorobenzene				
	1,2,4-Trichlorobenzene				
	2,4-Dimethylphenol				
	4-Methylphenol		☒		
	Benzoic acid		☒		
	Benzyl alcohol		☒		
	Dibenzofuran				

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
	Hexachlorobenzene				
	Hexachlorobutadiene				
	N-Nitrosodiphenylamine		☒		
	Pentachlorophenol				
	Phenol				
TPH	TPH-diesel				
	TPH-oil		☒	☒	

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for "Other SVOCs" from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

### 10.3 Facility-Specific Source Control Actions

#### Boeing Developmental Center (South Portion)

The southern portion of the Boeing Developmental Center (BDC) is located in this source control area. The central portion of the BDC is discussed in Section 19 (Boeing Developmental Center source control area); the northern portion of the BDC is discussed in Section 18 (Slip 6 source control area).

A removal action was implemented in the LDW immediately offshore of the BDC south storm drain outfall in

2003; the removal action was performed by Boeing under Ecology's VCP. Post-removal monitoring is being conducted to evaluate the effectiveness of source control measures that have been implemented in the south storm drain system.

<b>Current Operations</b>	Research and development
<b>Historical Operations</b>	Aircraft manufacturing
<b>Address</b>	9725 East Marginal Way S
<b>Facility/Site ID</b>	4581384 (Boeing Development Center Norfolk) 2101 (Boeing A&M Developmental Center)
<b>Chemicals of Concern</b>	PCBs, metals, solvents, petroleum hydrocarbons, SVOCs
<b>Media Affected</b>	Soil, groundwater, stormwater, sediment

In March 2012, Boeing submitted the 2011 Annual Sampling Report for post-removal monitoring associated with the south storm drain system at BDC (Calibre 2012). The post-removal monitoring consisted of annual sampling of backfill material installed during the September 2003 sediment removal work that was completed near that south storm drain outfall. The purpose of this sampling was to evaluate the source control measures within the south storm drain system by monitoring PCB concentrations in the backfill material over time. The results of this sampling showed that sample S1-041111 was above the SQS with a TOC-normalized total PCB concentration of 23 mg/kg OC,

and the duplicate sample (S4-041111) was also above the SQS with a concentration of 15 mg/kg OC. Both the primary sample and the duplicate sample from the S-1 location were below the CSL (65 mg/kg OC). The other two sampling locations had PCB concentrations below the SQS.

- This report also included the annual sampling of storm drain solids in the discharge water at the last manhole before the south storm drain outfall. In addition, Boeing also performed annual sampling of storm drain solids from the manhole located upstream of the Vortechincs sediment trap, and sampling of accumulated solids within the Vortechincs sediment trap (Calibre 2012).
- In August 2012, Boeing conducted annual sampling in the south storm drain system at the BDC. The results of the 2012 annual sampling are expected in 2013 (Boeing 2013).
- The next round of storm drain system sampling is scheduled for fall 2013. The Vortechincs 9000 sediment trap unit is scheduled to be serviced during late summer or fall of 2013 (Boeing 2013).

**Boeing Military Flight Center**

- In August 2012, Boeing collected a solids sample from an OWS at the MFC. The sampling results will be summarized in a 2013 annual report.
- Solids samples were collected from storm drain catch basins near and around the MFC by EPA in September 2012. This sampling also included sampling of soil in a drainage swale located east of the MFC on King County Airport property.

<b>Current Operations</b>	Flight line support, including aircraft storage, preparation for flight, general servicing, maintenance, and repair
<b>Historical Operations</b>	Unknown
<b>Address</b>	10002 East Marginal Way S
<b>Facility/Site ID</b>	7711519
<b>Chemicals of Concern</b>	PCBs
<b>Media Affected</b>	Stormwater

The sample results showed that PCBs were detected in several samples. The samples were also analyzed for metals, SVOCs, TPH, and conventional parameters (organic carbon and grain size). A sample was collected from a catch basin on the MFC, a drainage swale just east of the MFC and a catch basin on King County property to the east. The soil sample from the drainage swale exceeded the CSL/2LAET for PCBs; the drainage swale is located on KCIA property and a quantity of fill material was placed east of the swale as part of re-grading the KCIA property in late 2011.

Boeing plans to contact KCIA to begin working on access and a plan to investigate the swale area so that impacted solids can be removed as needed. This work is now in the planning stage and a schedule will be prepared and provided to Ecology in consultation with KCIA.

Source control work associated with the swale area is expected to include sampling along the swale, evaluation of piping connections to an existing OWS in the immediate area, and debris/solids removal from the drainage swale (Boeing 2013).

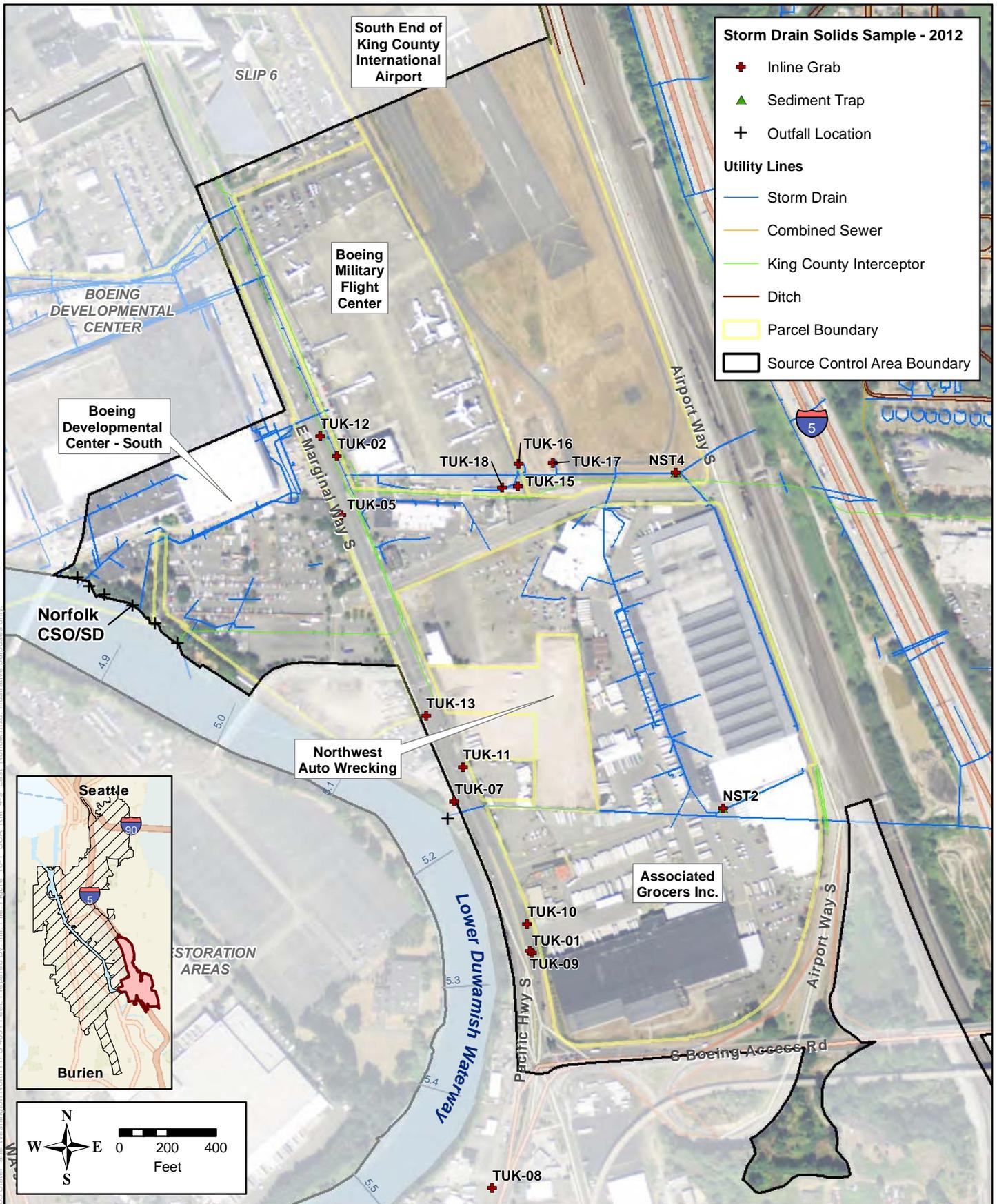


Figure 10-1. Early Action Area 7:  
RM 4.9 East (Norfolk CSO/SD)

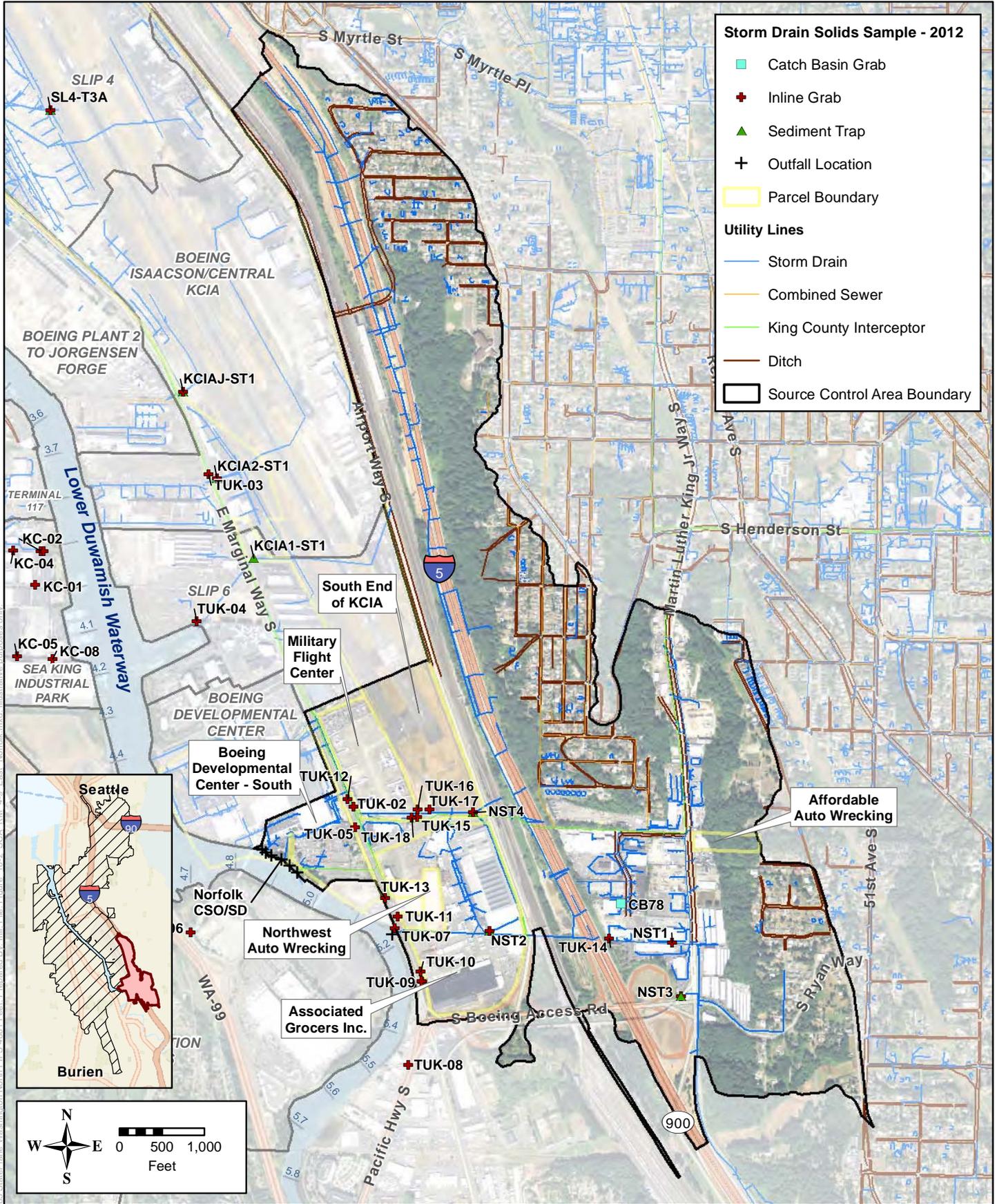


Figure 10-2. Early Action Area 7: Norfolk CSO/SD

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared by mfr. File: Figure 10-2\_SCA\_RM\_4-9\_East\_Norfolk.mxd. Illustrative purposes only.

## 11.0 RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)

The RM 0.0-0.1 East (Spokane Street to Ash Grove Cement) source control area is shown in Figure 11-1. No public storm drain outfalls are located within RM 0.0-0.1 East.

<b>Location</b>	RM 0.0-0.1 East
<b>Chemicals of Concern</b>	Metals, PAHs, phthalates, PCBs
<b>Data Gaps Evaluation</b>	December 2008 (E&E 2008c)
<b>SCAP</b>	June 2009 (Ecology 2009e)

Source control action items for the Spokane Street to Ash Grove Cement source control area are listed in Table 3-3. A total of 13 source control action items were identified in the SCAP; as of December 2012, one of these has been completed. Of the remaining action items, six are considered high priority.

### 11.1 Business Inspections

- No business inspections were conducted in this source control area during the current reporting period.

### 11.2 Source Tracing

- No source tracing samples have been collected in this source control area.

### 11.3 Facility-Specific Source Control Actions

#### Ash Grove Cement Company

- The Seattle Department of Planning and Development reviewed a Master Use Permit Application for the Ash Grove Cement Company maintenance dredging in October 2012. Ash Grove Cement submitted a land use application to conduct maintenance dredging of up to 600 cubic yards of

<b>Current Operations</b>	Cement manufacturer; concrete plant; produces Type I, Type II, and Type III Portland cement
<b>Historical Operations</b>	Cement manufacturer since 1928
<b>Address</b>	3801 East Marginal Way S
<b>Facility/Site ID</b>	2142
<b>Chemicals of Concern</b>	PAHs, metals, phthalates, SVOCs, asbestos, PCBs
<b>Media Affected</b>	Soil, groundwater

accumulated sand, gravel, and limestone at the cement plant's barge off-loading facility. The purpose of this project is to recover spilled aggregate at the end of the offloading conveyor and to maintain safe barge operation depth. USACE permitted six maintenance dredging actions within the same footprint since 2003. The State Environmental

Protection Agency (SEPA) checklist for the proposed project was submitted along with the permit application. Comments were accepted through November 7, 2012 (Seattle DPD 2012a).



## 12.0 RM 0.9-1.0 East (Slip 1)

The RM 0.9-1.0 East (Slip 1) source control area is shown in Figure 12-1. No public storm drain outfalls are located within RM 0.9-1.0 East.

<b>Location</b>	RM 0.9-1.9 East
<b>Chemicals of Concern</b>	Metals, PAHs, BEHP, PCBs, dioxins/furans
<b>Data Gaps Evaluation</b>	August 2008 (SAIC 2008c)
<b>SCAP</b>	May 2009 (Ecology 2009c)

Source control action items for the Slip 1 source control area are listed in Table 3-3. A total of 19 source control action items were identified in the SCAP; as of December 2012, two of these have been completed. Of the remaining action items, five are considered high priority.

### 12.1 Business Inspections

- No business inspections were conducted in this source control area during the current reporting period.

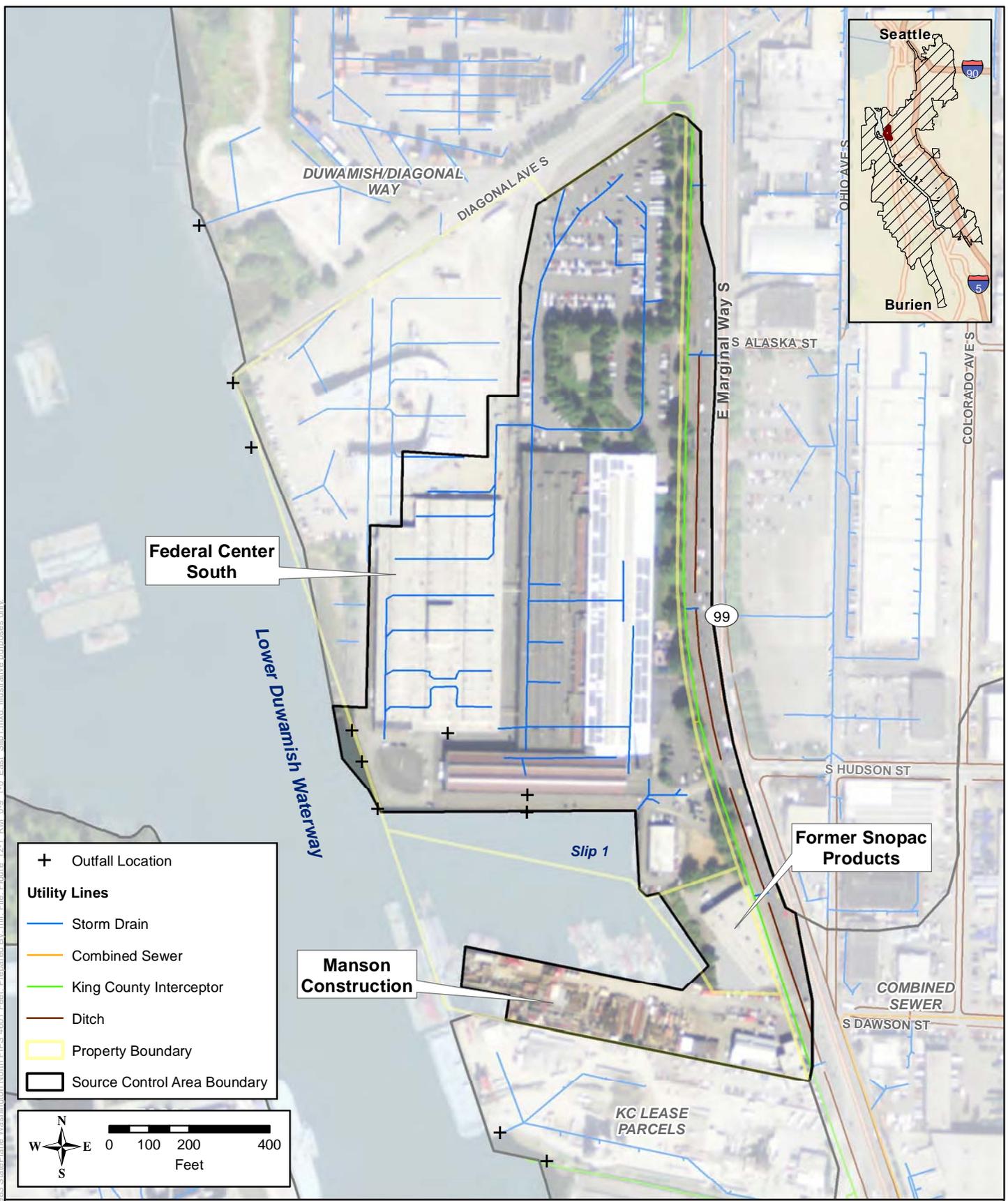
### 12.2 Source Tracing

- No source tracing samples have been collected in this source control area.

### 12.3 Facility-Specific Source Control Actions

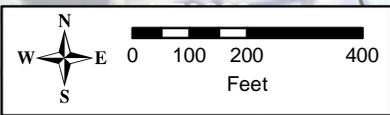
- No facility-specific source control actions were conducted in this source control area during the current reporting period.

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Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet; Prepared By: mlf; File: Figure 12-1\_RM\_0-9\_1-0\_East\_Slip1.mxd; Illustrative purposes only.

- ⊕ Outfall Location
- Utility Lines**
- Storm Drain
- Combined Sewer
- King County Interceptor
- Ditch
- Property Boundary
- Source Control Area Boundary



**Figure 12-1. RM 0.9-1.0 East:  
Slip 1 Source Control Area**



## 13.0 RM 1.0-1.2 East (King County Lease Parcels)

The RM 1.0-1.2 East (King County Lease Parcels) source control area is shown in Figure 13-1. The Brandon CSO discharges to the LDW within this source control area.

<b>Location</b>	RM 1.0-1.2 East
<b>Chemicals of Concern</b>	PCBs, PAHs, mercury, BEHP, dioxins/furans, organo-tin compounds
<b>Data Gaps Evaluation</b>	June 2010 (SAIC 2010a)
<b>SCAP</b>	January 2011 (Ecology 2011a)

Source control action items for the King County Lease Parcels source control area are listed in Table 3-3. A total of 24 source control action items were identified in the SCAP; as of December 2012, none of these have been completed. Of the remaining action items, eight are considered high priority.

### 13.1 Business Inspections

- Ecology conducted 10 stormwater assessments at 10 facilities in the S Brandon Street CSO basin during this reporting period. No other business inspections were conducted in this source control area during the current reporting period.

### 13.2 Source Tracing

- In 2012, King County collected two in-line grab samples in the Brandon CSO basin. One sample was from the Brandon Regulator station and one was from the outfall structure. Validated data were not available at the time this Source Control Status Report was prepared.
- In 2012 King County collected sediment trap samples at three locations in the Brandon CSO basin. Validated data were not available at the time this Source Control Status Report was prepared.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). Storm drain screening levels are defined in Section 3.2.

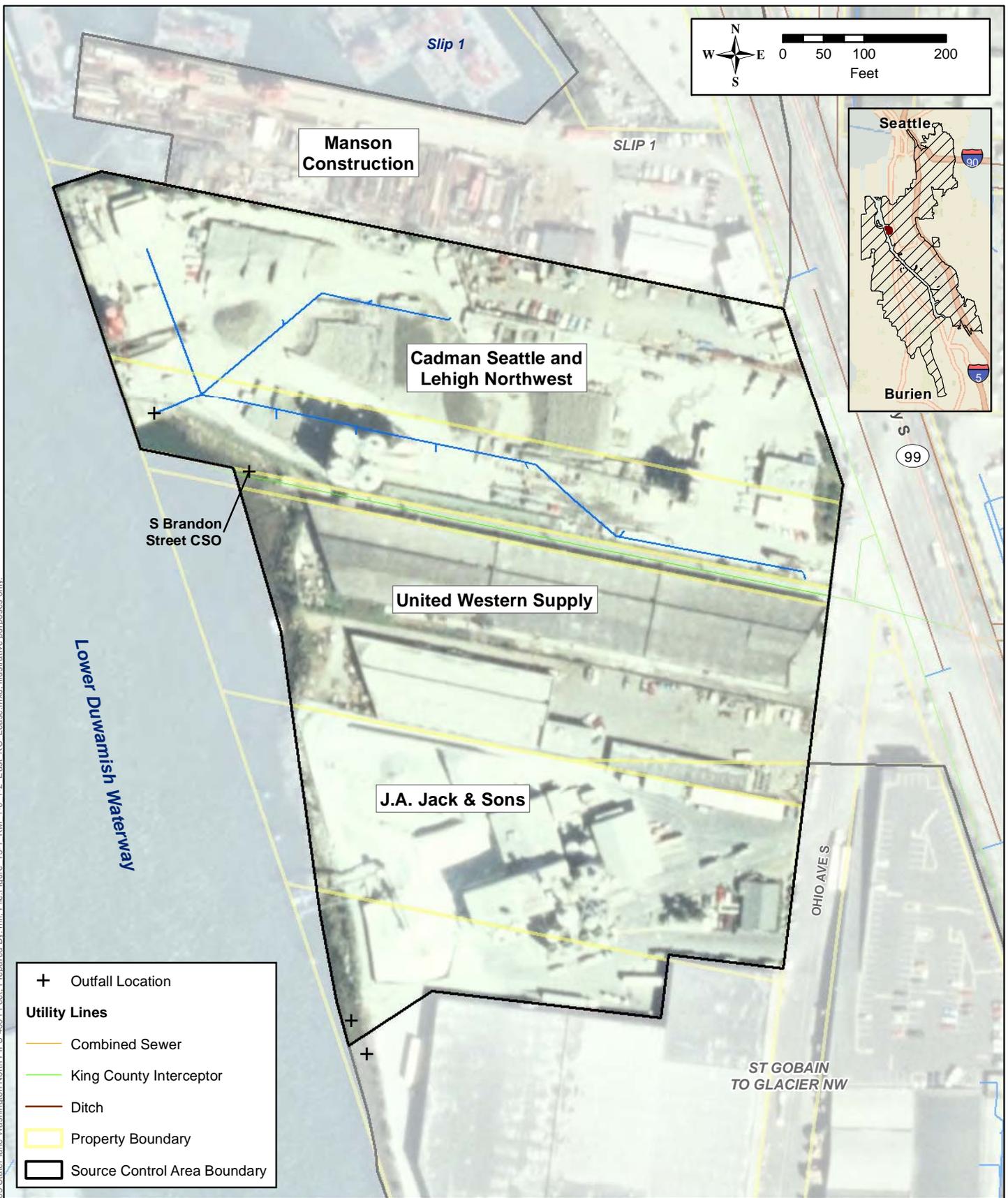
Chemical Class	Chemical	Right-of-Way CB Solids
Metals	Zinc	
PCBs	PCBs, total	
PAHs	HPAH	
Phthalates	BEHP	
	Butylbenzylphthalate	

Chemical Class	Chemical	Right-of-Way CB Solids
TPH	TPH-diesel	
	TPH-oil	

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

### 13.3 Facility-Specific Source Control Actions

- No facility-specific source control actions were conducted in this source control area during the current reporting period.



Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure\_13-1\_RM\_1-0\_1-2\_East\_KC\_Lease.mxd. Illustrative purposes only.

**Figure 13-1. RM 1.0-1.2 East:  
King County Lease Parcels  
Source Control Area**



## 14.0 RM 1.2-1.7 East (St. Gobain to Glacier Northwest)

The RM 1.2-1.7 East (St. Gobain to Glacier Northwest) source control area is shown in Figure 14-1. There are five upland facilities of concern associated with this source control area (Figure 14-2). Groundwater contamination associated with four of these facilities has migrated off the properties and into the St. Gobain to Glacier Northwest source control area (this section) and the Slip 2 to Slip 3 source control area to the south (Section 15). Source control activities associated with these facilities are discussed in Section 14.3 below. No public storm drain outfalls are located within RM 1.2-1.7 East.

<b>Location</b>	RM 1.2-1.7 East
<b>Chemicals of Concern</b>	Mercury, zinc, PAHs, PCBs, BEHP, benzyl alcohol, phenol
<b>Data Gaps Evaluation</b>	February 2009 (E&E 2009)
<b>SCAP</b>	June 2009 (Ecology 2009h)

Action items for the St. Gobain to Glacier Northwest source control area are listed in Table 3-3. A total of 22 source control action items have been identified; as of December 2012, seven of these have been completed. Of the remaining action items, five are considered high priority.

### 14.1 Business Inspections

- Ecology conducted one inspection within this source control area (at Saint Gobain Containers, 5801 East Marginal Way S) during the current reporting period (Appendix C).

### 14.2 Source Tracing

- No source tracing samples have been collected in this source control area. The upland facilities of concern in this source control area discharge stormwater to the combined sewer system. Burlington Environmental is in the Michigan CSO basin; the other upland facilities discussed below are in the Brandon CSO basin.

### 14.3 Facility-Specific Source Control Actions

#### Burlington Environmental / PSC Environmental Services

Burlington Environmental, a wholly-owned subsidiary of PSC Environmental Services, LLC, operated a hazardous/dangerous waste treatment facility at this location until 2003. Releases from past operations at the facility, including storage of wastes and chemicals in underground storage

<b>Current Operations</b>	Storage area for corrective actions in progress at the facility
<b>Historical Operations</b>	Hazardous waste treatment and storage
<b>Address</b>	734 S Lucile Street
<b>Facility/Site ID</b>	47779679
<b>Chemicals of Concern</b>	BTEX, chlorinated solvents, 1,4-dioxane, PAHs, phenols, PCBs, and metals
<b>Media Affected</b>	Soils, groundwater

tanks, have contaminated soils and groundwater. Groundwater contamination has been detected beyond the facility property to the west and southwest, and in an area to the east and north owned by the Union Pacific Railroad company (Ecology 2010a). This site is also referred to as PSC Georgetown.

This site was administratively divided into two units in 2005. The eastern portion of the site, east of 4<sup>th</sup> Avenue S, is discussed below. The area west of 4<sup>th</sup> Avenue S is being investigated by three other PLPs (Art Brass Plating, Blaser Die Casting, and Capital Industries) under separate RI Orders.

In May 2010, the CAP and Agreed Order (DE-7347) for Burlington Environmental were finalized. These documents include a proposed, preferred cleanup action for the eastern portion of the Burlington Environmental site and the requirements associated with implementing and monitoring the remedy. The preferred cleanup action includes a combination of containment, soil excavation and offsite disposal, soil vapor extraction (SVE), enhanced groundwater biodegradation, institutional controls, and monitored natural attenuation. Burlington Environmental submitted a final *Engineering Design Report* (EDR) to Ecology in September 2011. Activities conducted during the current reporting period are summarized below.

- During the summer of 2012, in preparation for performing SVE, Burlington Environmental drew the water level down behind its barrier wall (per the EDR).
- On July 16, 2012, Burlington Environmental submitted a 1,4-dioxane well installation plan. Ecology conditionally approved the plan on August 14, 2012.
- During August 2012, Burlington Environmental began initial start-up testing of its SVE system (per the EDR). On September 28, 2012, the company submitted an SVE start-up memorandum. Ecology responded to the memorandum on October 10, 2012.
- During September and October of 2012, Burlington Environmental performed cleanup actions, including soil excavations, on an adjacent property owned by Union Pacific Railroad (Argo Yard). A report describing these actions is due to Ecology at the end of January 2013.

## Art Brass Plating

Under an Agreed Order with Ecology (DE-5296), Art Brass Plating is required to conduct an RI and implement interim actions. In 2008, the facility implemented an air sparging and SVE interim action beneath the property, which extends across 3<sup>rd</sup> Avenue S, north of S Findlay Street (Ecology 2009h).

On November 28, 2011, Art Brass Plating submitted a draft *Duwamish Waterway Porewater Risk Assessment* to Ecology (Aspect

<b>Current Operations</b>	Metal plating and polishing; manufacturing of wood stoves, office equipment, and store fixtures; recycling of automobile steel bumper and plastic bumper covers for the collision repair industry
<b>Historical Operations</b>	Manufacturing of builders' hardware; nickel, cadmium, zinc, silver, copper, chromium, brass, and bronze plating
<b>Address</b>	5516 3 <sup>rd</sup> Avenue S
<b>Facility/Site ID</b>	88531932
<b>Chemicals of Concern</b>	Chlorinated solvents, arsenic, cadmium, copper, nickel, zinc
<b>Media Affected</b>	Soil, groundwater, surface water

2011). The risk assessment discussed elevated levels of vinyl chloride detected in sediment porewater.

- Ecology provided comments on the risk assessment memorandum on January 27, 2012 (Ecology 2012a).
- In January 2012, Art Brass Plating submitted a draft groundwater monitoring plan to Ecology (Aspect 2012a). The purpose of this groundwater monitoring plan is to outline the groundwater monitoring tasks to be completed in 2012 under the Agreed Order.
- On January 9, 2012, Art Brass Plating submitted a SAP for collecting additional RI data in two phases (Aspect 2012b). Phase I data were subsequently submitted on March 14, 2012. Phase II data were submitted to Ecology on June 20, 2012.
- On September 28, 2012, Art Brass Plating submitted a revised draft RI Report (Aspect 2012c). Ecology conditionally approved the report on December 18, 2012 (Ecology 2012v).
- On December 19, 2012, Art Brass Plating submitted a draft 2013 Groundwater Monitoring Plan to Ecology.

### Blaser Die Casting

On March 25, 2008, Ecology issued Enforcement Order No. DE-5479 to complete an RI for chlorinated solvent contamination in soil and groundwater at the site (Ecology 2008a).

On July 15, 2011, Blaser Die Casting submitted a draft RI Report to Ecology (Pacific Groundwater Group [PGG] 2011). In September 2011 Ecology provided review comments and requested a revised report (Ecology 2011h).

<b>Current Operations</b>	The building is being leased; die casting operations have ceased.
<b>Historical Operations</b>	Die casting (from 1962 to 2012); residential or unoccupied prior to 1962
<b>Address</b>	5700 3 <sup>rd</sup> Avenue S
<b>Facility/Site ID</b>	7118747
<b>Chemicals of Concern</b>	Chlorinated solvents
<b>Media Affected</b>	Soil, groundwater

- On August 2, 2012, Blaser Die Casting submitted a revised RI Report to Ecology (PGG 2012a). Ecology conditionally approved the report on October 2, 2012.
- Blaser Die Casting submitted a draft Groundwater Monitoring Plan Addendum for collecting additional RI data on January 31, 2012. The Addendum was revised on February 29, 2012.
- On December 11, 2012, Blaser Die Casting submitted a draft 2013 Groundwater Monitoring Plan.

## Capital Industries Inc.

Capital Industries conducted investigations and prepared an RI Report under Agreed Order No. DE-5348, for soil and groundwater contamination (primarily tetrachloroethene [PCE] and its degradation products). Capital Industries is located downgradient of the Burlington Environmental facility and the Blaser Die Casting site.

<b>Current Operations</b>	Metal fabrication
<b>Historical Operations</b>	Metal fabrication since 1965; residential before 1965
<b>Address</b>	5801 3 <sup>rd</sup> Avenue S
<b>Facility/Site ID</b>	11598755
<b>Chemicals of Concern</b>	Chlorinated solvents
<b>Media Affected</b>	Groundwater

On July 15, 2011, Capital Industries submitted a draft RI Report to Ecology. Ecology submitted review comments in September 2011, and requested a revision of the Report (Ecology 2011i).

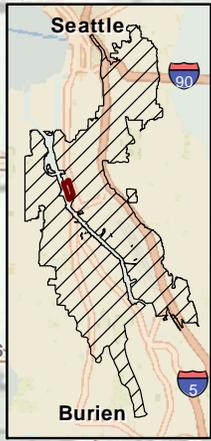
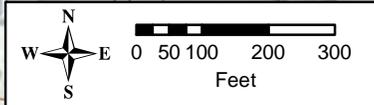
- On October 11, 2012, Capital Industries submitted a revised RI Report (Farallon 2012). Ecology conditionally approved the report on December 18, 2012 (Ecology 2012w).
- On February 1, 2012, Capital Industries submitted a draft 2012 Groundwater Monitoring Plan. The Plan was later revised and re-submitted on April 9, 2012. The plan included installation of several new wells downgradient of the company's property, near the LDW.

## GE Aviation

Several MTCA Agreed Orders are in place to require groundwater sampling and vapor intrusion mitigation at the former GE Aviation facility (located at 220 S Dawson Street).

- In 2012, Ecology and GE Aviation were finalizing a consent decree and CAP to implement in situ chemical oxidation with groundwater hydraulic control as the final facility remedy for this site. The available data suggest that the offsite trichloroethene (TCE) plume has not reached the LDW and the site remedy should prevent this from occurring in the future (Yasuda 2012).

<b>Current Operations</b>	Warehouse
<b>Historical Operations</b>	Manufactured and repaired aircraft parts
<b>Address</b>	220 S Dawson Street
<b>Facility/Site ID</b>	2522
<b>Chemicals of Concern</b>	TCE, PCE, 1,1,1-trichloroethane, fuels, and oil
<b>Media Affected</b>	Soil, groundwater



**Storm Drain Solids Sample - 2012**

- ✚ Inline Grab
- ▲ Sediment Trap
- ✚ Outfall Location

**Utility Lines**

- Storm Drain
- Combined Sewer
- King County Interceptor
- Ditch
- Property Boundary
- Source Control Area Boundary

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure 14-1. RM 1.2-1.7 East. St. Gobain to Glacier.mxd. Illustrative purposes only.

**Figure 14-1. RM 1.2-1.7 East:  
St. Gobain to Glacier Northwest  
Source Control Area**



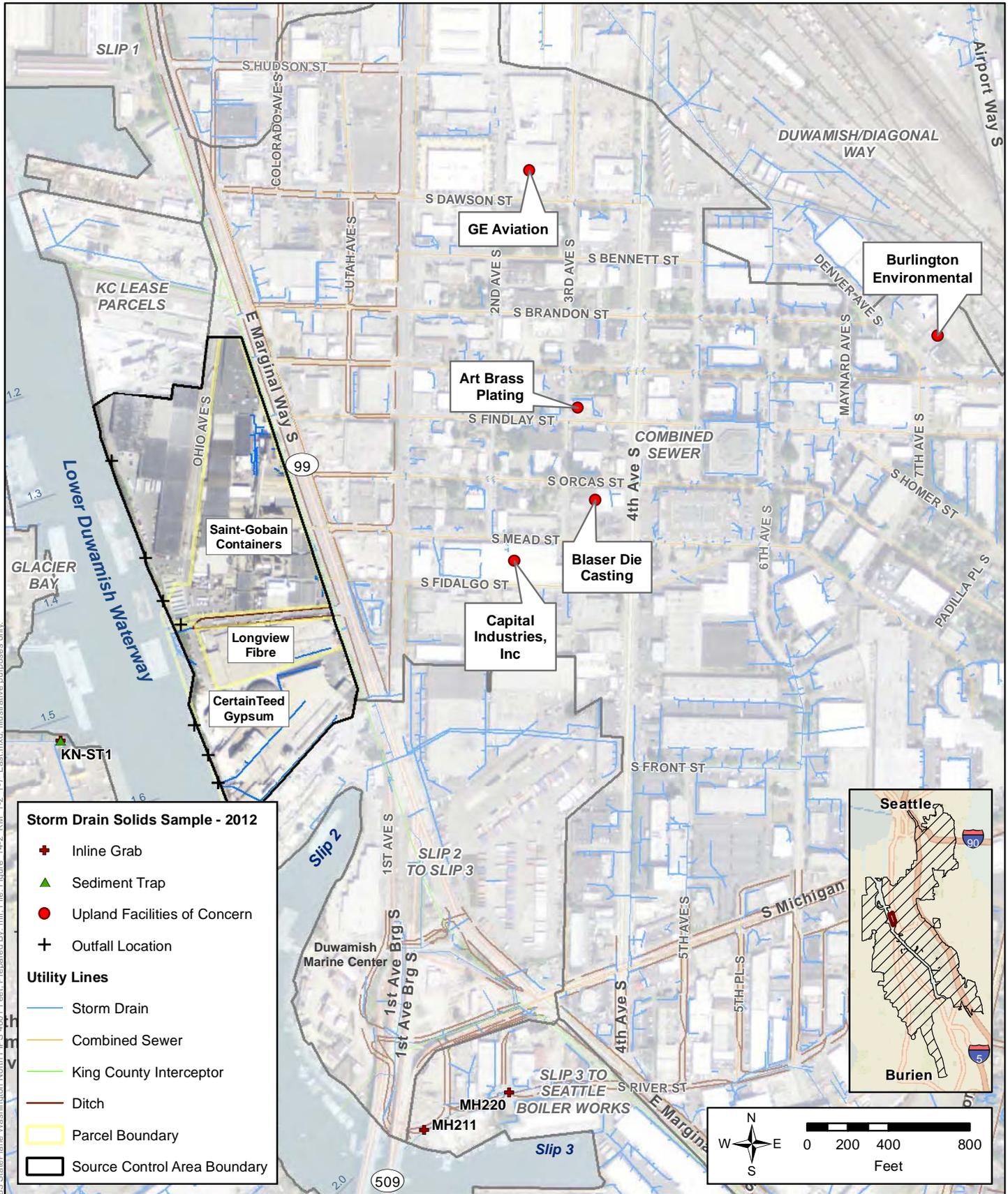


Figure 14-2. RM 1.2-1.7 East (St. Gobain to Glacier NW): Upland Facilities of Concern

## 15.0 RM 1.7-2.0 East (Slip 2 to Slip 3)

The RM 1.7-2.0 East (Slip 2 to Slip 3) source control area is shown in Figure 15-1. One public storm drain (1<sup>st</sup> Avenue S Bridge SD), the Michigan CSO, and several private outfalls discharge to the LDW within RM 1.7-2.0 East. Potential contaminant sources within the Michigan CSO Basin are shown in Figure 15-2.

<b>Location</b>	RM1.7-2.0 East
<b>Chemicals of Concern</b>	Metals, PCBs, PAHs, pentachlorophenol, TPH, VOCs
<b>Data Gaps Evaluation</b>	February 2009 (SAIC 2009a)
<b>SCAP</b>	June 2009 (Ecology 2009f)

Source control action items for the Slip 2 to Slip 3 source control area are listed in Table 3-3. A total of 39 source control action items were identified in the SCAP; as of December 2012, four of these have been completed. Of the remaining action items, two are considered high priority.

### 15.1 Business Inspections

- SPU conducted one initial inspection in the 1<sup>st</sup> Avenue South Bridge SD basin. SPU also conducted three inspections at two facilities within the Michigan CSO basin during the current reporting period (Appendix B). Compliance information for these facilities was not available at the time this status report was prepared.
- Ecology inspected three facilities in the Slip 2 to Slip 3 source control area during the current reporting period (Appendix C).
  - Samson Tug & Barge (6361 1<sup>st</sup> Avenue S) triggered a requirement to install stormwater treatment. They began work on the new treatment system in 2012.
  - Numerous housekeeping issues were identified at Scougal Rubber (6239 Corson Avenue S).

### 15.2 Source Tracing

- In 2012 King County collected sediment trap samples from the Michigan CSO regulator. They analyzed three samples, two from the lower trap and one from the upper trap. Validated data were not available at the time this Source Control Status Report was prepared.
- SPU has collected eight right-of-way catch basin samples within the Michigan CSO basin. No samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Right-of-Way CB Solids
Metals	Zinc	
PCBs	PCBs, total	
PAHs	HPAH	
Phthalates	Butylbenzylphthalate	
	Dimethylphthalate	
Other SVOCs	4-Methylphenol	
	Benzoic acid	
	Benzyl alcohol	
	Phenol	
TPH	TPH-oil	

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

### 15.3 Facility-Specific Source Control Actions

#### Duwamish Marine Center

Investigations performed at this property in 2000 and 2002 showed petroleum hydrocarbons, metals, PCBs, and PAHs above cleanup levels in soil and groundwater. The groundwater also contained solvents. Sediments adjacent to the site contained PCBs and PAHs (Ecology 2011k).

Ecology and the property owner entered into Agreed Order No. DE-8072 on September 2, 2011. The order requires that the property owner/operator conduct an RI/FS to define the nature and extent of contamination in soil, groundwater, surface water, and sediments, and to evaluate cleanup alternatives. In addition, the property owner/operator is required to prepare a draft CAP that identifies the preferred cleanup action and develops a schedule to remediate the contamination (Ecology 2011g).

<b>Current Operations</b>	Repair, storage, and maintenance of construction equipment; container storage; vehicle equipment maintenance
<b>Historical Operations</b>	Barge shipping terminal; cargo container manufacturing; construction material assembly; marine railway; cargo loading and unloading
<b>Address</b>	16 S Michigan Street; 6365 1 <sup>st</sup> Avenue S
<b>Facility/Site ID</b>	21945598 (Duwamish Marine Center) 71371939 (Duwamish Marine Center Inc) 1020256 (Samson Tug and Barge)
<b>Chemicals of Concern</b>	Metals (cadmium, copper, lead, mercury, silver, zinc), PCBs, PAHs, benzene, PCE, petroleum hydrocarbons
<b>Media Affected</b>	Soil, groundwater

- In June 2012 Duwamish Marine Center submitted a second draft RI/FS Work Plan to Ecology. The RI/FS Work Plan is expected to be completed in 2013.

## Scougal Rubber Corporation

Soil and groundwater at the Scougal Rubber site are contaminated with petroleum products, halogenated organic compounds, metals, cyanide, and non-halogenated solvents. Site status listing indicates that a VCP opinion letter has been issued and consultation completed.

<b>Current Operations</b>	Manufacture of rubber products
<b>Historical Operations</b>	Same
<b>Address</b>	6239 Corson Avenue S
<b>Facility/Site ID</b>	93637295
<b>Chemicals of Concern</b>	Solvents, petroleum hydrocarbons
<b>Media Affected</b>	Soil, groundwater

- In December 2012, Scougal Rubber Corporation submitted a technical memorandum to Ecology that summarizes the remedial actions conducted from September 2011 through September 2012. The groundwater remediation system was turned off in September 2011. An unsatisfactory rebound in groundwater concentrations was observed in November 2011. The groundwater treatment system was turned on again and remained on through September 2012. No groundwater monitoring samples were collected between December 2011 and September 2012 (PGG 2012b).

## General Biodiesel

General Biodiesel converts used cooking oils, fish oil, vegetable oil, and animal fats into biodiesel fuel and glycerol. This process uses hazardous chemicals. In 2009 and 2010, General Biodiesel failed to submit Emergency Hazardous Chemical Inventory forms to the Seattle Fire department, King County emergency management and Washington's Emergency Response Commission. By failing to report their hazardous chemicals, General Biodiesel violated the federal Emergency Planning and the Community Right-to-Know Act.

<b>Current Operations</b>	Biodiesel refinery
<b>Historical Operations</b>	Shipping company, exported lumber
<b>Address</b>	6333 1 <sup>st</sup> Avenue S, Seattle
<b>Facility/Site ID</b>	5023482 (Seattle Biodiesel LLC)
<b>Chemicals of Concern</b>	Glycerin, methanol, vegetable oil
<b>Media Affected</b>	Surface water

- In December 2012 General Biodiesel settled with the EPA. As part of their settlement General Biodiesel agreed to pay a penalty of \$62,985 for failing to report their hazardous chemicals, and they agreed to fully comply with federal emergency planning rules (USEPA 2012d).

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Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure\_15-1\_RM\_1.7-2.0\_East\_Slip2\_to\_3.mxd. Illustrative purposes only.

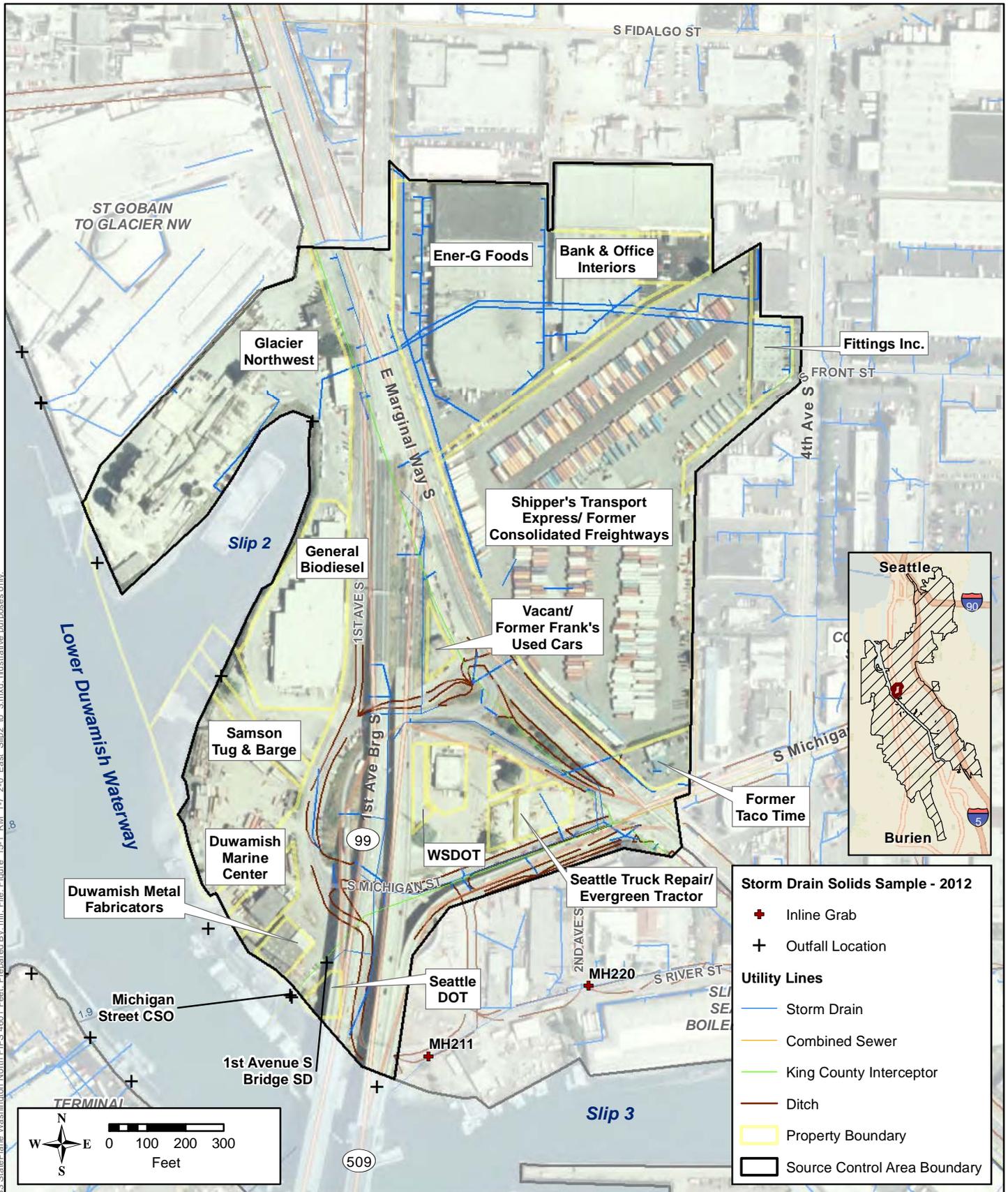
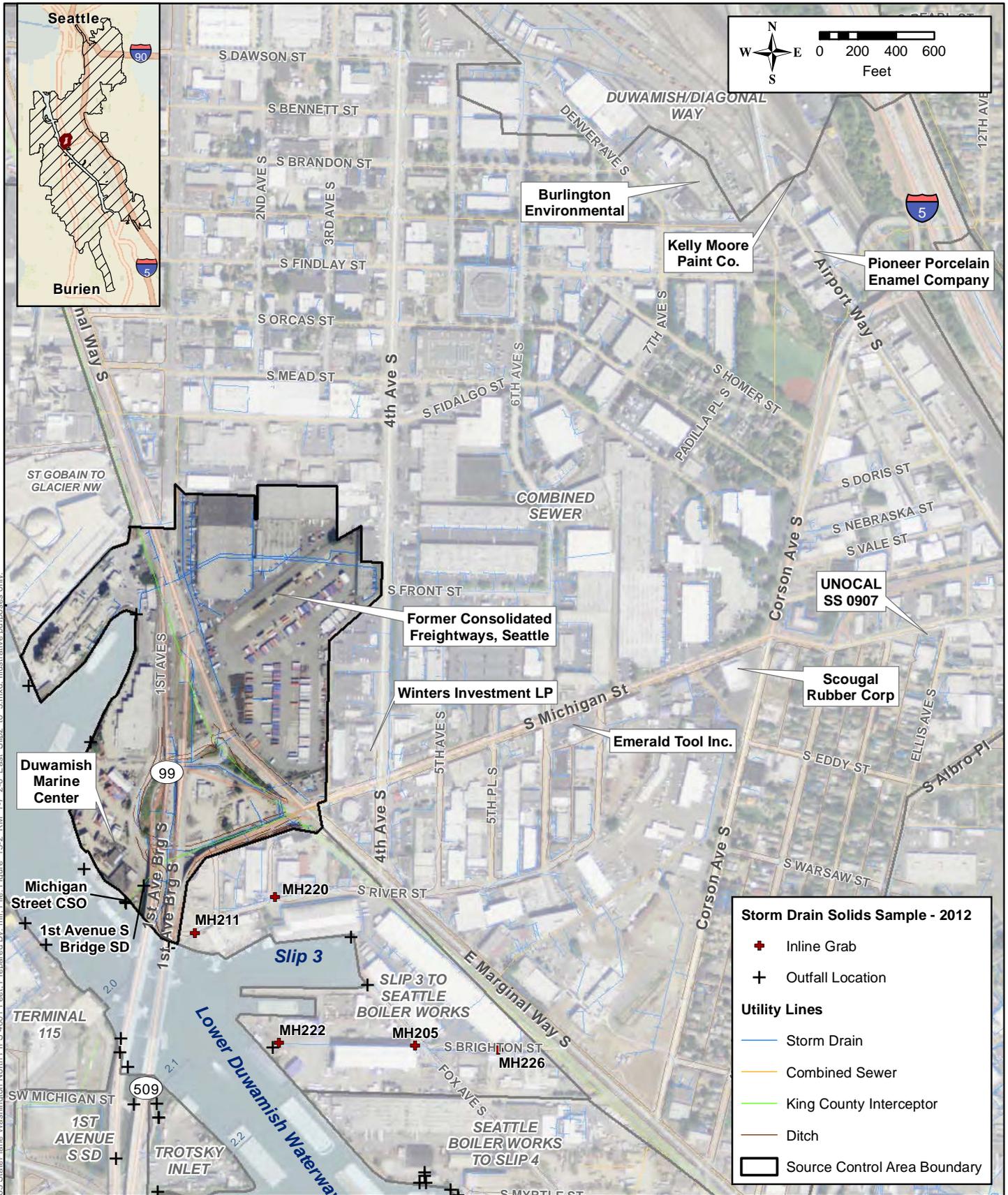


Figure 15-1. RM 1.7-2.0 East:  
Slip 2 to Slip 3 Source Control Area





Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure 15-2\_RM\_1-7\_2-0\_East\_Slip2\_to\_3.mxd. Illustrative purposes only.

Figure 15-2. Potential Sources within the Michigan Street CSO Basin



## 16.0 RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)

The RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works) source control area is shown in Figure 16-1. This source control area includes the S River Street SD and S Brighton Street SD basins. The S Brighton Street CSO formerly discharged at this location; SPU has blocked this CSO and it is no longer in use.

<b>Location</b>	RM 2.0-2.3 East
<b>Chemicals of Concern</b>	Metals, PAHs, PCBs, chlorobenzene, benzyl alcohol
<b>Data Gaps Evaluation</b>	June 2008 (E&E 2008b)
<b>SCAP</b>	April 2009 (Ecology 2009b)

Action items for the Slip 3 to Seattle Boiler Works source control area are listed in Table 3-3. A total of 31 source control action items have been identified for this source control area; as of December 2012, six of these have been completed. Of the remaining action items, six are considered high priority.

### 16.1 Business Inspections

- SPU conducted inspections in the S Brighton Street SD and S River Street SD basins during the current reporting period (Appendix B).
  - SPU conducted a total of 13 inspections at six facilities in the S Brighton Street SD basin, including six initial inspections and seven follow-up inspections. All of these facilities were in compliance as of December 2012.
  - SPU conducted a total of two inspections at one facility in the S River Street SD basin, including one initial inspection and one follow-up inspection. This facility was in compliance as of December 2012.
  - SPU conducted one screening inspection in the area that drains directly to the LDW.

### 16.2 Source Tracing

- To date, SPU has collected six in-line solids samples and two right-of-way catch basin samples in the S River Street SD basin. Two in-line samples were collected during the current reporting period. The S River Street SD was cleaned in 2009–2010. Post cleaning sampling results showed that BEHP (2.3 to 8.2 mg/kg DW) exceeded the 2LAET.
- To date, SPU has collected 15 in-line solids samples, one onsite catch basin sample, and six right-of-way catch basin samples in the S Brighton Street SD basin. During the current reporting period, three in-line solids samples were collected in this drainage basin. The S Brighton Street SD system was cleaning in 2009–2010. Post cleaning sampling results for MH 205 showed that HPAHs (26 mg/kg DW) exceeded the 2LAET.

- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 16-1. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic			
	Copper			
	Lead			
	Mercury			
	Zinc	×		
PCBs	PCBs, total	×		
PAHs	LPAH			
	HPAH	⊠		
	Total cPAH	⊠		
Phthalates	BEHP	⊠		
	Butylbenzylphthalate	×		
	Dimethylphthalate			
Other SVOCs	1,2-Dichlorobenzene			
	1,4-Dichlorobenzene			
	4-Methylphenol			
	Benzoic acid			
	Benzyl alcohol			
	N-Nitrosodiphenylamine			
TPH	TPH-diesel			
	TPH-oil	⊠		

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

⊠ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

- Ecology collected bank soil samples at one location in this source control area in May 2011; a data report was published in March 2012 (Hart Crowser 2012b).

- At the Fox Avenue S Street End sampling location, concentrations of the following chemicals exceeded the SQS/LAET: lead (512 mg/kg) and total PCBs (0.26 mg/kg DW).
- The following chemicals also exceeded the CSL/2LAET: zinc (1,120 mg/kg), 2,4-dimethylphenol (0.33 mg/kg DW), 2-methylphenol (0.14 mg/kg DW), butylbenzylphthalate (23 mg/kg DW), anthracene (3.5 mg/kg DW), total LPAH (6.6 mg/kg DW), and total HPAH (42 mg/kg DW). Butyl benzyl phthalate exceeded the 2LAET by a factor of 25.

### 16.3 Facility-Specific Source Control Actions

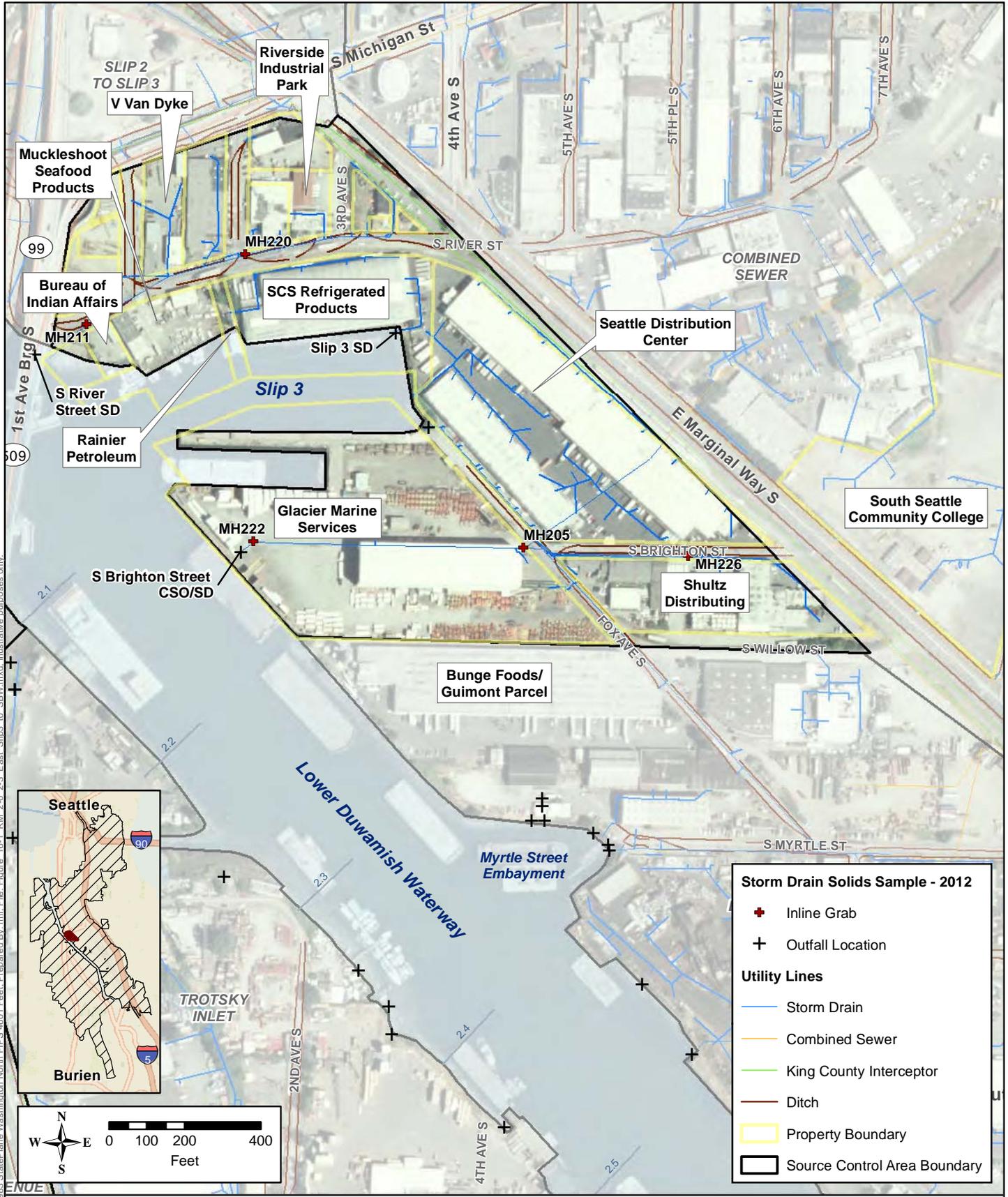
#### Fox Avenue Building

In 2009, Fox Avenue Building, LLC investigated contamination under Agreed Order DE 6486 (Ecology 2009l).

<b>Current Operations</b>	Chemical distribution facility
<b>Historical Operations</b>	Chemical and petroleum distribution
<b>Address</b>	6900 Fox Avenue
<b>Facility/Site ID</b>	2282
<b>Chemicals of Concern</b>	Solvents, petroleum hydrocarbons, pentachlorophenol
<b>Media Affected</b>	soil, groundwater, stormwater

- In 2012, Ecology and Fox Avenue Building negotiated a second Agreed Order. The draft Agreed Order, draft RI/FS, and draft CAP were available for public review and comment from March 1 through March 30, 2012 (Ecology 2012b).
- After the public comment period, the draft CAP and Agreed Order were revised to address some of the comments submitted by Seattle Boiler Works. Ecology also prepared a responsiveness summary to address these comments (Ecology 2012d).
- Ecology and the PLP signed Agreed Order DE-8985 on June 18, 2012. According to the Agreed Order, the PLP is required to conduct the cleanup actions described in the CAP (Ecology 2012f).
- Groundwater remediation was scheduled to begin on January 8, 2013. The treated groundwater will be discharged to the sanitary sewer under Major Discharge Authorization No. 4237, issued by KCIW (effective date November 7, 2012) (Tiffany 2013a).

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**Figure 16-1. RM 2.0-2.3 East:  
Slip 3 to Seattle Boiler Works  
Source Control Area**



Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared by: m.f. File: Figure 16-1\_RM 2.0-2.3\_East\_Slip3\_to\_SBW.mxd. Illustrative purposes only.

## 17.0 RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)

The RM 2.8-2.8 East (Seattle Boiler Works to Slip 4) source control area is shown in Figure 17-1. This source control area includes the S Myrtle Street and S Garden Street SD basins, as well as private storm drains that discharge directly to the LDW.

<b>Location</b>	RM 2.3-2.8 East
<b>Chemicals of Concern</b>	Mercury, PCBs, PAHs, dioxins/furans, organo-tin compounds
<b>Data Gaps Evaluation</b>	May 2008 (SAIC 2008a)
<b>SCAP</b>	June 2009 (Ecology 2009g)

Action items for the Seattle Boiler Works to Slip 4 source control area are listed in Table 3-3. A total of 42 source control action items were identified in the SCAP; as of December 2012, eight of these have been completed and one has been canceled. Of the remaining action items, 15 are considered high priority.

Source control actions for the Crowley Marine Services / 8<sup>th</sup> Avenue Terminals property (which is located partially within EAA-3 and partially within RM 2.3-2.8 East) are included in Section 6.

### 17.1 Business Inspections

- SPU conducted inspections in the S Garden Street SD and S Myrtle Street SD basins during the current reporting period (Appendix B).
  - SPU conducted a total of three inspections at one facility in the S Garden Street SD basin, including one initial inspection and two follow-up inspections. This facility was in compliance as of December 2012.
  - SPU conducted a total of 20 inspections at seven facilities in the S Myrtle Street SD basin, including seven initial inspections and 13 follow-up inspections. One facility (Reliable Transfer and Storage) was identified by SPU as not in compliance as of the end of December 2012.
- Ecology conducted 14 inspections at seven facilities within this source control area during the current reporting period (Appendix C).
  - Ecology sent a warning letter to CleanScapes (7308 8<sup>th</sup> Avenue S) for noncompliance with the ISGP.
  - Ecology sent a warning letter to Seattle Iron and Metals (601 S Myrtle Street) and issued a \$15,000 penalty for noncompliance with NPDES permit requirements.

### 17.2 Source Tracing

- To date, SPU has collected one in-line solids sample, three onsite catch basin samples, and eight right-of-way catch basin samples in the S Myrtle Street SD basin.

- The entire drainage system was cleaned in 2009–2010 to remove accumulated sediment containing elevated levels of copper (291 to 1,110 mg/kg), mercury (0.33 to 0.74 mg/kg), TPH-oil (2,900 to 10,000 mg/kg), and PCBs (0.84 to 3.7 mg/kg DW). This system was re-sampled in 2010 and 2011 (RCB 225 and RCB 189F are located immediately adjacent to the Seattle Iron & Metals (SIM) entrance). Elevated levels of copper (860 to 3,280 mg/kg DW), lead (724 to 904 mg/kg DW), mercury (0.66 to 1.53 mg/kg DW), TPH-oil (8,600 to 20,000 mg/kg DW), and PCBs (1.65 to 8.23 mg/kg DW) were found during each sampling event. SIM re-cleaned this catch basin following each sampling event.
- In 2012, SPU required SIM to install treatment in this catch basin to reduce the amount of pollutants entering the S Myrtle Street SD system. Two Filterra units are scheduled to be installed in 2013. No samples were collected during the current reporting period.
- To date, SPU has collected one in-line solids samples, four onsite catch basin samples, and one right-of-way catch basin sample in the S Garden Street SD basin.
  - The entire drainage system was cleaned in 2009–2010. No samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic			
	Copper			
	Lead			
	Mercury			
	Zinc			
PCBs	PCBs, total			
Dioxins/Furans	Dioxins/Furans, total TEQ			
PAHs	LPAH			
	HPAH			
Phthalates	BEHP			
	Butylbenzylphthalate			
	Diethylphthalate			
	Dimethylphthalate			
	Di-n-butylphthalate			
	Di-n-octylphthalate			
Other SVOCs	2-Methylnaphthalene			
	4-Methylphenol			
	Benzoic acid			
	Benzyl alcohol			

Chemical Class	Chemical	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
	Phenol			
TPH	TPH-diesel			
	TPH-oil			

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

- Ecology collected bank soil samples at two locations in this source control area in May 2011; a data report was published in March 2012 (Hart Crowser 2012b).
  - At the Seattle Iron & Metals sampling location, the following compounds exceeded the CSL/2LAET: cadmium (9 mg/kg), chromium (3,450 mg/kg), copper (522 mg/kg), zinc (1,950 mg/kg), and total PCBs (0.19 mg/kg DW).
  - At the Puget Sound Truck Lines sampling location, arsenic concentrations exceeded the SQS (85 mg/kg).

### 17.3 Facility-Specific Source Control Actions

#### Seattle Iron & Metals

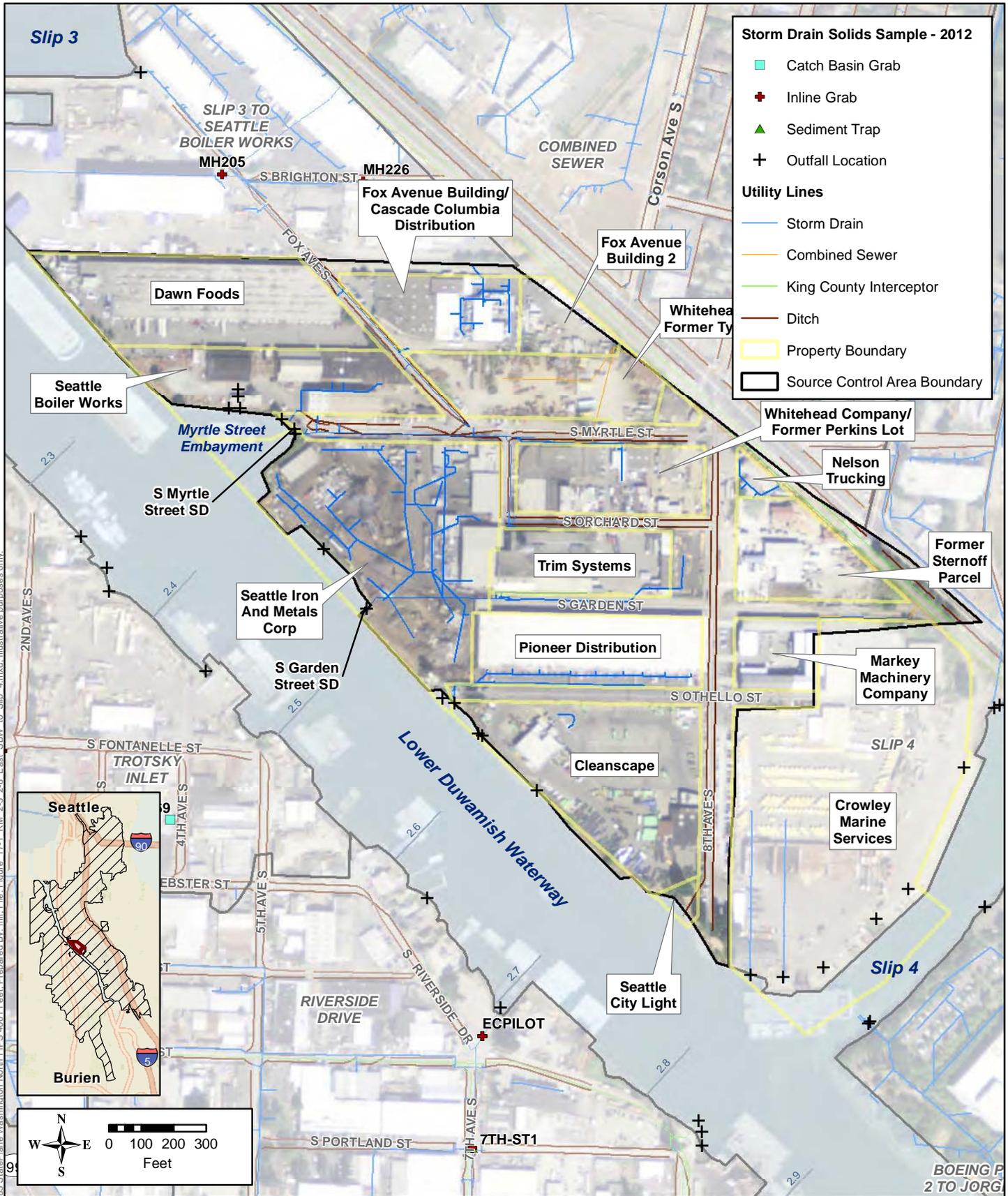
- Ecology is in the process of modifying the NPDES permit and treatment requirements for Seattle Iron & Metals (SIM). The company submitted a new permit application and Ecology expects to issue the new permit in 2013. The new permit will consider runoff from the main yard and will

<b>Current Operations</b>	Metals recycling
<b>Historical Operations</b>	Dangerous waste transport, construction, machine shop
<b>Address</b>	601 S Myrtle Street
<b>Facility/Site ID</b>	94727791 (Seattle Iron Metals Corp)
<b>Chemicals of Concern</b>	Metals (cadmium, chromium, copper, zinc), petroleum hydrocarbons, and PCBs
<b>Media Affected</b>	Stormwater

require treatment of roof and employee parking area runoff. To respond to EPA's concerns regarding atmospheric deposition, Ecology will ask SIM to use treated stormwater and/or tap water for dust suppression. In addition, the permit contains a requirement for SIM to submit an engineering report for dust control. Dust is becoming a major issue within and outside the SIM permit boundary.

- SIM was issued coverage under the ISGP in June 2011 for their annex operation across the street from the main plant. In January and March of 2012, Ecology conducted compliance inspections. Ecology issued a Notice of Violation and a \$15,000 penalty to SIM for permit and water quality violations. As part of a settlement agreement of the penalty appeal, SIM agreed to implement improved source control measures and submit an engineering report.
- On February 3, 2012, the City of Seattle and SIM entered into a Voluntary Compliance Agreement. The City of Seattle documented that SIM has violated the City of Seattle

stormwater code since 2010. The purpose of this agreement is to correct the violations in a timely, predictable manner. This agreement outlines work that SIM must do to address roof drains, track out, and storm drain cleaning, and includes the installation of a Filterra system to treat stormwater runoff entering the catch basin at the entrance to SIM, which drains to the S Myrtle Street SD, to prevent future violations of the City of Seattle's stormwater code (City of Seattle 2012).



**Figure 17-1. RM 2.3-2.8 East:  
Seattle Boiler Works to Slip 4  
Source Control Area**



Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure\_17-1\_RM\_2.3-2.8\_East\_SBW\_to\_Slip\_4.mxd. Illustrative purposes only.

## 18.0 RM 3.9-4.3 East (Slip 6)

The RM 3.9-4.3 East (Slip 6) source control area is shown in Figure 18-1. It includes stormwater drainage from the south-central portion of KCIA, which discharges to the LDW through KCIA SD#1. It also includes the northern portion of the BDC. Source control action items for this source control area are listed in Table 3-3.

<b>Location</b>	RM 3.9-4.4 East
<b>Chemicals of Concern</b>	Metals, PCBs, PAHs, phthalates, other SVOCs, petroleum hydrocarbons
<b>Data Gaps Evaluation</b>	February 2008 (E&E 2008a)
<b>SCAP</b>	September 2008 (Ecology 2008d)

Action items for the Slip 6 source control area are listed in Table 3-3. A total of 23 source control action items were identified in the SCAP; as of December 2012, four of these have been completed. Of the remaining action items, 13 are considered high priority.

### 18.1 Business Inspections

- No business inspections were conducted in this source control area during the current reporting period.

### 18.2 Source Tracing

- To date, SPU has collected three sediment trap samples, two in-line solids samples, and one onsite catch basin sample in the KCIA SD#1 basin. One sediment trap sample was collected during the current reporting period.
  - Sediment trap sample KCIA1-ST1 contained HPAHs at concentrations above the CSL/2LAET. Every HPAH compound that was analyzed was present at a concentration above its respective 2LAET value, as were total HPAH (30.9 mg/kg DW) and total cPAH (4.3 mg/kg DW).
- KCIA sampled and cleaned an OWS in October 2012. The OWS solids contained phenanthrene, total HPAH, and BEHP concentrations above the SQS/LAET. According to KCIA, the SPU 2012 data indicate that the OWSs are functioning properly to reduce/eliminate the migration of contaminants from KCIA to the LDW.
- EPA collected one storm drain solids sample (TUK-04) in this source control area during August 2011. Concentrations of 2,4-dimethylphenol (0.038 mg/kg DW) and hexachlorobutadiene (0.096 mg/kg DW) exceeded the SQS/LAET, but did not exceed the CSL/2LAET.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the

current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 18-1. Storm drain screening levels are defined in Section 3.2

Chemical Class	Chemical	Sediment Trap	In-line Solids	Onsite CB Solids
Metals	Copper			
	Zinc			
PAHs	LPAH	☒		
	HPAH	☒		
	Total cPAH	☒		
Phthalates	BEHP	×		
	Butylbenzylphthalate	×		
Other SVOCs	2,4-Dimethylphenol			
	4-Methylphenol			
	Hexachlorobutadiene			
TPH	TPH-diesel			
	TPH-oil			

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

### 18.3 Facility-Specific Source Control Actions

#### 8801 Site (Former Kenworth Truck/PACCAR)

Ecology, PACCAR, and Merrill Creek Holdings (the current property owner) signed an Agreed Order in November 2008 for upland cleanup, which includes completion of an RI/FS and Interim Action Work Plan; the Order became effective on November 14, 2008.

- In March 2011, PACCAR submitted a final RI report to Ecology (AMEC 2011). The RI report outlines the historical activity, describes

<b>Current Operations</b>	Damaged vehicle storage
<b>Historical Operations</b>	Truck manufacturing; airplane assembly
<b>Address</b>	8801 East Marginal Way S
<b>Facility/Site ID</b>	2072 (Kenworth Truck Co)
<b>Chemicals of Concern</b>	Petroleum hydrocarbons, PAHs, VOCs, PCBs, metals (arsenic, lead, copper), SVOCs
<b>Media Affected</b>	Soil, groundwater, stormwater, sediment

environmental investigations from 1986–2010, presents the conceptual site model with the pathways along which contamination may migrate, and identifies the contaminants of concern and remaining data gaps.

- On February 2, 2012, PACCAR submitted a draft focused FS to Ecology for the upland portion of this site (AMEC 2012a). This report includes a brief background of the site, findings from various RIs, remedial action objectives and performance criteria, and the screening and selection of applicable technologies and remedial alternatives. Ecology has been working with PACCAR to develop final cleanup levels and alternatives.
- This property is currently leased to Insurance Auto Auctions (IAA). On September 10 and 11, 2012, Bravo Environmental cleaned and inspected IAA’s interceptor pipe in preparation for a slip lining project. IAA obtained storm solids samples before the cleaning. The storm solids samples contained slightly higher metals and VOCs than samples taken before previous clean-outs. IAA’s contractor believes that these high concentrations are due to the slightly more powerful equipment used to flush the pipe before the slip lining. They believe that the likely source of the VOCs is historical operations, since IAA does not use or handle VOCs, and that the solids that flow to the north treatment system are being addressed by the Vortechs unit and the filters in the Stormfilter system (Hansen 2012).
- In September 2012, IAA was scheduled to conduct a cured-in-place pipe slip lining project for the north stormwater interceptor pipe at the IAA Branch in Tukwila. The work would not include any pipe excavation, disturbance of surface pavements or underlying soil or groundwater. The purpose of this project was to enhance IAA’s compliance with its NPDES permit. The north interceptor pipe consists of a corrugated metal zinc-galvanized pipe which has been in place for many years. This type of pipe material extends to the boundaries of the work area. By lining the pipe, IAA hopes to be better able to control this potential source of zinc. The lining will also prevent potential infiltration of soils and groundwater into the stormwater system and it will add strength and longevity to the pipe (Hansen 2012).

### Former Rhone-Poulenc East Marginal Way Facility

Corrective actions at this site are being conducted by Container Properties, LLC, the current property owner, under an EPA Administrative Order on Consent (No. 1091-11-20-3008[h]). Activities are being overseen by EPA.

In April 2009, EPA requested that Container Properties complete additional investigations in the Slip 6 bank, the LDW riverbank, and the

sediments in the offshore area. In June 2011, AMEC submitted a work plan for this investigation. On August 18, 2011, EPA approved the work plan, with some modification.

<b>Current Operations</b>	Leased to Industrial Auto Auctions for wrecked vehicle storage
<b>Historical Operations</b>	Glue, paint, resin, and wood preservative manufacturing); vanillin manufacturing
<b>Address</b>	9229 East Marginal Way S
<b>Facility/Site ID</b>	2150 (Container Properties LLC)
<b>Chemicals of Concern</b>	PCBs, metals (copper), VOCs, PAHs, petroleum hydrocarbons
<b>Media Affected</b>	Soil, groundwater, sediment

- In April 2012, AMEC prepared a sediment characterization data report for Container Properties, LLC (AMEC 2012b). This data report presents the results of the sediment characterization in the intertidal and subtidal areas adjacent to the former Rhone-Poulenc facility. The analytical results indicate the presence of some contaminants at concentrations exceeding the SQS or CSL criteria. In surface sediment samples, benzyl alcohol and PCBs exceeded the SQS. In the subsurface sediment samples, mercury, PAHs, PCBs, and benzyl alcohol exceeded the SQS. These findings will be further evaluated during the corrective measures study.

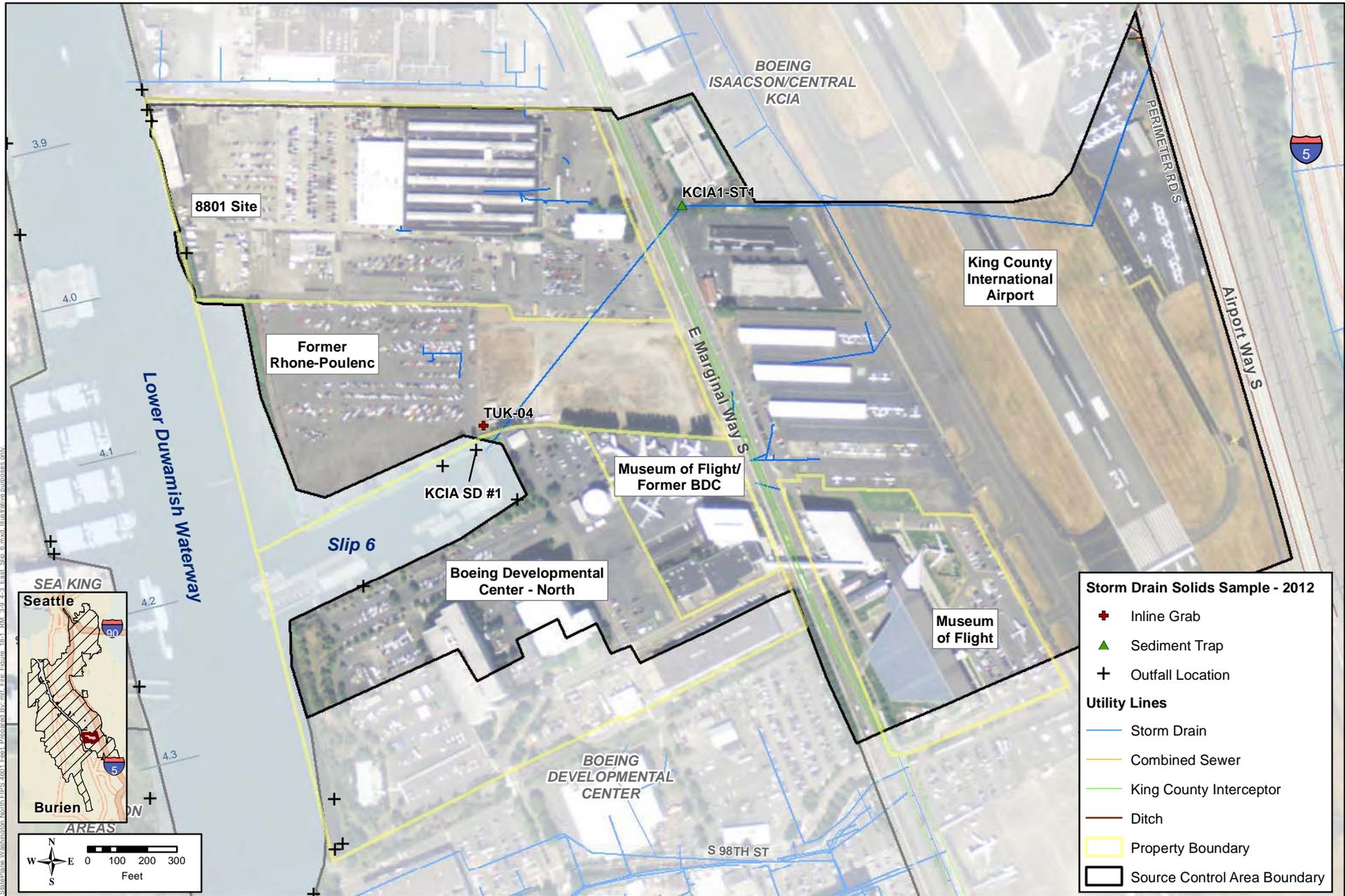


Figure 18-1. RM 3.9-4.3 East:  
Slip 6 Source Control Area

## 19.0 RM 4.3-4.9 East (Boeing Developmental Center)

The RM 4.3-4.9 East (BDC) source control area is shown in Figure 19-1. This source control area includes stormwater drainage from 10 private outfalls located in the central portion of the BDC. There are no public storm drain outfalls located within RM 4.3-4.9 East. Source control action items for this source control area are listed in Table 3-3.

<b>Location</b>	RM 4.3-4.9 East
<b>Chemicals of Concern</b>	Lead, acenaphthene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and PCBs
<b>Data Gaps Evaluation</b>	September 2010 (SAIC 2010b)
<b>SCAP</b>	December 2010 (Ecology 2010f)

Eight additional private outfalls are located in the northern and southern portions of the BDC property. These discharge to the Slip 6 source control area (Section 18) or the EAA-7 (Norfolk CSO/SD) source control area (Section 10).

Action items for the BDC source control area are listed in Table 3-3. A total of nine source control action items were identified in the SCAP; as of December 2012, none of these have been completed. Two of these action items are considered high priority.

### 19.1 Business Inspections

- No business inspections were conducted in this source control area during the current reporting period. BDC is the only facility within the RM 4.3-4.9 East source control area.

### 19.2 Source Tracing

- This source control area consists of the central portion of a single facility (BDC). PCBs have been detected in oil/water separator sludge/sediment and water samples collected by Boeing in this area (SAIC 2010b).

### 19.3 Facility-Specific Source Control Actions

#### Boeing Developmental Center (Central Portion)

The central portion of the BDC is located in this source control area. The northern portion of the BDC is discussed in Section 18 (Slip 6 source control area); the southern portion of the BDC is discussed in Section 10 (EAA-7 Norfolk

<b>Current Operations</b>	Research and development
<b>Historical Operations</b>	Aircraft manufacturing
<b>Address</b>	9725 East Marginal Way S
<b>Facility/Site ID</b>	4581384 (BDC Norfolk) 2101 (Boeing A&M Developmental Center)
<b>Chemicals of Concern</b>	PCBs, metals, solvents, petroleum hydrocarbons, SVOCs
<b>Media Affected</b>	Soil, groundwater, stormwater, sediment

CSO/SD source control area).

- In 2012, Boeing completed the 2011 Annual Sampling Report for post-removal monitoring associated with the south storm drain system at BDC (refer to Section 10.3 for more details) (Calibre 2012). This report also describes and evaluates recent sampling at other areas of the BDC (in the central portion of the property).
- A revised SWPPP was developed and implemented to ensure that the stormwater system components serve their intended function (Boeing 2013).



Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared by: mlf. File: Figure 19-1\_RM 4.3\_4.9\_East\_BDC.mxd. Illustrative purposes only.

**Figure 19-1. RM 4.3-4.9 East:  
Boeing Developmental Center  
Source Control Area**



## 20.0 RM 0.0-1.0 West (Spokane Street to Kellogg Island)

The RM 0.0-1.0 West (Spokane Street to Kellogg Island) source control area is shown in Figure 20-1. This source control area includes the SW Dakota Street and SW Idaho Street SD basins.

<b>Location</b>	RM 0.0-1.0 west
<b>Chemicals of Concern</b>	Lead, mercury, zinc, PAHs, phthalates, phenols, VOCs, and PCBs
<b>Data Gaps Evaluation</b>	September 2012 (SAIC 2012b)
<b>SCAP</b>	Expected in 2013

A Data Gaps Report for the Spokane Street to Kellogg Island source control area was finalized in September 2012 (SAIC 2012b). The draft SCAP was submitted to Ecology in November 2012. The final SCAP is expected to be completed in 2013.

### 20.1 Business Inspections

- SPU conducted a total of three inspections at one facility in the SW Dakota Street SD basin during the current reporting period, including one initial inspection and two follow-up inspections (Appendix B). This facility was identified by SPU as in compliance as of the end of December 2012.
- Ecology conducted two inspections at two facilities within this source control area during the current reporting period (Appendix C).
  - Ecology noted that Fog Tite (4819 West Marginal Way SW) implemented several source control treatment measures and worked in good faith to comply with their ISGP since 2010. Ecology determined that Fog Tite met the settlement agreement for compliance with their permit and they are eligible to have the remaining penalty dropped.

### 20.2 Source Tracing

- To date, SPU has collected eight sediment trap samples, nine in-line solids samples, and five right-of-way catch basin samples in the SW Idaho Street SD basin. Three sediment trap samples and two in-line solids samples were collected during the current reporting period.
  - SPU cleaned approximately 8,000 feet of line of the SW Idaho Street SD system in 2012. Approximately 3,600 feet of line at the downstream end of the system is scheduled to be completed in 2013.
- To date, SPU has collected five onsite catch basin samples and three right-of-way catch basin samples in the SW Dakota Street SD basin. No samples were collected in this SD basin during the current reporting period.

- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 20-1. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Zinc	☒			
PCBs	PCBs, total	×			
PAHs	LPAH				
	HPAH		☒		
Phthalates	BEHP	☒			
	Butylbenzylphthalate	×	×		
	Diethylphthalate				
	Dimethylphthalate				
	Di-n-butylphthalate				
Other SVOCs	4-Methylphenol				
	Benzoic acid				
	Benzyl alcohol				
	Hexachlorobenzene				
TPH	TPH-oil		☒		

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

- Ecology collected bank soil samples at two locations in this source control area in May 2011; a data report was published in March 2012 (Hart Crowser 2012b).
  - At the Riverside Marina sampling location, mercury concentrations exceeded the CSL with concentrations up to 1.1 mg/kg.
  - At the T-107 sampling location, concentrations of the following chemicals exceeded the CSL/2LAET: arsenic (to 324 mg/kg DW), lead (to 1,610 mg/kg), and zinc (to 2,480 mg/kg).

### **20.3 Facility-Specific Source Control Actions**

Facility-specific source control action items will be identified in the SCAP for this source control area, which will be published in 2013. Source control actions completed after publication of the SCAP for the Spokane Street to Kellogg Island source control area will be documented in future Source Control Status Reports.

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## 21.0 RM 1.0-1.3 West (Kellogg Island to Lafarge Cement)

The RM 1.0-1.3 West (Kellogg Island to Lafarge Cement) source control area is shown in Figure 22-1. There are no public storm drains that discharge to the LDW within this source control area, which contains only a single property. Source control action items for this source control area are listed in Table 3-3.

<b>Location</b>	RM 1.0-1.3 West
<b>Chemicals of Concern</b>	Metals (arsenic, mercury, zinc), PAHs, PCBs, BEHP, dioxins/furans
<b>Data Gaps Evaluation</b>	April 2011 (SAIC 2011b)
<b>SCAP</b>	June 2011 (Ecology 2011e)

Action items for the Kellogg Island to Lafarge Cement source control area are listed in Table 3-3. A total of nine source control action items were identified in the SCAP; as of December 2012, none of these have been completed and none are considered high priority.

### 21.1 Business Inspections

- No business inspections were conducted in this source control area during the current reporting period. Lafarge Cement is the only facility within the RM 1.0-1.3 West source control area.

### 21.2 Source Tracing

- SPU has collected four onsite catch basin samples at the Lafarge Cement property. None of these samples were collected during the current reporting period
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). Storm drain screening levels are defined in Section 3.2.

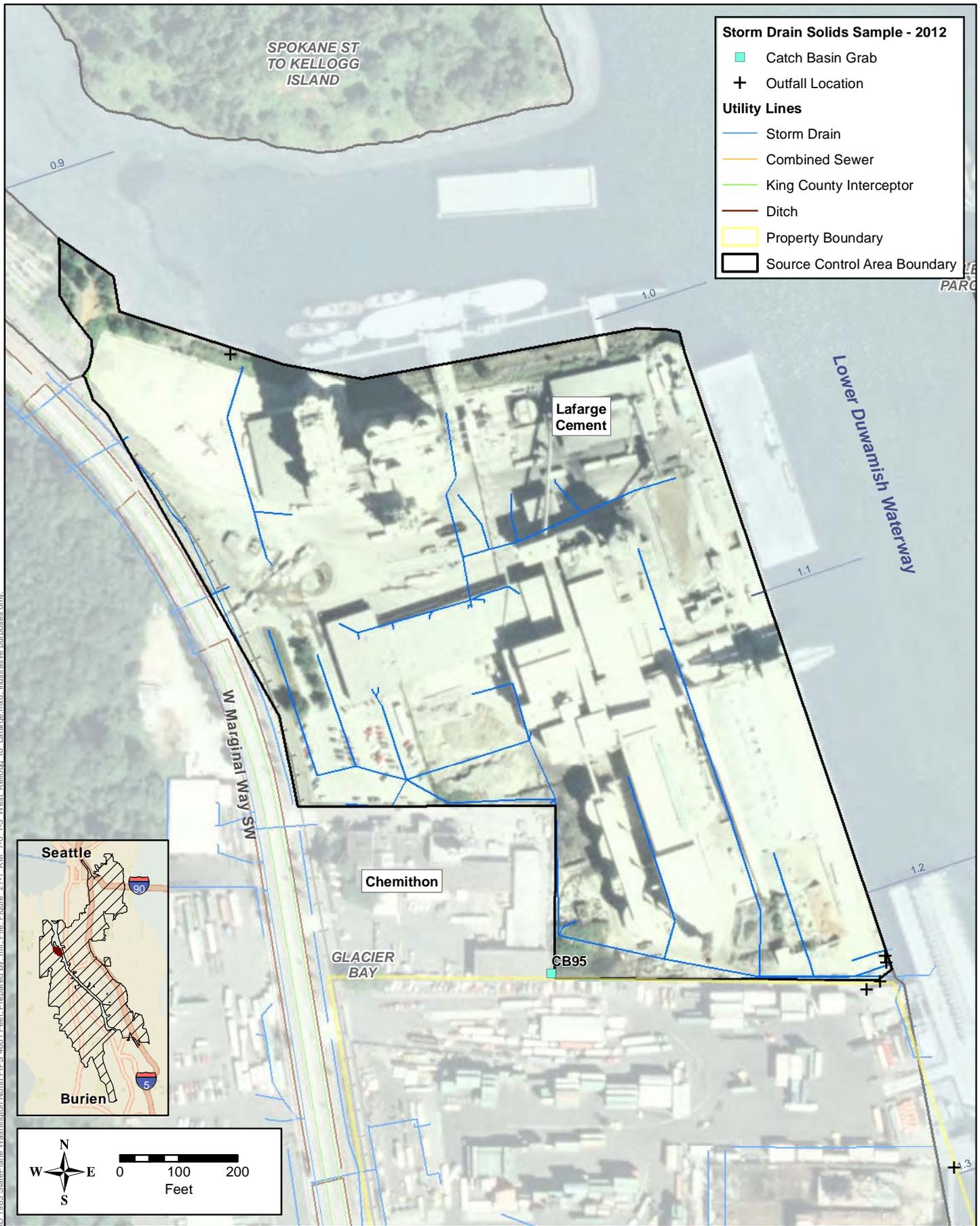
Chemical Class	Chemical	Onsite CB Solids
Metals	Copper	
	Zinc	
PCBs	PCBs, total	
PAHs	LPAH	
	HPAH	
Phthalates	BEHP	
	Butylbenzylphthalate	
	Dimethylphthalate	
Other SVOCs	Benzyl alcohol	
	Phenol	

Chemical Class	Chemical	Onsite CB Solids
TPH	TPH-oil	

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

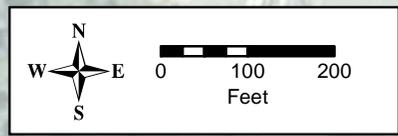
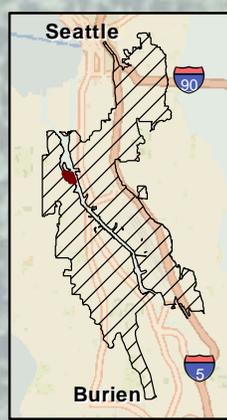
### 21.3 Facility-Specific Source Control Actions

- No facility-specific source control actions were conducted during the current reporting period.



- Storm Drain Solids Sample - 2012**
- Catch Basin Grab
  - +** Outfall Location
- Utility Lines**
- Storm Drain
  - Combined Sewer
  - King County Interceptor
  - Ditch
- Property Boundary
  - Source Control Area Boundary

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure 21-1 RM 1.0-1.3 West Kellogg to Lafarge.mxd. Illustrative purposes only.



**Figure 21-1. RM 1.0-1.3 West:  
Kellogg Island to Lafarge Cement  
Source Control Area**



## 22.0 RM 1.3-1.6 West (Glacier Bay)

The RM 1.3-1.6 West (Glacier Bay) source control area is shown in Figure 22-1. In addition to four properties adjacent to the LDW, this source control area includes portions of the SW Kenny Street SD basin. Information related to the SW Kenny Street SD basin is provided with the Terminal 115 source control area in Section 23.

<b>Location</b>	RM 1.3-1.6 West
<b>Chemicals of Concern</b>	Metals (arsenic, mercury, zinc, copper, lead, antimony, tin), dioxins/furans, PCBs, phthalates, PAHs, pentachlorophenol, other SVOCs, tributyltin
<b>Data Gaps Evaluation</b>	June 2007 (SAIC 2007f)
<b>SCAP</b>	December 2007 (Ecology 2007e)

Action items for the Glacier Bay source control area are listed in Table 3-3. A total of 30 source control action items have been identified; as of December 2012, 15 have been completed. Of the remaining 15 action items, five are considered high priority.

### 22.1 Business Inspections

- No business inspections were conducted in the Glacier Bay source control area during the current reporting period.

### 22.2 Source Tracing

- Sediment trap, in-line solids, and right-of-way solids samples collected by SPU in the SW Kenny Street SD basin are discussed with the Terminal 115 source control area in Section 23.
- SPU has collected 11 onsite catch basin samples within the Glacier Bay source control area. One catch basin sample (CB95) was collected from a private storm drain system during the current reporting period (Figure 22-1).
  - Copper (464 mg/kg), zinc (1,890 mg/kg), PCBs (2.2 mg/kg DW), and dimethylphthalate (1.1 mg/kg DW) exceeded the CSL/2LAET in sample CB95. In the past, the owner has cleaned the system to remove PCB-contaminated sediment that was believed to be related to paint found in the line, but contaminants continue to be present in this system.
  - In addition, BEHP was detected at 72 mg/kg DW in sample CB95; this is approximately 38 times the 2LAET, and is the highest concentration of BEHP found in any source tracing sample collected in the LDW during 2012.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical

concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 22-1. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Onsite CB Solids
Metals	Arsenic	
	Copper	☒
	Lead	
	Mercury	
	Zinc	☒
PCBs	PCBs, total	☒
PAHs	LPAH	
	HPAH	×
	cPAH	☒
Phthalates	BEHP	☒
	Butylbenzylphthalate	
	Dimethylphthalate	☒
Other SVOCs	2,4-Dimethylphenol	
	2-Methylnaphthalene	
	4-Methylphenol	
	Benzoic acid	
	Benzyl alcohol	
	Phenol	
TPH	TPH-diesel	☒
	TPH-oil	☒

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

## 22.3 Facility-Specific Source Control Actions

### Duwamish Shipyard

Duwamish Shipyard, Inc. (DSI) entered into an Agreed Order with Ecology on September 13, 2010. Under Agreed Order DE-6735, DSI will conduct an RI/FS at the site (Ecology 2010e).

- On February 1, 2012, DSI started construction on the Alaska Marine Lines Piling Replacement and Pier Maintenance Project.
- DSI completed stormwater line repair work on March 19, 2012.

On April 11, 2012, Ecology received an email with a summary of the stormwater line repair work that was completed in March. Ecology was not notified of this work in advance and DSI did not analyze soil samples for potential soil contamination.

- On May 17, 2012, Ecology received the draft Supplemental RI Work Plan. On August 9, 2012, Ecology sent DSI comments on this draft. On August 22, 2012, Ecology met with a DSI representative to discuss Ecology's comments and review updates made by DSI.
- In early October 2012, Ecology met with DSI representatives. On October 10, 2012, Ecology sent the Ecology Upland Proposal for the Work Plan, including a comment table and figure with specific sampling point locations.
- On December 5, 2012, Ecology sent a formal comment letter to DSI, requiring receipt of the Final Approvable Work Plan within 30 days. On December 18, 2012, Ecology received a letter requesting an extension until March 15, 2013. Ecology agreed to the extension. On December 19, 2012, Ecology received a Request for Dispute Resolution, objecting to the scope of additional site characterization work that Ecology required in the December 5, 2012, comment letter.

<b>Current Operations</b>	Equipment and container storage
<b>Historical Operations</b>	Repair and maintenance of floating vessels and equipment
<b>Address</b>	5658 West Marginal Way SW
<b>Facility/Site ID</b>	2071 (Duwamish Shipyard Inc)
<b>Chemicals of Concern</b>	Metals (arsenic, lead, mercury, tributyltin, cadmium, copper, zinc), PAHs, VOCs, petroleum hydrocarbons, phthalates, PCBs
<b>Media Affected</b>	Soil, groundwater, stormwater, sediment

## Glacier Northwest, Inc. / Former Reichhold Site

Glacier Northwest, Inc. and Reichhold, Inc. entered into an Agreed Order with Ecology on July 28, 2009. Under Agreed Order No. DE-6000, Glacier and Reichhold will conduct an RI/FS at the site (Ecology 2009d, 2009j).

- In January 12, 2012, Ecology's attorney received a letter from Reichhold's attorney requesting that Ecology name King County as a PLP and bring King County into the Agreed Order. Ecology responded that there is not credible evidence to issue a PLP letter to King County.
- On February 29, 2012, Ecology received independent sample results for soil and groundwater analysis for samples that were collected in November 2011.
- On April 11, 2012, Ecology sent a response to the Glacier Northwest Work Plan/SAP Approach Response Letter (dated December 21, 2011). In their response, Ecology identified requirements needed to complete the RI Work Plan. There was an Ecology Comment Table attached to the letter that listed the proposed changes to the draft Work Plan and the rationale for the request.
- On May 15, 2012, Ecology received a letter from the PLPs requesting authorization to conduct sediment sampling in May 2012 based on the proposal in the Glacier Work Plan/SAP Approach Response Letter (dated December 21, 2011). Ecology responded that there were requirements that still needed to be met prior to approval. Ecology sent a Revised Sediment Sampling Request Letter on May 16, 2012. On May 21, 2012, Ecology issued a Sediment Plan Approval letter. Sediment sampling occurred from May 21 to June 1, 2012. Sediment analytical results are expected in 2013.
- On May 16, 2012, Ecology received a Revised Final RI/FS Work Plan from Glacier Northwest. Following the review of this draft Work Plan, Ecology concluded that insufficient progress was made by the PLPs.
- On August 31, 2012, Ecology finalized, approved, and issued a Final Work Plan that was prepared by Ecology's contractors (Ecology 2012l, 2012m).
- On September 13, 2012, Glacier Northwest and Reichhold each sent a Notice of Dispute to Ecology. This notice was in response to an email Ecology sent to Glacier and Reichhold on August 31, 2012. In their Notice of Dispute, Glacier and Reichhold objected to Ecology's determination that the PLPs had made insufficient progress toward completion of the RI/FS Work Plan under the Agreed Order. Glacier and Reichhold also objected to Ecology's work plan based on that determination.

<b>Current Operations</b>	Cement terminal
<b>Historical Operations</b>	Lumber mill, chemical manufacturing, cement production
<b>Address</b>	5900-5902 West Marginal Way SW
<b>Facility/Site ID</b>	23881883 (Glacier Northwest Seattle Terminal) 67234947 (Glacier Northwest Marginal Way Truck Shop) 89139472 (Glacier NW Reichhold MTCA)
<b>Chemicals of Concern</b>	Metals (arsenic, lead, mercury, copper, zinc), PCBs, dioxins/furans, chlorophenols, TPH, VOCs, SVOCs
<b>Media Affected</b>	Soil, groundwater, surface water, sediment

Glacier Northwest and Reichhold noted several objections in the Notice of Dispute, including: drilling to deeper substrate, additional approval steps, stormwater sampling requirements, not including all applicable or relevant and appropriate requirements, inconsistencies that make compliance impossible, analytical laboratories cannot comply, the plan is inconsistent with the Agreed Order, and the plan includes significantly more samples and sampling events than previously required by Ecology. The PLPs also stated that they were unaware of Ecology’s decision to hire a contractor to prepare a Work Plan for their site, but were under the impression that Ecology would send them comments on the third draft Work Plan that the PLPs had submitted to Ecology (Oldham 2012).

Ecology met with the PLPs on September 24, 2012, to resolve objections noted in the dispute. Ecology sent draft preliminary responses to the PLPs on September 24, 2012, prior to the meeting. The PLPs noted additional concerns during the meeting and were given additional time to submit those issues. Following several exchanges between Ecology and the PLPs, Ecology issued the Project Coordinator’s Dispute Decision Letter, including responses to issues raised and changes to the Work Plan.

- On November 13, 2012, the PLPs elevated the dispute through a Request for Section Manager Review, as per the Agreed Order process for resolving disputes.
- On December 3, 2012, Ecology received the surface and subsurface sediment logs. Sediment sampling results are expected in 2013.

### N Terminal 115 (Former MRI Corporation)

Ecology and the Port of Seattle entered into an Agreed Order on March 2, 2011. Under Agreed Order DE-8099, the Port of Seattle will conduct an RI/FS and prepare a draft CAP at the site (Ecology 2011c).

Ecology met with the Port in November 2011 to discuss RI Work Plan revisions.

<b>Current Operations</b>	Leased to Gene Summy Lumber (lumber distribution)
<b>Historical Operations</b>	Tin reclamation; construction material supply; industrial lumber sales
<b>Address</b>	6000 West Marginal Way SW
<b>Facility/Site ID</b>	2177
<b>Chemicals of Concern</b>	Metals (arsenic, zinc, lead)
<b>Media Affected</b>	Soil, groundwater

- On January 17, 2012, Ecology received revised figures for the Work Plan based on a meeting with the Port in November 2011. On May 2, 2012, Ecology provided comments to the Port on their revised figures and Work Plan.
- On June 15, 2012, Ecology received an updated N Terminal 115 RI Work Plan, SAP, Quality Assurance Plan, Letter and Work Plan Comment Sheet.
- On December 5, 2012, SPU issued a notice of Corrective Action Required to a Port onsite tenant for several code violations noted in a November 28, 2011 inspection. SPU noted the following:
  - Lack of a spill prevention plan, training, and spill response containment;
  - Need to improve housekeeping practices;

- Need to clean out and cover storm drains; and
- Need to contain inside racks of galvanized metal.

### **Surplus Items**

- On October 25, 2012, the Seattle Department of Planning and Development announced that they were reviewing a Master Use Permit Application to install a stormwater pretreatment system on the Surplus Items property located at 5101 West Marginal Way SW. The purpose of this project is to install a pretreatment facility for pH reduction of site water prior to discharge to the City of Seattle/King County sewer system, as required by King County Industrial Waste. Pretreatment is needed to neutralize high pH leachate from cement kiln dust fill at the property. The proposed work consists of installing an 8-foot by 40-foot skid-mounted pretreatment module on a slab-on-grade concrete foundation. A 75-foot long gravel access road with a concrete entrance will be constructed to access the pretreatment facility. The project includes below grade pump and discharge vaults that are located within an environmental critical area. The SEPA checklist for the proposed project was submitted along with the permit application. Comments were accepted through November 7, 2012 (Seattle DPD 2012b).

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared by: mlf. File: Figure 22-1\_RM\_1-3\_1-6\_West\_GlacierBay.mxd. Illustrative purposes only.

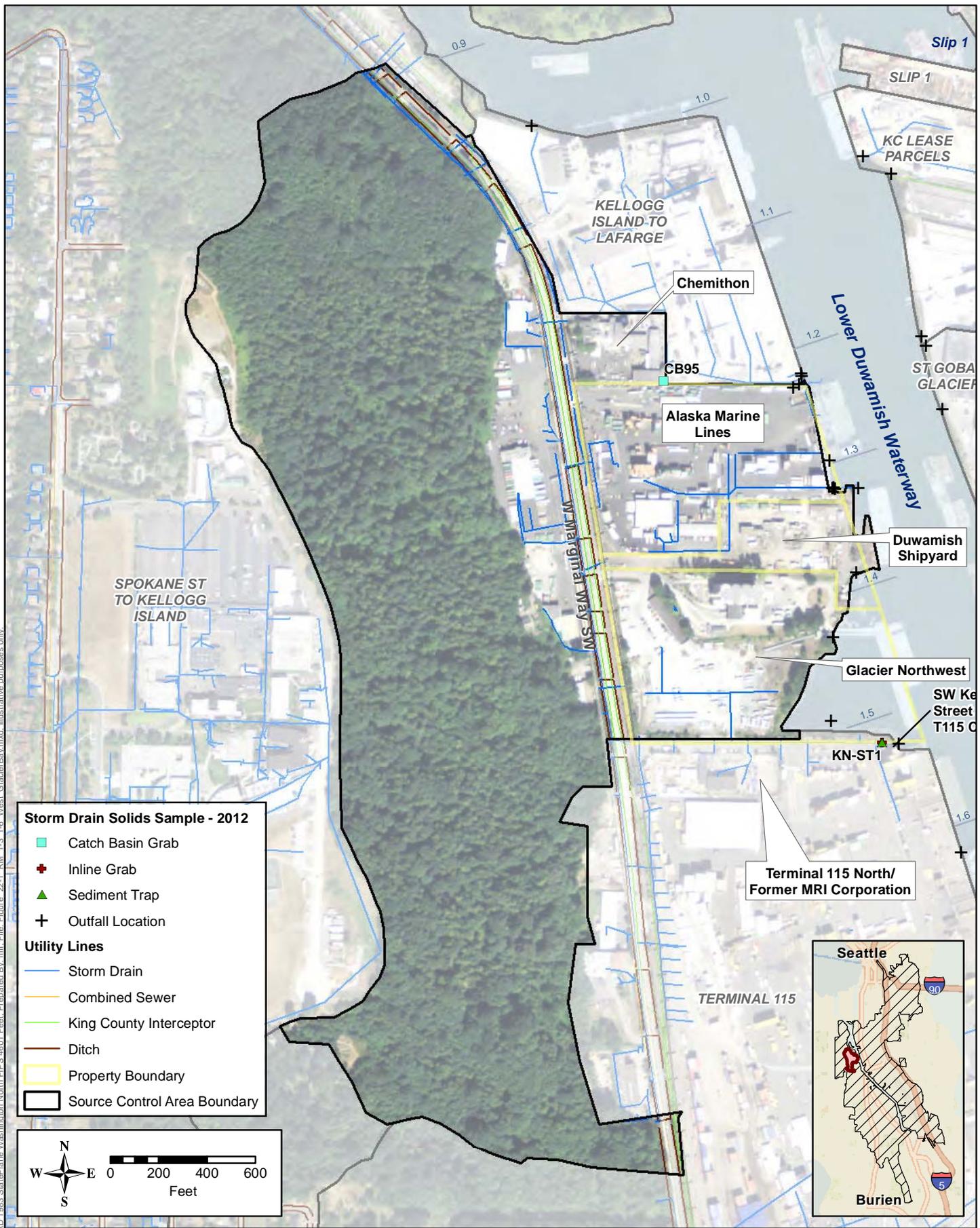


Figure 22-1. RM 1.3-1.6 West: Glacier Bay Source Control Area



## 23.0 RM 1.6-2.1 West (Terminal 115)

The RM 1.6-2.1 West (Terminal 115) source control area is shown in Figures 23-1 and 23-2. This area includes the Highland Park Way SW SD basin, the Terminal 115 CSO basin, and portions of the SW Kenny Street SD basin. The SW Kenny Street SD and the Terminal 115 CSO share an outfall within the RM 1.6-2.1 West source control area; consequently, this outfall is referred to as the SW Kenny Street SD/T115 CSO.

<b>Location</b>	RM 1.6-2.1 West
<b>Chemicals of Concern</b>	PCBs, PAHs, phthalates, other SVOCs, PCBs, tributyltin
<b>Data Gaps Evaluation</b>	June 2011 (SAIC 2011a)
<b>SCAP</b>	October 2011 (Ecology 2011j)

Action items for the Terminal 115 source control area are listed in Table 3-3. A total of 26 source control action items were identified in the SCAP. One of these action items has been canceled (the facility moved to a different location); of the 25 remaining action items, seven are considered high priority.

### 23.1 Business Inspections

- SPU conducted inspections in the Highland Park Way SW SD basin and the SW Kenny Street SD basin during the current reporting period (Appendix B).
  - SPU conducted a total of six business inspections at three facilities in the Highland Park Way SW SD basin, including three initial inspections and three follow-up inspections. All facilities were in compliance as of December 2012.
  - SPU conducted a total of three business inspections at two facilities in the SW Kenny Street SD basin, including two initial inspections and one follow-up inspection. These facilities were in compliance as of December 2012.
- Ecology conducted three inspections at two facilities during the current reporting period (Appendix C).
  - At Pioneer Industries (7000 Highland Park Way SW), Ecology identified a new location for sampling stormwater. Ecology noted that Pioneer Industries needs to implement additional housekeeping practices around trash compactor and dumpster and ensure monthly inspections are conducted and documented according to permit requirements.

### 23.2 Source Tracing

- SPU has collected six sediment trap samples, six in-line solids samples, one onsite catch basin sample, and three right-of-way catch basin samples in the Highland Park Way SW basin. Two sediment trap samples and one in-line solids samples were collected during the current reporting period.

- One sediment trap sample, HP-ST4, exceeded the 2LAET for BEHP (3.0 mg/kg DW) (Figure 23-2).
- In addition, SPU has collected one sediment trap sample, five in-line solids samples, and four right-of-way catch basin samples in the SW Kenny Street SD. During the current reporting period, one sediment trap sample and one in-line solids sample were collected in the SW Kenny Street drainage basin.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2, 23-1, and 23-2. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic				
	Copper				
	Lead		x		
	Mercury				
	Zinc	x	x		
PCBs	PCBs, total	x	x		
PAHs	LPAH				
	HPAH				
Phthalates	BEHP	☒	x		
	Butylbenzylphthalate	x	x		
	Dimethylphthalate				
	Di-n-octylphthalate				
Other SVOCs	2-Methylnaphthalene				
	4-Methylphenol				
	Benzyl alcohol				
	Dibenzofuran				
	N-Nitrosodiphenylamine				
	Phenol				
TPH	TPH-oil		☒		
	TPH-diesel				

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

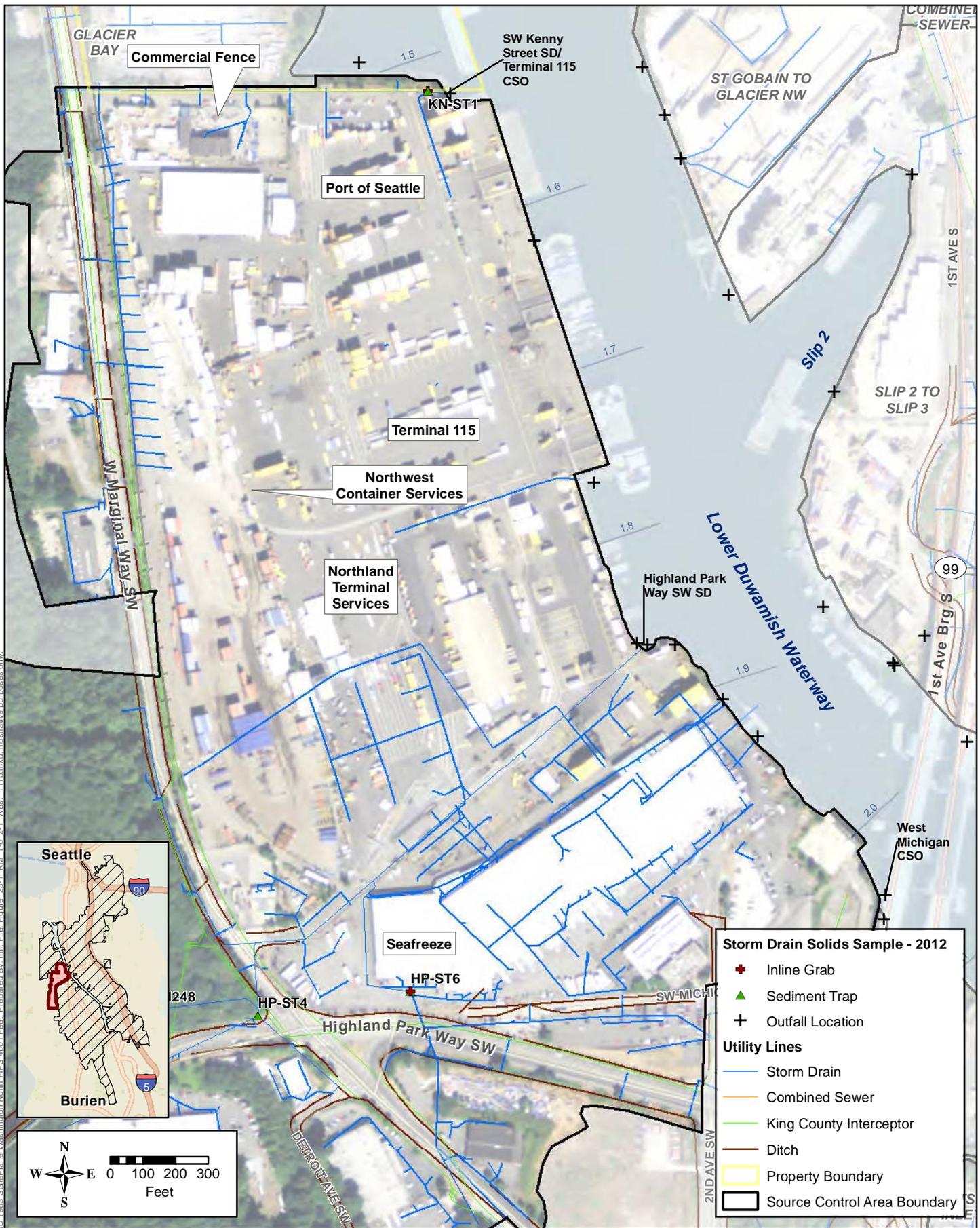
x = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

### **23.3 Facility-Specific Source Control Actions**

- No facility-specific source control actions were conducted during the current reporting period.

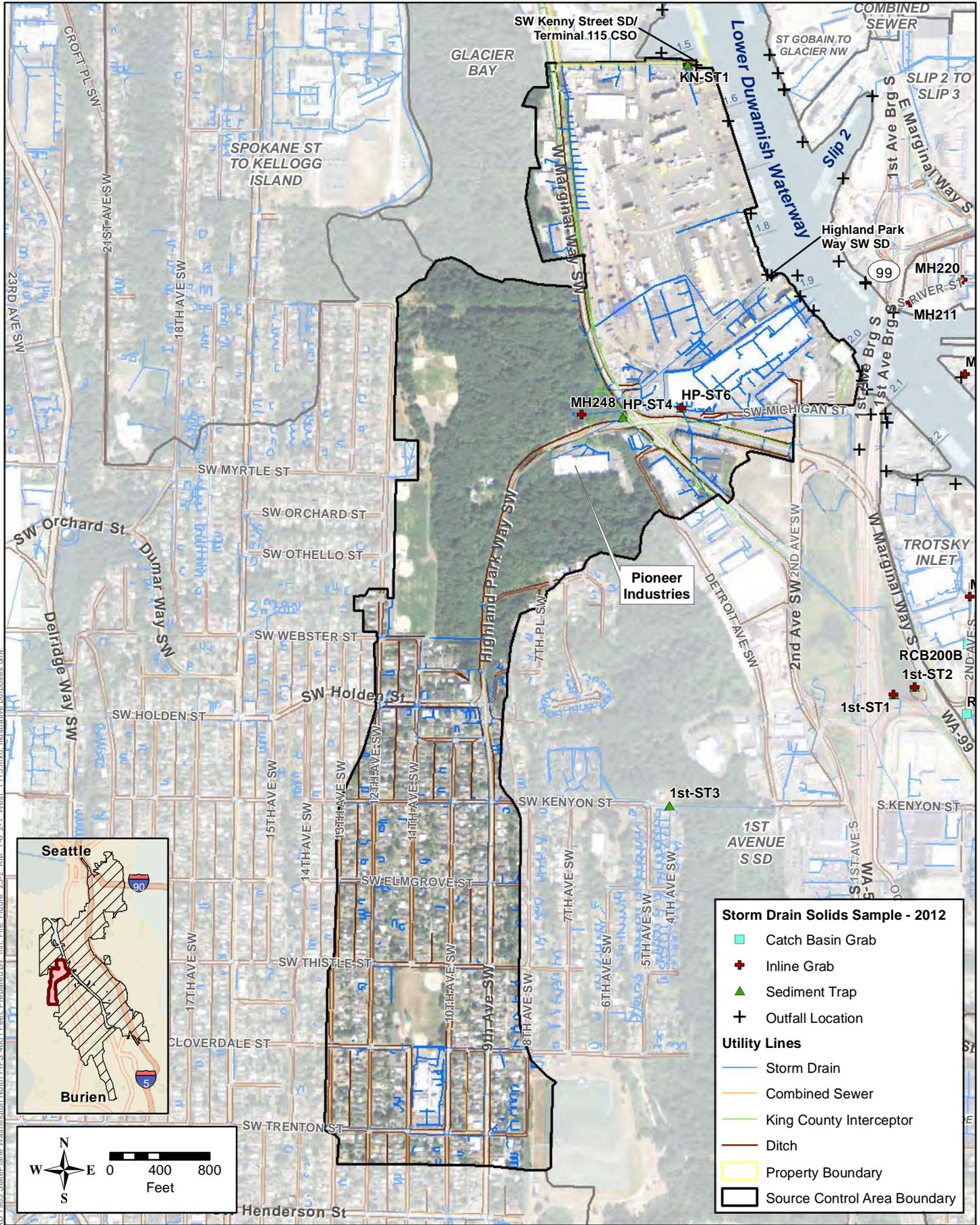
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Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared by: mlf. File: Figure\_23-1\_RM\_1-6\_2-1\_West\_T115.mxd. Illustrative purposes only.

**Figure 23-1. RM 1.6-2.1 West:  
Terminal 115 Source Control Area**





Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared by: mlf. File: Figure\_23-2\_RM\_1-6\_2-1\_West\_T115.mxd. Illustrative purposes only.

**Figure 23-2. RM 1.6-2.1 West:  
Terminal 115 Source Control Area  
Terminal 115 and Vicinity**



## 24.0 RM 2.1 West (1<sup>st</sup> Avenue S SD)

The RM 2.1 West (1<sup>st</sup> Avenue S SD) source control area, shown in Figure 24-1, includes the 1<sup>st</sup> Avenue S SD basin.

<b>Location</b>	RM 2.1 West
<b>Chemicals of Concern</b>	Mercury, PCBs, PAHs, phthalates, and other SVOCs
<b>Data Gaps Evaluation</b>	September 2012 (SAIC 2012c)
<b>SCAP</b>	Scheduled for completion in March 2013

The Data Gaps report for this source control area was finalized in September 2012 (SAIC 2012c). A SCAP was scheduled for completion in 2013, beyond the reporting period for this Source Control Status Report.

### 24.1 Business Inspections

- SPU conducted a total of 16 inspections at 10 facilities in the 1<sup>st</sup> Avenue S SD basin during the current reporting period, including nine initial inspections and seven follow-up inspections (Appendix B). One facility (Seaport Petroleum, 7800 Detroit Avenue SW) was identified by SPU as not in compliance as of the end of December 2012.
- Ecology conducted four inspections at four facilities within this source control area during the current reporting period (Appendix C).
  - Ecology determined that SeaFreeze Cold Storage is not eligible for a CNE and must submit an application for coverage under the ISGP.
  - Ecology sent a warning letter with a determination that SeaPort Fuels is a potentially significant contributor of pollutants to waters of the State of Washington and is subject to coverage under the ISGP.

### 24.2 Source Tracing

- SPU has collected 12 sediment trap samples, 19 in-line solids samples, and one onsite catch basin sample in the 1<sup>st</sup> Avenue S SD basin. During the current reporting period, four sediment trap samples and two in-line solids samples were collected from this drainage basin.
  - The highest concentrations of contaminants were generally found in sediment trap 1st-ST7, located on Olsen Place just west of 1<sup>st</sup> Avenue S in the southern portion of the source control area (Figure 24-1). This sediment trap contained total PCBs (1.35 mg/kg DW), phenanthrene (1.6 mg/kg DW), benzo(g,h,i)perylene (0.80 mg/kg DW), dibenzo(a,h)anthracene (0.32 mg/kg DW), fluoranthene (3.5 mg/kg DW), total cPAH (1.92 mg/kg DW), and BEHP (6.9 mg/kg DW) at concentrations above the 2LAET.

- One in-line sample, collected at location 1st-ST1, contained dimethylphthalate at 36 mg/kg DW, which is approximately 225 times the 2LAET. This sample also exceeded the 2LAET for BEHP and butylbenzylphthalate.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 24-1. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids
Metals	Mercury			
	Zinc	×	×	
PCBs	PCBs, total	☒	×	
PAHs	LPAH	☒		
	HPAH	☒		
	Total cPAH	☒		
Phthalates	BEHP	☒	☒	
	Butylbenzylphthalate	☒	☒	
	Dimethylphthalate		☒	
	Di-n-butylphthalate			
Other SVOCs	2-Methylphenol			
	4-Methylphenol			
	Benzoic acid			
	Phenol			
TPH	TPH-diesel			
	TPH-oil	☒	☒	

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

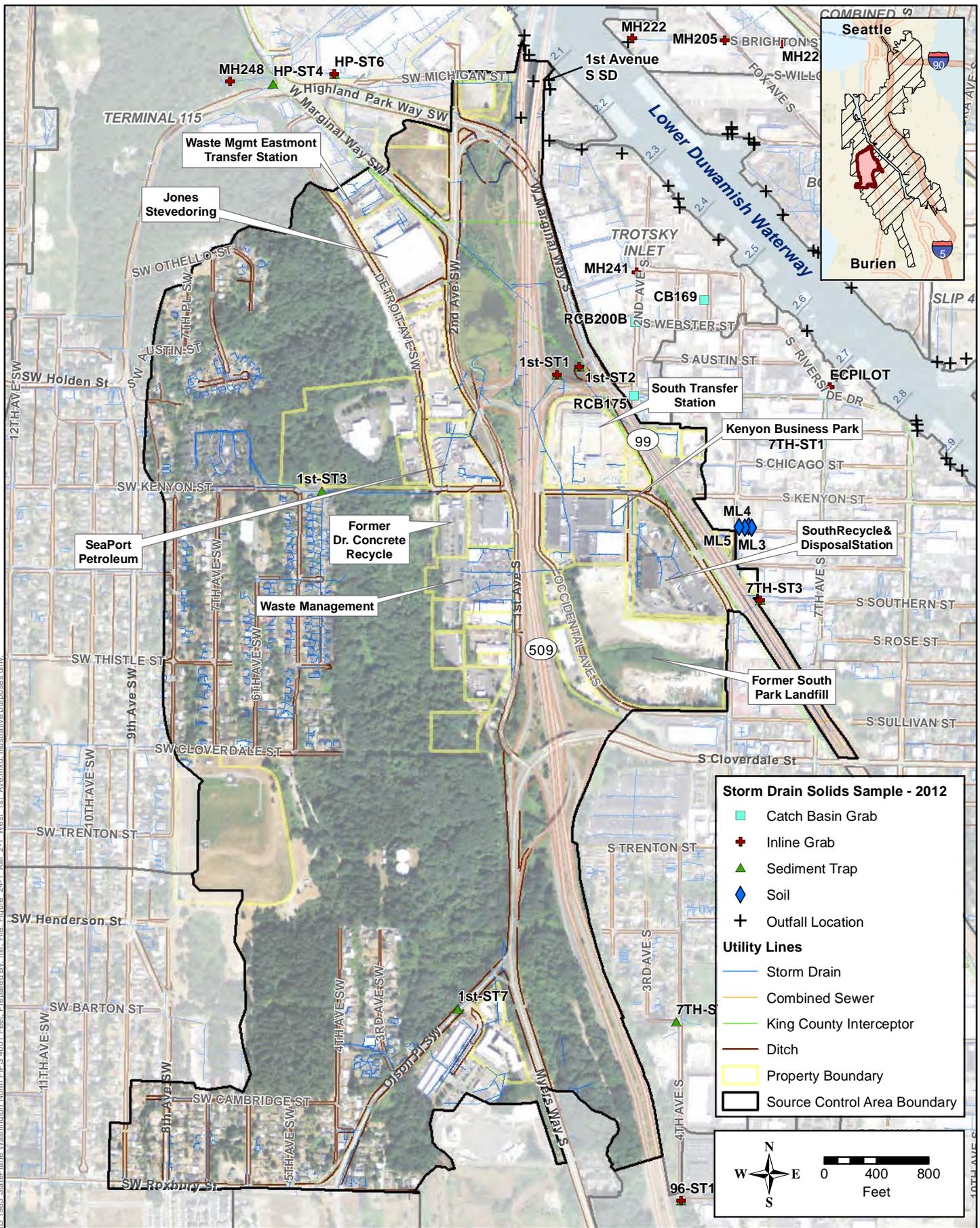
Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

### 24.3 Facility-Specific Source Control Actions

- Facility-specific source control action items will be identified in the SCAP for this source control area, which will be published in 2013. Source control actions completed after publication of the SCAP for the 1<sup>st</sup> Avenue S SD source control area will be documented in future Source Control Status Reports.



Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared by: mlf. File: Figure 24-1\_RM 2-1 West\_1st Ave.mxd. Illustrative purposes only.

Figure 24-1. RM 2.1 West:  
1st Avenue S SD Source Control Area



## 25.0 RM 2.2-3.4 West (Riverside Drive)

The RM 2.2-3.4 West (Riverside Drive) source control area, shown in Figure 25-1, includes the 7<sup>th</sup> Avenue S SD basin and the 8<sup>th</sup> Avenue CSO basin.

Ecology completed a Data Gaps Report for this source control area in April 2012 (SAIC 2012a). Ecology published the SCAP for the Riverside Drive source control area in August 2012 (Ecology 2012j).

<b>Location</b>	RM 2.2-3.4 West
<b>Chemicals of Concern</b>	Mercury, PCBs, PAHs, phthalates, 1,4-dichlorobenzene, 2,4-dimethylphenol, benzoic acid, benzyl alcohol, phenol, hexachlorobenzene
<b>Data Gaps Evaluation</b>	April 2012 (SAIC 2012a)
<b>SCAP</b>	August 2012 (Ecology 2012j)

Action items for the Riverside Drive source control area are listed in Table 3-3. A total of 17 source control action items were identified in the SCAP. Two of these action items have been completed; of the 15 remaining action items, three are considered high priority.

### 25.1 Business Inspections

- SPU conducted inspections in the 7<sup>th</sup> Avenue S SD and 8<sup>th</sup> Avenue CSO basins during the current reporting period (Appendix B).
  - SPU conducted a total of 41 inspections at 22 facilities in the 7<sup>th</sup> Avenue S SD basin, including 20 initial inspections and 21 follow-up inspections. One facility (Coast Crane Company, 8250 5<sup>th</sup> Avenue S) was not in compliance as of December 2012.
  - SPU conducted a total of one follow-up inspection in the 8<sup>th</sup> Avenue CSO basin. This facility was in compliance as of the end of December 2012.
  - SPU conducted one inspection at a facility with drainage directly to the LDW. This facility (Pacific Pile & Marine, 582 S Riverside Drive) was not in compliance as of December 2012.
- Ecology conducted 23 inspections at 16 facilities in this source control area during the current reporting period (Appendix B).
  - In July 2012 Ecology issued a \$14,000 penalty and Notice of Violation to Independent Metals for PCB discharges and violations of their ISGP. A follow-up Administrative Order will be issued in January 2013 requiring Independent Metals to expand coverage of their existing ISGP to include Plant 1 and the dirt lot on 7<sup>th</sup> Avenue S. Ecology is requiring Independent Metals to develop a SWPPP for the expanded areas and begin monitoring. The monitoring plan for all stormwater discharges will include PCBs.

## 25.2 Source Tracing

- To date, SPU has collected nine sediment trap samples, 20 in-line solids samples, three onsite catch basin samples, and 21 right-of-way catch basin samples in the 7<sup>th</sup> Avenue S SD basin. During the current reporting period, three sediment trap samples, four in-line solids samples, and one right-of-way catch basin sample were collected in this drainage basin (Appendix E).
- SPU has collected two right-of-way catch basin samples in the 8<sup>th</sup> Avenue CSO basin, and one onsite catch basin sample in an area of the source control area that discharges directly to the LDW. No samples were collected in these areas during the current reporting period.
- In addition, SPU collected 15 soil samples in the right-of-way following cleanup of contaminated soil adjacent to the Marine Lumber Service site during the current reporting period. Earlier sampling conducted by SPU in 2008 and 2011 confirmed that runoff from treated lumber stored on this site had contaminated soil in the right-of-way with arsenic (198 to 533 mg/kg in surface soil) and copper (410 to 3,240 mg/kg in surface soil). On November 15, 2011, Ecology issued Marine Lumber an Administrative Order requiring them to cleanup arsenic- and copper-contaminated soil in the ROW. Post-cleanup soil samples were collected along the edges of the excavation at depths of 0, 0 to 3, and 3 to 12 inches. Surface soil samples exceeded the CSL for arsenic (78 to 980 mg/kg DW) and copper (400 to 3,680 mg/kg) at multiple locations following cleanup. Contamination extended to depths of 12 inches in some locations.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figures 3-2 and 25-1. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic				
	Copper				
	Lead				
	Mercury				
	Zinc	x	☒		x
PCBs	PCBs, total	x	x		
PAHs	LPAH				
	HPAH				

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Phthalates	BEHP	☒	☒		
	Butylbenzylphthalate	×	×		
	Dimethylphthalate	☒			
	Di-n-butylphthalate				
	Di-n-octylphthalate				
Other SVOCs	2-Methylnaphthalene				
	2-Methylphenol				
	4-Methylphenol				
	Benzoic acid				
	Benzyl alcohol				
	Dibenzofuran				
	N-Nitrosodiphenylamine				
	Phenol				
TPH	TPH-diesel				
	TPH-oil		☒		

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

× = Exceedance of lower screening level was observed during the current reporting period (January through December 2012).

☒ = Exceedance of upper screening level was observed during the current reporting period (January through December 2012).

## 25.3 Facility-Specific Source Control Actions

### Independent Metals Plants 1 and 2

- In early 2012, Ecology, EPA, King County, and the City of Seattle conducted a source control investigation and sampling in the vicinity of Independent Metals Plants 1 and 2 to determine where runoff from these facilities is discharged. On January 24, 2012, Ecology and SPU inspected Plant 1 and observed significant petroleum sheening on the puddles at the unpaved parking lot located on 7<sup>th</sup> Avenue S.

A sample of stormwater runoff from the parking lot was collected as it flowed into the 7<sup>th</sup> Avenue S SD (Wright 2012a). The sample analysis revealed

<b>Current Operations</b>	Scrap metal sorting and processing
<b>Historical Operations</b>	Boat manufacturing, logging transport
<b>Address</b>	Plant 1: 703 S Monroe Street, 747 S Monroe Street, Plant 2: 816 S Kenyon Street
<b>Facility/Site ID</b>	16139 (Independent Metals Plant 2) 861945 (Silver Bay Logging) 95749157 (Former Workboats Northwest)
<b>Chemicals of Concern</b>	PCBs, metals, PAHs, phthalates, other SVOCs, and petroleum hydrocarbons
<b>Media Affected</b>	Stormwater, soil, groundwater

that very high concentrations of PCBs (7.2 µg/L) were present in the stormwater runoff sample (Wright 2012b). SPU and Ecology identified one or more PCB sources to the city storm drain system (7<sup>th</sup> Avenue S SD). They suspect that the PCBs were coming from one particular drop box parked on the lot (Wright 2012a). The PCB concentrations declined after Independent Metals made the changes requested by SPU and Ecology.

- Independent Metals is also working with King County to determine appropriate pretreatment for discharges of contaminated industrial stormwater from Plant 1 to the combined sewer (Flint 2012).

Ecology issued a \$14,000 penalty and Notice of Violation to Independent Metals in July 2012 for PCB discharges and violations of their ISGP (Ecology 2012g). Ecology required Independent Metals to develop a SWPPP for the expanded areas and begin monitoring. The monitoring plan for all stormwater discharges includes PCBs. A follow-up Administrative Order will be issued in January 2013 requiring Independent Metals to expand coverage of their existing stormwater permit to include Plant 1 and the dirt lot on 7<sup>th</sup> Avenue S.

**640 S Riverside Drive**

On February 24, 2009, SPU acquired parcels 5700 and 5710 via condemnation. SPU is planning to construct a new stormwater pump station/water quality treatment facility (PS/WQF) at this site.

The South Park PS/WQF Project involves construction of a pump station to allow the storm drain system to function under all tidal and storm conditions up to the 25-year storm. Construction of the PS/WQF is temporarily on hold pending re-evaluation of stormwater treatment technologies.

<b>Current Operations</b>	Planned construction of a new pump station and water quality treatment facility
<b>Historical Operations</b>	Metal fabrication, waterproofing service
<b>Address</b>	640 S Riverside Drive; 636 S Riverside Drive
<b>Facility/Site ID</b>	22726 (640 S Riverside Drive)
<b>Chemicals of Concern</b>	Arsenic, lead, PAHs, petroleum hydrocarbons, VOCs
<b>Media Affected</b>	Soil, groundwater

On July 8, 2009, SPU entered the VCP with Ecology. SPU submitted a CAP to Ecology on October 9, 2009. Ecology determined that, upon completion of the proposed cleanup, further remedial action would likely be necessary to clean up contamination at the property.

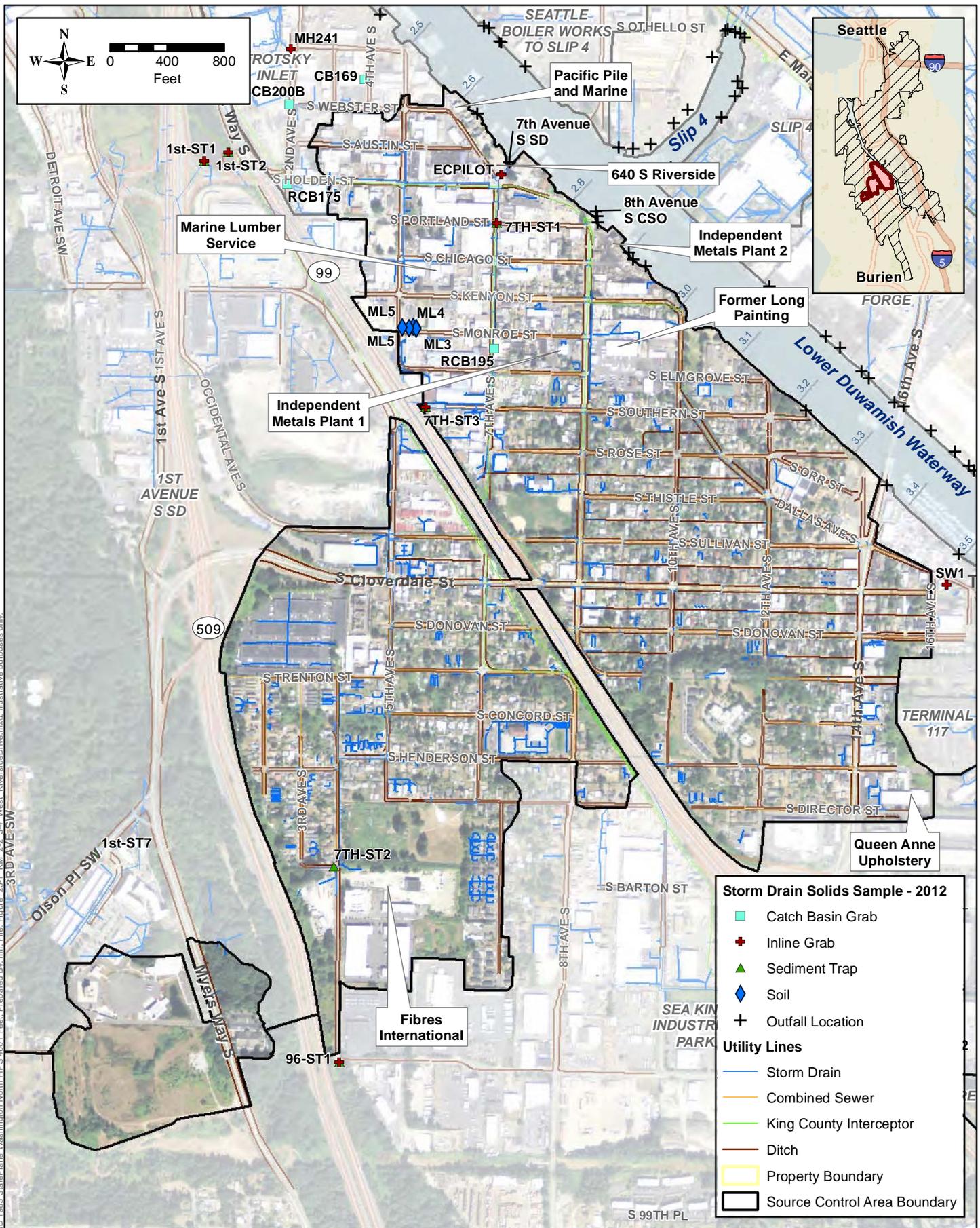
- During 2012, SPU removed contaminated soil at this property (Ecology 2012j). The quantity of soil removed was not available at the time this report was prepared.

## Fibres International

- On August 1, 2012, Ecology sent a warning letter to Fibres International for noncompliance with the ISGP. Ecology identified a number of issues during their site visit to the facility on June 6, 2012. Ecology required Fibres International to do the following within 30 days of receiving the notice of noncompliance: submit a SWPPP to Ecology, provide proper cover to minimize stormwater exposure to the paper bundles stored outside, conduct bin and drop box sand and painting activities under cover or indoors, and immediately stop the discharge of process wastewater to the storm drain system (Ecology 2012k).
- On August 30, 2012, Fibres International submitted a response to Ecology's warning letter. They enclosed an updated SWPPP for the facility and stated that they are implementing corrective actions to address the items mentioned in Ecology's letter.

<b>Current Operations</b>	Business is relocating
<b>Historical Operations</b>	Recycled glass collection
<b>Address</b>	9208 4 <sup>th</sup> Avenue S
<b>Facility/Site ID</b>	8610624
<b>Chemicals of Concern</b>	Metals
<b>Media Affected</b>	Stormwater

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Coordinate System: NAD 1983 StatePlane, Washington North FIPS 4601 Feet, Prepared By: mlf, File: Figure\_25-1\_RM\_2-2\_3-4\_West\_RiversideDrive.mxd, Illustrative purposes only.

**Figure 25-1. RM 2.2-3.4 West:  
Riverside Drive Source Control Area**



- Storm Drain Solids Sample - 2012**
- Catch Basin Grab
  - + Inline Grab
  - ▲ Sediment Trap
  - ◆ Soil
  - + Outfall Location
- Utility Lines**
- Storm Drain
  - Combined Sewer
  - King County Interceptor
  - Ditch
  - Property Boundary
  - Source Control Area Boundary

## 26.0 RM 3.8-4.2 West (Sea King Industrial Park)

The RM 3.8-4.2 West (Sea King Industrial Park) source control area (Figure 26-1) includes the S 96<sup>th</sup> Street SD basin and portions of the 8<sup>th</sup> Avenue CSO basin. Ecology started work on a Data Gaps report for this source control area during the current reporting period. Ecology plans to complete the Data Gaps Report and SCAP for this source control area in 2013.

<b>Location</b>	RM 3.8-4.2 West
<b>Chemicals of Concern</b>	Arsenic, mercury, zinc, butylbenzylphthalate, PAHs, benzyl alcohol, PCBs, pesticides, dioxins/furans
<b>Data Gaps Evaluation</b>	Scheduled for completion in May 2013
<b>SCAP</b>	Scheduled for completion in August 2013

### 26.1 Business Inspections

- SPU conducted a total of five inspections at four facilities in the S 96<sup>th</sup> Street SD basin during the current reporting period, including four initial inspections and one follow-up inspection (Appendix B). All of these facilities were identified by SPU as in compliance as of the end of December 2012.
- Ecology conducted 10 inspections at eight facilities in the Sea King Industrial Park source control area during the current reporting period (Appendix C).
- King County conducted three inspections at two businesses in this source control area, (Appendix D). Ace Galvanizing was inspected jointly with Ecology to address concerns with zinc entering the storm drain system.

### 26.2 Source Tracing

- SPU has collected nine sediment trap samples, 14 in-line solids samples, and eight right-of-way catch basin samples in the S 96<sup>th</sup> Street SD basin. Three sediment trap samples and three in-line solids samples were collected during the current reporting period.
  - Zinc, butylbenzylphthalate, and dimethylphthalate concentrations exceeded the SQS/LAET in at least one sample during 2012. No exceedances of the CSL/2LAET were observed.
- EPA collected storm drain solids samples in the S 96<sup>th</sup> Street SD basin during 2011 and 2012. In-line samples were collected at eight locations on November 7, 2011, and an additional seven locations on April 4, 2012 (Figure 26-1). Concentrations of the following compounds significantly exceeded screening levels: BEHP (1.4 to 70 mg/kg DW), butylbenzylphthalate (0.074 to 19 mg/kg DW), dimethylphthalate (0.089 to 3.8 mg/kg DW), benzyl alcohol (0.094 to 9.5 mg/kg DW), and zinc (469 to 99,200 mg/kg DW).
  - Phthalate concentrations were particularly high at 2012 sampling locations KC-04 (along S Director Street) and KC-05 (along S 95<sup>th</sup> Street near Delta Marine), and

at 2011 sampling locations C1 and C2 (S 96<sup>th</sup> Street and 8<sup>th</sup> Avenue S) (KTA 2012d).

- Zinc was detected at concentrations of 99,200 mg/kg DW at 2011 sampling location KCS96A1 (along S 96<sup>th</sup> Street, near Ace Galvanizing), and at 12,100 mg/kg DW at location KCS96B (approximately 200 feet downstream of KCS96A1 along S 96<sup>th</sup> Street).
- Benzyl alcohol was detected at concentrations significantly above the CSL at several locations along S 96<sup>th</sup> Street during 2011 sampling.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). An “X” indicates that the chemical concentration exceeded the lower screening level (SQS/LAET) during the current reporting period (2012). An “X” surrounded by a box indicates that the chemical concentration exceeded the upper screening level (CSL/2LAET) during 2012. Complete sample results for the current reporting period are presented in Appendix E; sample locations are shown in Figure 26-1. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps	In-line Solids	Right-of-Way CB Solids
Metals	Copper		☒	
	Lead			
	Zinc	×	☒	
PCBs	PCBs, total		☒	
PAHs	LPAH		☒	
	HPAH		☒	
	Total cPAH	NA	☒	NA
Phthalates	BEHP		☒	
	Butylbenzylphthalate		☒	
	Dibutylphthalate			
	Dimethylphthalate		☒	
Other SVOCs	2-Methylphenol			
	4-Methylphenol		☒	
	Benzoic Acid		☒	
	Benzyl alcohol		☒	
	N-Nitrosodiphenylamine		☒	
	Pentachlorophenol			
	Phenol		☒	
TPH	TPH-diesel		☒	
	TPH-oil		☒	

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

Data for “Other SVOCs” from SPU were unavailable for the current reporting period.

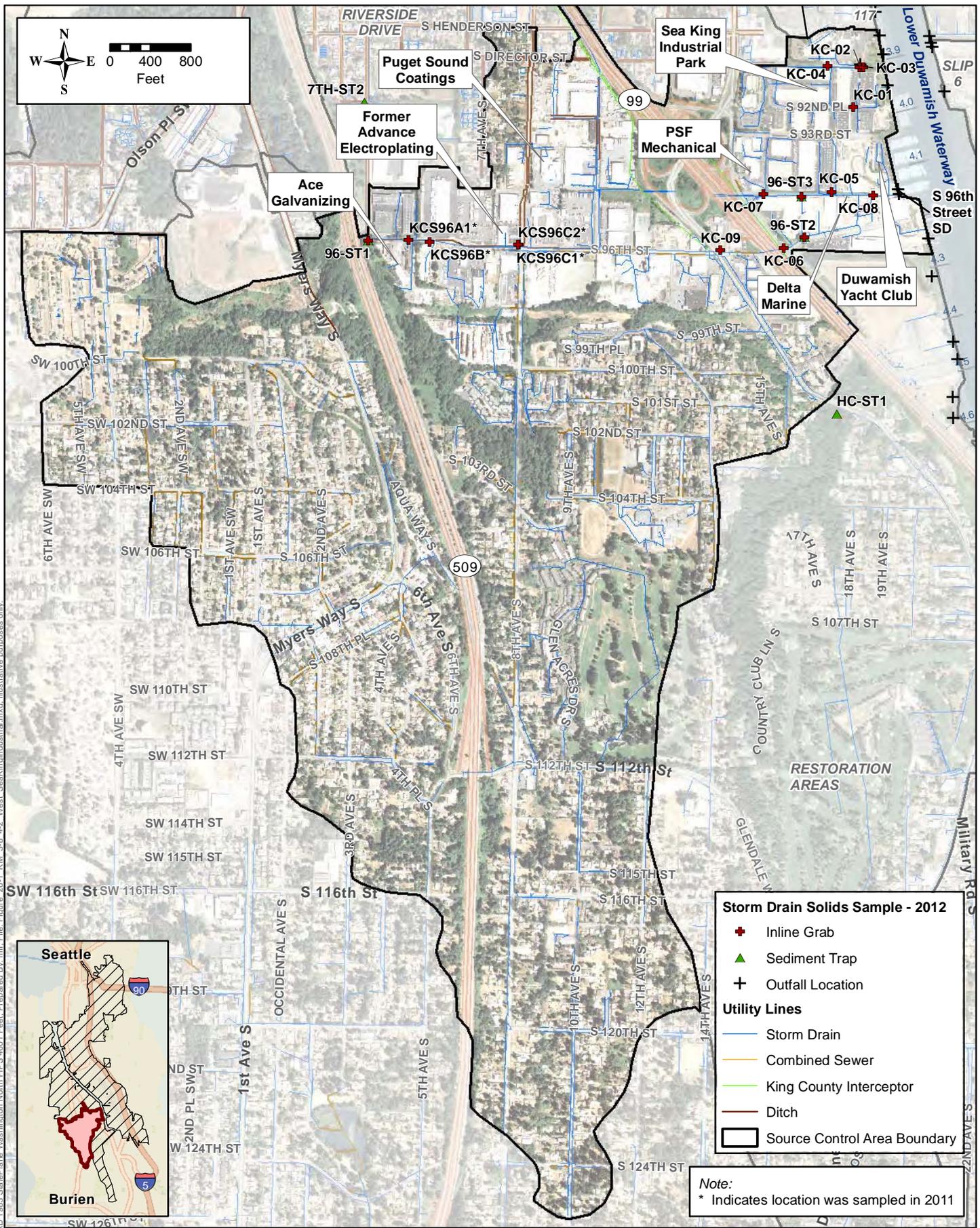
× = Exceedance of SQS/LAET was observed during the current reporting period (January through December 2012).

☒ = Exceedance of CSL/2LAET was observed during the current reporting period (January through December 2012).

### **26.3 Facility-Specific Source Control Actions**

- Facility-specific source control action items will be identified in the SCAP for this source control area, which will be published in 2013. Source control actions completed after publication of the SCAP for the Sea King Industrial Park source control area will be documented in future Source Control Status Reports.

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**Figure 26-1. RM 3.8-4.2 West:  
Sea King Industrial Park  
Source Control Area**

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. File: Figure\_26-1\_RM\_3.8\_4.2\_West\_SeaKingIndustrial.mxd. Illustrative purposes only.

## 27.0 RM 4.2-4.8 West (Restoration Areas)

The RM 4.2-4.8 West (Restoration Areas) source control area includes the Hamm Creek SD basin. Ecology started work on a Data Gaps report for this source control area during the current reporting period. Ecology plans to complete the Data Gaps Report and SCAP for this source control area in 2013.

<b>Location</b>	RM 4.2-4.8 West
<b>Chemicals of Concern</b>	Arsenic, cadmium, silver PAHs, butylbenzylphthalate, phenols, chlorobenzenes, PCBs, pesticides, dioxins/furans
<b>Data Gaps Evaluation</b>	Scheduled for completion in July 2013
<b>SCAP</b>	Scheduled for completion in September 2013

### 27.1 Business Inspections

- King County conducted two business inspections at two facilities in the Restoration Areas source control area during the current reporting period (Appendix D).

### 27.2 Source Tracing

- SPU has collected three sediment trap samples, three in-line solids samples, two onsite catch basin samples, and three right-of-way catch basin samples in the Hamm Creek SD basin. One sediment trap sample was collected during the current reporting period.
- EPA collected one storm drain solids sample in the Hamm Creek basin during August 2011. Concentrations of 2,4-dimethylphenol (0.04 mg/kg DW) and hexachlorobutadiene (0.10 mg/kg DW) exceeded the SQS/LAET, but did not exceed the CSL/2LAET.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Shaded cells indicate that the chemical concentration exceeded a screening level sometime in the past (including the current reporting period). No samples exceeded screening levels during the current reporting period. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Trap	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Zinc				
HPAH	Fluoranthene				
Phthalates	BEHP				
	Butylbenzylphthalate				
Other SVOCs	4-Methylphenol				
TPH	TPH-diesel				
	TPH-oil				

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2012).

### **27.3 Facility-Specific Source Control Actions**

- Facility-specific source control action items will be identified in the SCAP for this source control area, which will be published in 2013. Source control actions completed after publication of the SCAP for the Restoration Areas source control area will be documented in future Source Control Status Reports.

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## **Appendix A**

### **LDW Source Control Schedule**

## Basic Assumptions for Creating Schedule and Timeline

A set of basic assumptions was used to model the scenario for those tasks yet to be started or completed. For sites where work has already begun, actual dates were used wherever possible.

The following process assumptions were made:

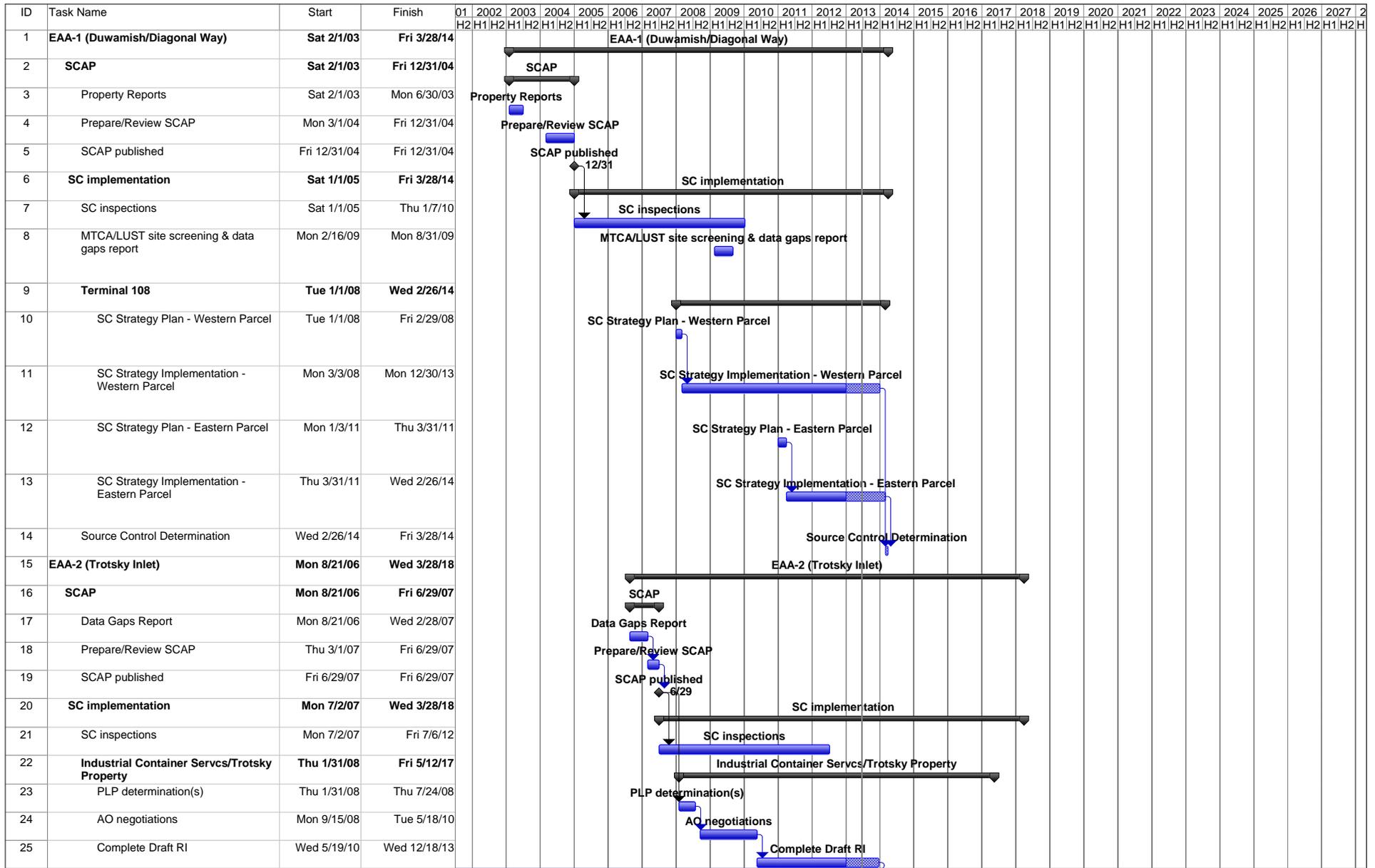
- For areas where a SCAP has not been completed, each SCAP yields one site where soil or groundwater contamination requires cleanup to stop contamination or recontamination of sediments.
- For areas where a SCAP has been completed, each site identified in the SCAP that requires cleanup to stop contamination or recontamination of sediments will be shown on the chart if enough information is available to do so.
- Upland site cleanup is a critical path for source control for most sediment cleanup areas.
- Only sites that require cleanup or source control for the LDW Superfund contaminants of concern will be addressed in this schedule.
- This schedule does not include sites involving chlorinated solvents, pesticides or those actions needed to protect the water column.
- Ecology will use the MTCA rules and procedures for cleanup.
- All sites will require an administrative order, an RI/FS, a cleanup action plan, and, if necessary, one or more interim action plans.
- Once a site manager is assigned, an Agreed Order takes approximately 26 months to complete, as follows:
  - Credible evidence exists to support issuing a preliminary PLP notice letter to the owner/operator within three to six months of publication of the SCAP, if a site manager is available.
  - Owner/operator does not respond to preliminary PLP letter until the last day of the 30-day response period.
  - PLP determination letter is sent one to three months after receiving the owner/operator response.
  - No new potential PLPs are identified who must be notified and included in negotiations.
  - Negotiations for an Agreed Order begin 30 days after Ecology sends the PLP determination letter.
  - Negotiations are complete within twelve to eighteen months of start of negotiations.
  - The public comment period takes 90 days and includes 30 days to prepare, 30 days for comment, and 30 days or more for responses.

- The draft RI takes 24 to 30 months. This includes sampling plans, field work, and first draft and final draft RI reports.
- The draft RI will identify interim actions necessary to control sources of sediment contamination/recontamination.
- An interim action plan will be started upon Ecology's acceptance of the draft RI, or as deemed necessary and appropriate by Ecology.
- The interim actions may include uplands and/or in-water work.
- Interim actions to stop the release of contaminants are completed within 24 to 30 months after completion of the draft RI. This includes negotiating the scope, developing the work plan, review and approval of design and monitoring plans, completion of the SEPA checklist, a 30 day public comment period, issuance of a DNS or Mitigated DNS, obtaining necessary permits, field work, and Ecology acceptance of the final action and monitoring reports.
- Monitoring of the interim action starts two months after completion of field work and continues for 12 months (assume quarterly monitoring), for a total of 14 months, or more.
- Ecology accepts a compliance monitoring report four months after the end of the monitoring period, or eighteen months after the start of monitoring. Ecology evaluates the effectiveness of the source control and makes a determination.

The staffing scenario is based on known or anticipated assignments as of April 2013. The following staffing assumptions were made:

- A full-time site manager may be able to handle at most a total of four sites depending on the complexity. Some sites, such as NBF-GTSP, require 100% of a site manager's time.
- A full-time site manager, with no existing workload, can initially handle two sites, starting six months apart. "Starting" means initial file review to prepare the Preliminary PLP notice letter.
- Eighteen months after starting the first site, a full-time site manager will start file review for a third site. Six months later, they will start work on a fourth site.
- Once a site manager is assigned to four sites (or fewer, depending on the complexity), he or she can start work on a new site approximately 18 months after completion of the draft RI for an existing site.
- Three full-time site managers and two part-time site managers are currently assigned exclusively to the LDW. Others will be needed.
- Work is underway at EAA-1 (Duwamish/Diagonal Way). The work at EAA-1 is being conducted by the Port of Seattle at Terminal 108 under the Voluntary Cleanup Program (VCP). The Port is working with Ecology.
- Work is underway at three sites where EPA is lead for source control:

- EAA-4 (Boeing Plant 2/Jorgensen Forge bank)
- EAA-5 (Terminal 117)
- Rhone-Poulenc Site (RM 3.9-4.3 East: Slip 6)
- Work has started at the following Ecology-lead sites; site managers for these sites are not dedicated to work on the LDW. They are not included in the projected schedule for full-time site managers:
  - Fox Avenue Building (RM 2.0-2.3 East: Slip 3 to Seattle Boiler Works)
  - South Park Landfill (RM 2.1 West: 1<sup>st</sup> Avenue S SD)
- Work has started at the following Ecology-lead sites:
  - North Boeing Field/Georgetown Steam Plant (EAA-3: Slip 4)
  - Crowley Marine Services (EAA-3: Slip 4)
  - Trotsky Property (EAA-2: Trotsky Inlet)
  - Boeing Isaacson/Thompson (EAA-6: Boeing Isaacson/Central KCIA)
  - 8801/Paccar Site (RM 3.9-4.3 East: Slip 6)
  - Duwamish Shipyard (RM 1.3-1.6 West: Glacier Bay)
  - Port of Seattle Terminal 115 N (RM 1.3-1.6 West: Glacier Bay)
  - Glacier Northwest/Reichhold (RM 1.3-1.6 West: Glacier Bay)
  - Douglas Management Company (RM 2.1-2.2 West: Trotsky Inlet)
  - Duwamish Marine Center (RM 1.7-2.0 East: Slip 2 to Slip 3)
  - Jorgensen Forge Uplands (EAA-4: Boeing Plant 2 to Jorgensen Forge).
- Site managers will need to be added to manage work at additional sites, subject to availability of positions and funding. Current TCP policy is that site managers must be engineers or hydrogeologists.
- Sufficient legal, technical and public involvement support need to be commensurate with the site management work and may need to increase as the number of sites increases.
- If legal, technical and public involvement support is not added as the number of sites increases, new site investigations and cleanups will not be started until resources are available.

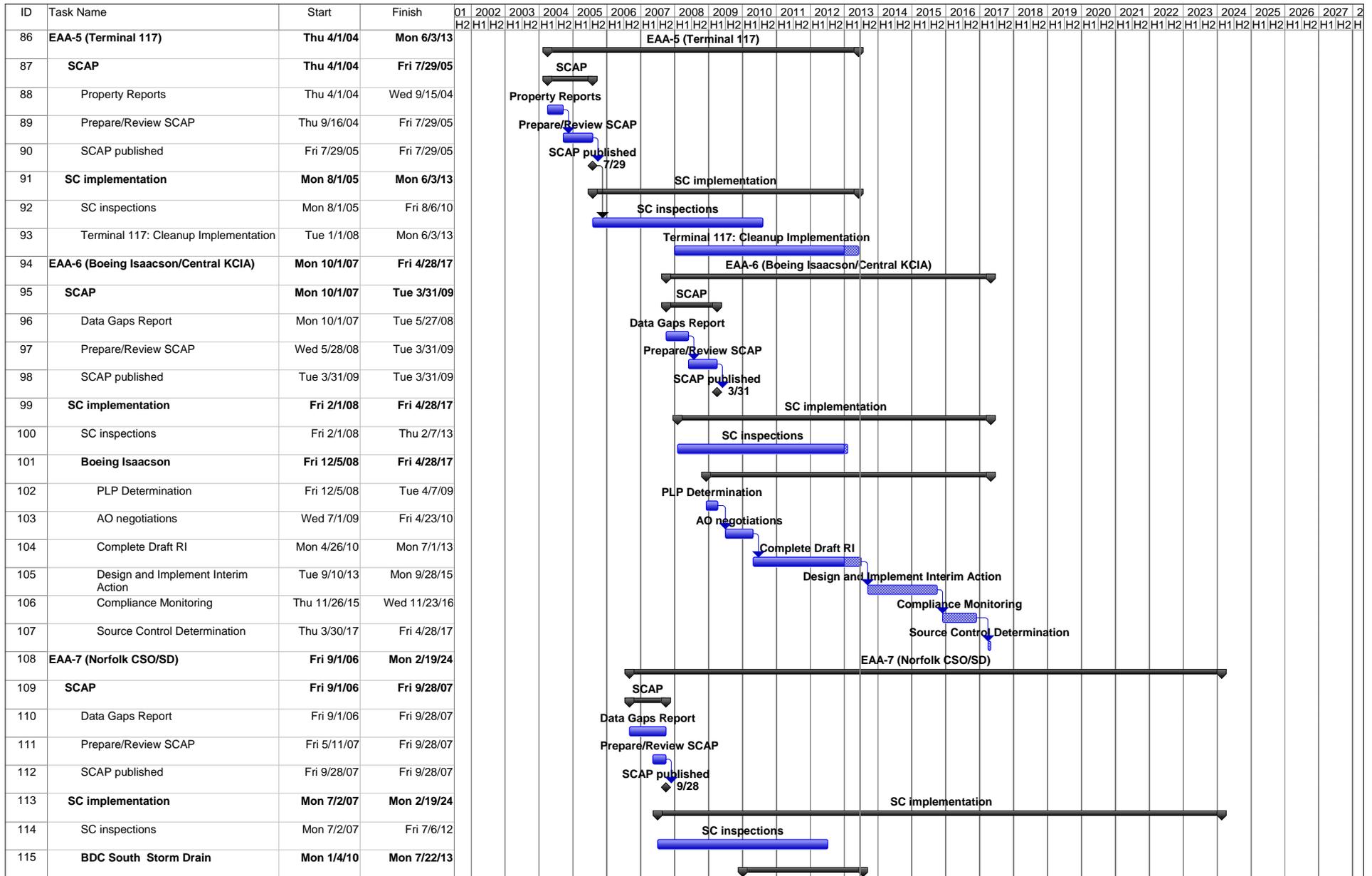


Project: LDW SC functional level Date: Fri 6/21/13	Task		External Tasks		Manual Task		Finish-only	
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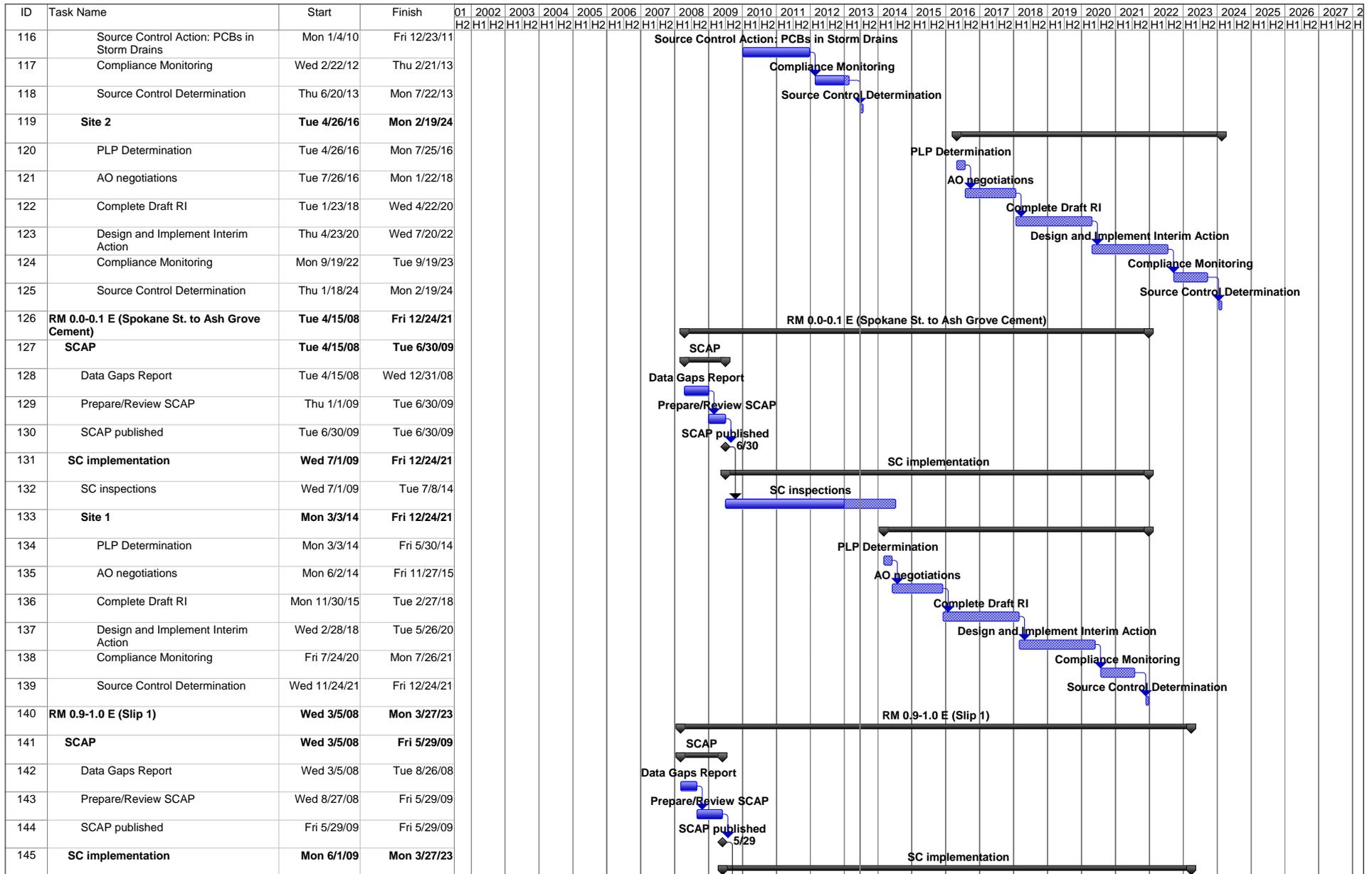
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26	Design and Implement Interim Action	Thu 12/19/13	Wed 3/16/16																													
27	Compliance Monitoring	Mon 5/16/16	Fri 5/12/17																													
28	Source Control Determination	Mon 9/11/17	Fri 10/20/17																													
29	<b>Douglas Mgmt Company</b>	<b>Thu 1/31/08</b>	<b>Wed 3/28/18</b>																													
30	PLP determination(s)	Thu 1/31/08	Tue 7/22/08																													
31	AO negotiations	Mon 9/15/08	Fri 5/6/11																													
32	Complete Draft RI	Mon 5/9/11	Mon 5/26/14																													
33	Design and Implement Interim Action	Tue 5/27/14	Mon 8/22/16																													
34	Compliance Monitoring	Thu 10/20/16	Wed 10/18/17																													
35	Source Control Determination	Thu 2/15/18	Wed 3/28/18																													
36	<b>EAA-3 (Slip 4)</b>	<b>Mon 2/3/03</b>	<b>Fri 6/24/22</b>																													
37	<b>SCAP</b>	<b>Mon 5/3/04</b>	<b>Wed 2/28/07</b>																													
38	Property Reports	Mon 5/3/04	Wed 2/28/07																													
39	Prepare/Review SCAP	Wed 5/25/05	Mon 7/31/06																													
40	SCAP published	Mon 7/31/06	Mon 7/31/06																													
41	<b>SC implementation</b>	<b>Mon 2/3/03</b>	<b>Fri 6/24/22</b>																													
42	SC inspections	Mon 2/3/03	Thu 2/7/08																													
43	<b>NBF/GTSP Site</b>	<b>Fri 4/20/07</b>	<b>Fri 6/24/22</b>																													
44	PLP determination(s)	Fri 4/20/07	Fri 4/20/07																													
45	NBF/GTSP AO negotiations	Thu 11/1/07	Thu 8/14/08																													
46	<b>Complete Draft RI</b>	<b>Mon 10/13/08</b>	<b>Mon 11/24/14</b>																													
47	Supplemental Data Gaps Report	Mon 10/13/08	Mon 8/3/09																													
48	Stormwater Sampling 2009-2010	Tue 9/1/09	Mon 6/28/10																													
49	Stormwater Sampling 2010-2011	Tue 9/7/10	Mon 5/30/11																													
50	I&I Study	Tue 2/2/10	Mon 2/28/11																													
51	Interim Actions	Tue 8/4/09	Mon 1/30/12																													
52	RI/FS Work Plan	Tue 3/1/11	Fri 6/21/13																													
53	RI SAP/QAPP/HSP	Fri 6/7/13	Mon 9/30/13																													
54	Draft RI Report	Tue 10/1/13	Mon 11/24/14																													
55	FS and Draft CAP Complete	Wed 4/1/15	Fri 2/26/16																													

Project: LDW SC functional level Date: Fri 6/21/13	Task		External Tasks		Manual Task		Finish-only		Inactive Milestone
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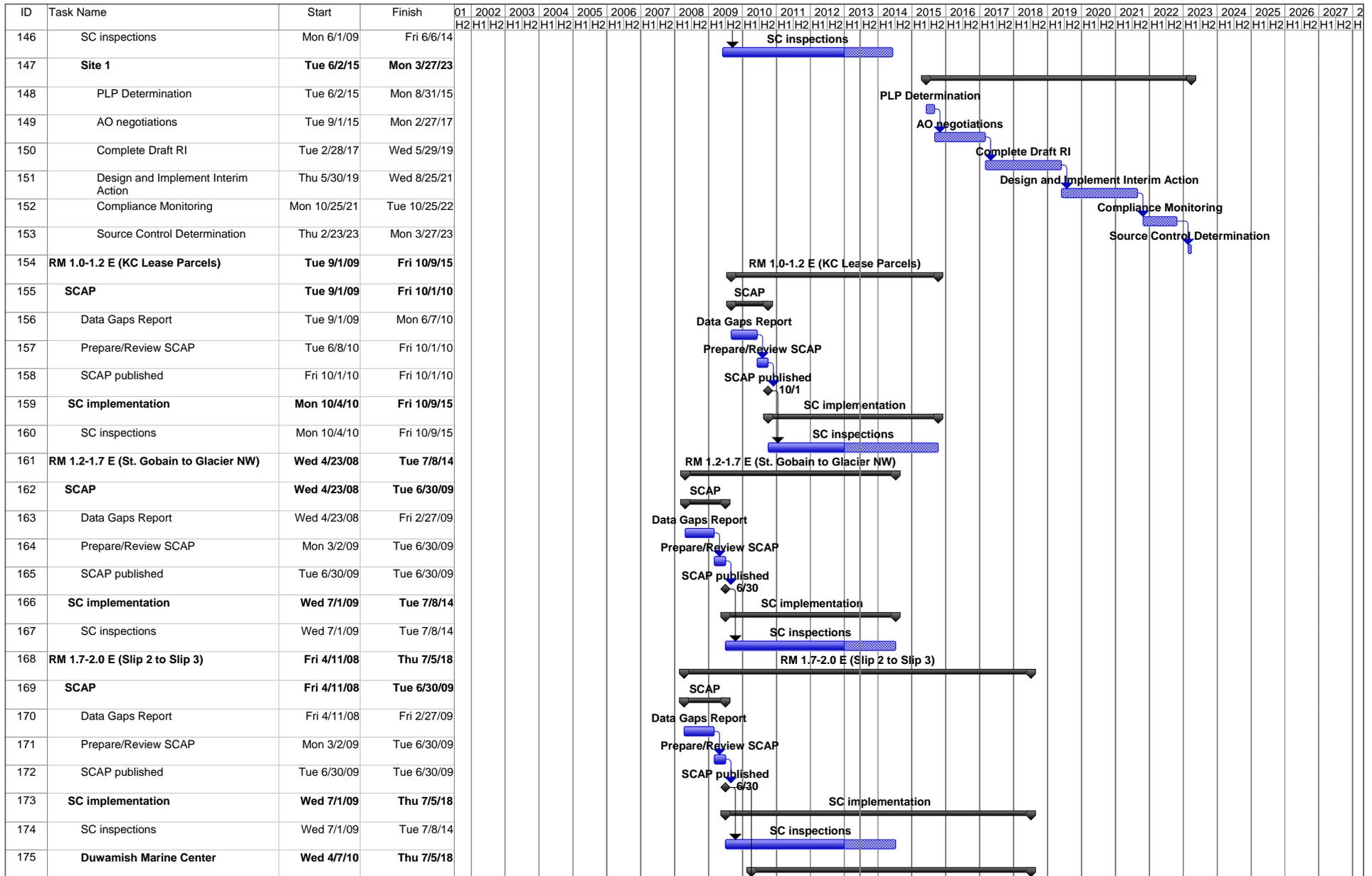




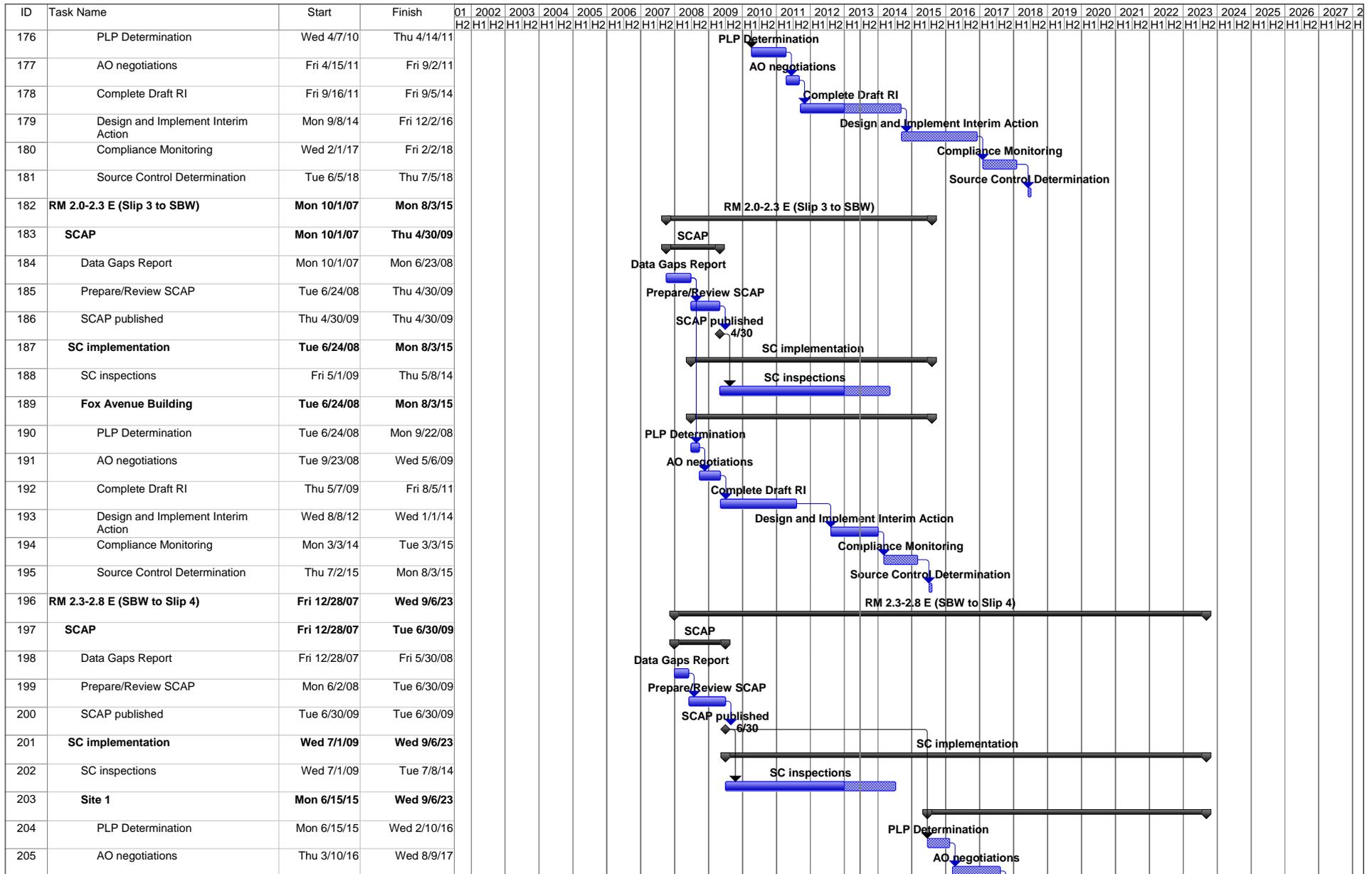
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Project: LDW SC functional level Date: Fri 6/21/13	Task		External Tasks		Manual Task		Finish-only	
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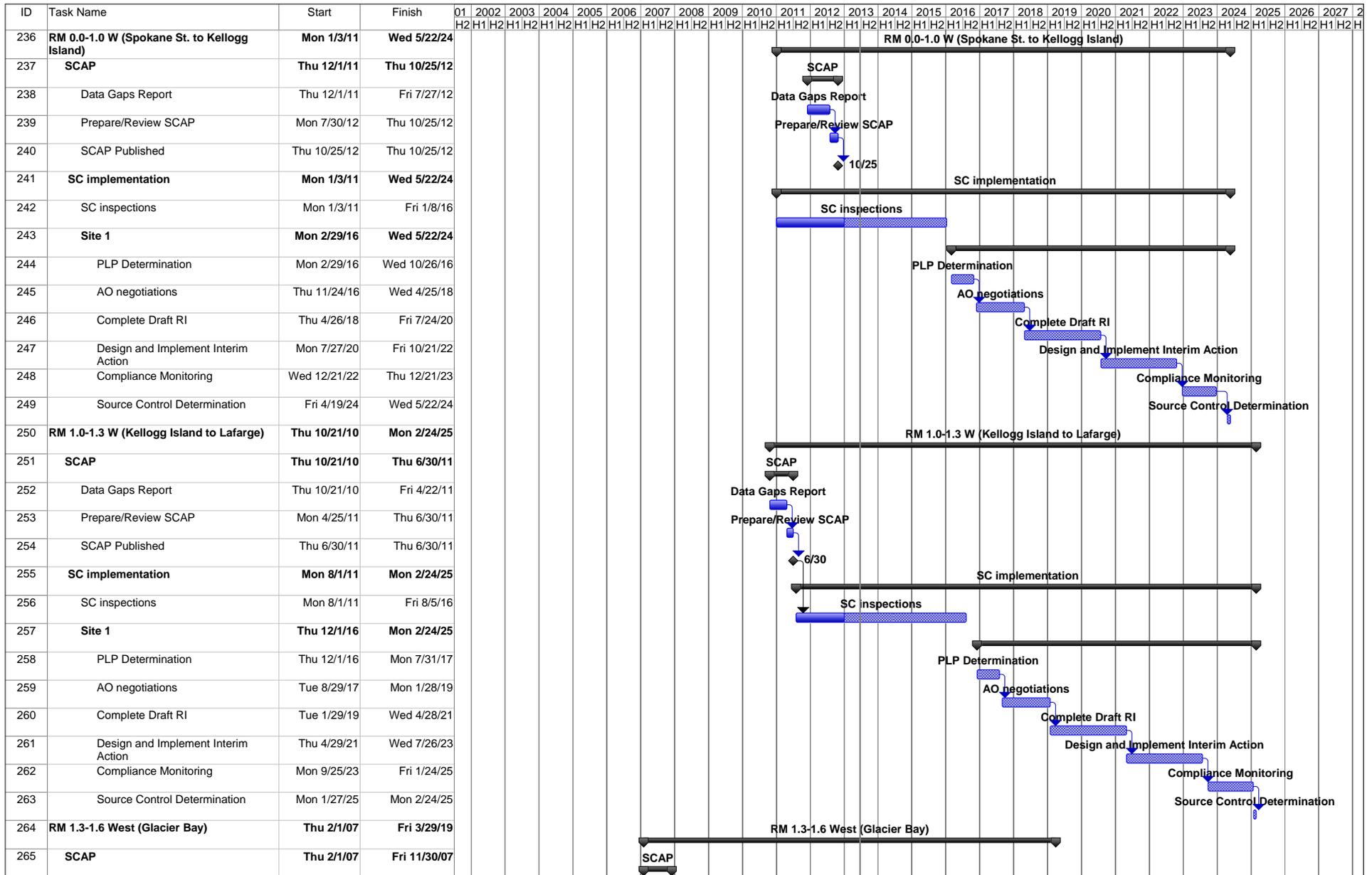
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	Summary		Inactive Milestone		Manual Summary			
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ID	Task Name	Start	Finish	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		
206	Complete Draft RI	Thu 8/10/17	Fri 11/8/19																														
207	Design and Implement Interim Action	Mon 11/11/19	Fri 2/4/22																														
208	Compliance Monitoring	Wed 4/6/22	Thu 4/6/23																														
209	Source Control Determination	Fri 8/4/23	Wed 9/6/23																														
210	<b>RM 3.9-4.3 E (Slip 6)</b>	<b>Mon 10/1/07</b>	<b>Fri 7/29/16</b>																														
211	<b>SCAP</b>	<b>Mon 10/1/07</b>	<b>Mon 9/15/08</b>																														
212	Data Gaps Report	Mon 10/1/07	Thu 2/28/08																														
213	Prepare/Review SCAP	Wed 3/5/08	Mon 9/15/08																														
214	SCAP published	Mon 9/15/08	Mon 9/15/08																														
215	<b>SC implementation</b>	<b>Fri 2/29/08</b>	<b>Fri 7/29/16</b>																														
216	SC inspections	Wed 10/1/08	Tue 10/8/13																														
217	<b>8801 Site</b>	<b>Fri 2/29/08</b>	<b>Fri 1/1/16</b>																														
218	PLP Determination	Fri 2/29/08	Thu 9/25/08																														
219	AO negotiations	Fri 9/26/08	Fri 11/14/08																														
220	Complete Draft RI	Mon 11/17/08	Thu 9/30/10																														
221	Supplemental Investigation Plan	Fri 10/1/10	Wed 4/6/11																														
222	RI Complete	Thu 4/7/11	Fri 3/30/12																														
223	Design and Implement Interim Action	Mon 4/2/12	Mon 6/30/14																														
224	Compliance Monitoring	Tue 7/1/14	Fri 1/1/16																														
225	<b>Rhone-Poulenc Site</b>	<b>Mon 1/12/09</b>	<b>Thu 6/30/16</b>																														
226	Conduct Source Control Action	Mon 1/12/09	Wed 12/31/14																														
227	Compliance Monitoring	Thu 2/26/15	Thu 6/30/16																														
228	Source Control Determination	Thu 6/30/16	Fri 7/29/16																														
229	<b>RM 4.3-4.9 E (Boeing Developmental Center)</b>	<b>Thu 10/1/09</b>	<b>Thu 12/17/15</b>																														
230	<b>SCAP</b>	<b>Thu 10/1/09</b>	<b>Thu 12/9/10</b>																														
231	Data Gaps Report	Thu 10/1/09	Wed 9/1/10																														
232	Prepare/Review SCAP	Thu 9/2/10	Thu 12/9/10																														
233	SCAP published	Thu 12/9/10	Thu 12/9/10																														
234	<b>SC implementation</b>	<b>Fri 12/10/10</b>	<b>Thu 12/17/15</b>																														
235	SC inspections	Fri 12/10/10	Thu 12/17/15																														

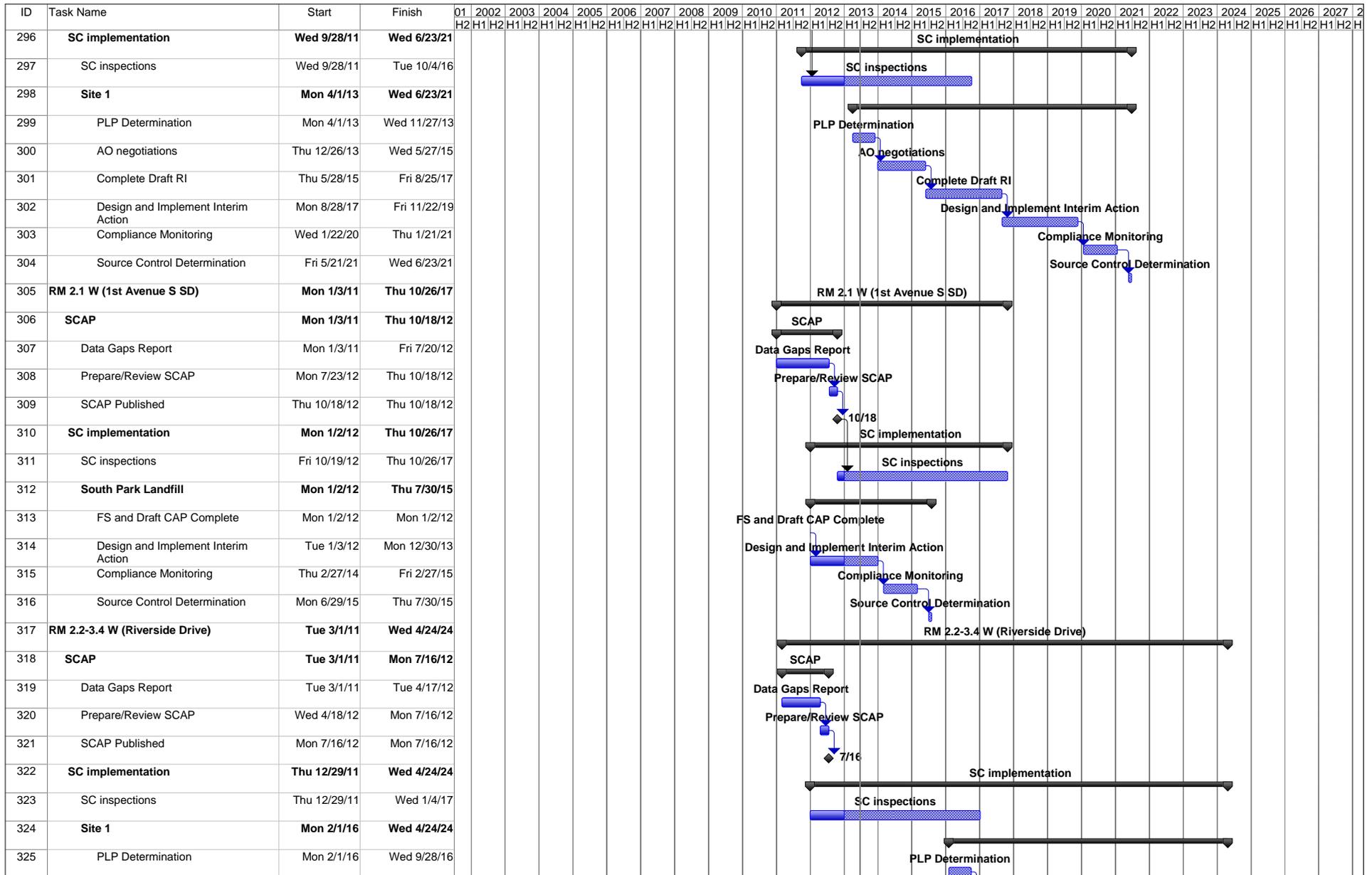
Project: LDW SC functional level Date: Fri 6/21/13	Task		External Tasks		Manual Task		Finish-only	
	Split		External MileTask		Duration-only		Progress	
	Milestone		Inactive Task		Manual Summary Rollup		Split	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start-only			



Project: LDW SC functional level Date: Fri 6/21/13	Task		External Tasks		Manual Task		Finish-only	
	Split		External MileTask		Duration-only		Progress	
	Milestone		Inactive Task		Manual Summary Rollup		Split	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start-only			

ID	Task Name	Start	Finish	01	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028		
266	Data Gaps Report	Thu 2/1/07	Fri 6/29/07																														
267	Prepare/Review SCAP	Tue 7/3/07	Fri 11/30/07																														
268	SCAP published	Fri 11/30/07	Fri 11/30/07																														
269	<b>SC implementation</b>	<b>Thu 5/10/07</b>	<b>Fri 3/29/19</b>																														
270	SC inspections	Mon 12/3/07	Fri 12/7/12																														
271	<b>Duwamish Shipyard</b>	<b>Thu 5/10/07</b>	<b>Fri 7/27/18</b>																														
272	PLP determination	Thu 5/10/07	Thu 5/10/07																														
273	AO negotiations	Wed 11/28/07	Mon 9/13/10																														
274	Complete Draft RI	Wed 6/12/13	Tue 9/30/14																														
275	Design and Implement Interim Action	Wed 10/1/14	Tue 12/27/16																														
276	Compliance Monitoring	Fri 2/24/17	Thu 6/28/18																														
277	Source Control Determination	Fri 6/29/18	Fri 7/27/18																														
278	<b>Glacier Northwest/Reichhold</b>	<b>Mon 3/3/08</b>	<b>Fri 3/29/19</b>																														
279	PLP determination	Mon 3/3/08	Thu 7/10/08																														
280	AO negotiations	Fri 7/11/08	Tue 7/28/09																														
281	Complete Draft RI	Sun 9/1/13	Mon 6/1/15																														
282	Design and Implement Interim Action	Tue 6/2/15	Mon 8/28/17																														
283	Compliance Monitoring	Mon 10/30/17	Fri 3/1/19																														
284	Source Control Determination	Mon 3/4/19	Fri 3/29/19																														
285	<b>Terminal 115N</b>	<b>Tue 9/1/09</b>	<b>Wed 7/25/18</b>																														
286	AO Negotiations	Tue 9/1/09	Wed 3/2/11																														
287	Complete Draft RI	Sat 6/1/13	Tue 9/30/14																														
288	Design and Implement Interim Action	Wed 10/1/14	Tue 12/27/16																														
289	Compliance Monitoring	Fri 2/24/17	Tue 6/26/18																														
290	Source Control Determination	Wed 6/27/18	Wed 7/25/18																														
291	<b>RM 1.6-2.1 W (Terminal 115)</b>	<b>Wed 9/1/10</b>	<b>Wed 6/23/21</b>																														
292	<b>SCAP</b>	<b>Wed 9/1/10</b>	<b>Mon 10/3/11</b>																														
293	Data Gaps Report	Wed 9/1/10	Tue 6/7/11																														
294	Prepare/Review SCAP	Wed 6/8/11	Mon 10/3/11																														
295	SCAP Published	Mon 10/3/11	Mon 10/3/11																														

Project: LDW SC functional level Date: Fri 6/21/13	Task		External Tasks		Manual Task		Finish-only	
	Split		External MileTask		Duration-only		Progress	
	Milestone		Inactive Task		Manual Summary Rollup		Split	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start-only			



Project: LDW SC functional level Date: Fri 6/21/13	Task		External Tasks		Manual Task		Finish-only	
	Split		External MileTask		Duration-only		Progress	
	Milestone		Inactive Task		Manual Summary Rollup		Split	
	Summary		Inactive Milestone		Manual Summary			
	Project Summary		Inactive Summary		Start-only			





## **Appendix B**

### **SPU Source Control Inspections (January 2012 through December 2012)**

**Appendix B**  
**SPU Source Control Inspections (January through December 2012)**

Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
<b>RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way)</b>										
<b>Diagonal Avenue S CSO/SD</b>										
1-World Globes & Maps, LLC	1605 S Jackson Street	1/4/2012	Follow-up	Y	5			3	2	Low
A Better Roofing Company Inc.	4126 Airport Way S	1/10/2012	Initial	--	4			3	1	Low
		2/24/2012	Follow-up	--						
		3/2/2012	Follow-up	Y						
Aamco Transmission	2107 23rd Avenue S	3/9/2012	Initial	--	3			3		Medium
		4/16/2012	Follow-up	Y						
Andy Ide	4740 Airport Way S	10/11/2012	Initial	--						
		11/28/2012	Follow-up	Y	4	2		2	1	Medium
Apex Facility Resources	4435 Colorado Avenue S	8/29/2012	Initial	Y	9			6	3	Medium
Bartell Drugs - Corporate	4727 Denver Avenue S	8/3/2012	Initial	--	4			3	1	Medium
		9/10/2012	Follow-up	--						
		11/6/2012	Follow-up	Y						
Best Auto Repair Center	2114 22nd Avenue S	4/19/2012	Initial	--	9	2		2	5	High
		7/10/2012	Follow-up	--						
		7/16/2012	Follow-up	--						
		8/9/2012	Follow-up	Y						
Burger King-Rainier	2021 Rainier Avenue S	2/1/2012	Follow-up	Y	3				3	Medium
BYG Taxi Co-op	74 S Hudson Street	3/19/2012	Initial	Y	1				1	Medium
C & C Food Store	3002 Beacon Avenue S	2/10/2012	Follow-up	Y	21	5		9	7	Low
Charlie's Produce - Warehouse	4103 2nd Avenue S	1/13/2012	Follow-up	--	11			5	6	Medium
		2/10/2012	Follow-up	Y						
Charlie's Produce - Warehouse	3844 1st Avenue S, #B	1/13/2012	Follow-up	Y	10			5	5	High
Churchkey Can Co.	4700 Ohio Avenue S	4/11/2012	Initial	--	6		1	3	2	Low
		5/22/2012	Follow-up	Y						
City of Seattle-OCC	2700 Airport Way S	9/12/2012	Audit	N	15	3		2	10	Medium
Clear Channel Outdoor	3601 6th Avenue S	7/13/2012	Initial	--	12	4		3	5	Medium
		9/10/2012	Follow-up	Y						
CMARR	1216 S Weller Street	1/6/2012	Follow-up	--	6	2		2	2	Medium
		2/17/2012	Follow-up	Y						

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Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Color Graphics Inc.	1421 S Dean Street	6/20/2012	Initial	--	13	2		2	9	Medium
		8/10/2012	Follow-up	--						
		8/28/2012	Follow-up	Y						
ConGlobal Industries	1 S Idaho Street	11/14/2012	Initial	N	8	2			6	High
COSTCO Wholesale	4401 4th Avenue S	10/2/2012	Initial	--	6	1		2	3	Medium
		11/9/2012	Follow-up	Y						
DHL Express	4450 East Marginal Way S	9/18/2012	Initial	--	2				2	Medium
		12/4/2012	Follow-up	Y						
Dirty Hand Co-op	1817 S Jackson Street	3/13/2012	Initial	--	12	4	1	3	4	High
		5/7/2012	Follow-up	--						
		6/21/2012	Follow-up	Y						
El Sabroso	2524 16th Avenue S	10/23/2012	Initial	Y	0					Low
Emerald City Bindery	4809 Airport Way S	8/22/2012	Initial	Y	7	1		3	3	Low
Emerald City Brewing Company	3100 Airport Way S	6/13/2012	Initial	--	3				3	Low
		7/25/2012	Follow-up	Y						
Emerald City Cleaners	850 Rainier Avenue S	1/27/2012	Initial	--	4	1		3		Low
		3/6/2012	Follow-up	Y						
FedEx	651 S Alaska Street	2/1/2012	Initial	Y	0					Medium
Green Depot Wa Pacific Coast LLC	4121 1st Avenue S	2/3/2012	Follow-up	Y	1	1				Medium
Hedwall Architectural Iron	4750 Ohio Avenue S	10/4/2012	Initial	--	4			2	2	Medium
		11/15/2012	Follow-up	Y						
High-Rise Cabinets Inc.	2755 Airport Way S	7/19/2012	Initial	--	8	3		3	2	Medium
		8/28/2012	Follow-up	Y						
I & B Woods, Inc.	5003 Colorado Avenue S	1/25/2012	Initial	Y	0					Low
iclick	3931 1st Avenue S	10/26/2012	Follow-up	Y	6	3		3		Low
Jason McCloskey Fine Woodworking	4800 Airport Way S, #C	10/11/2012	Initial	Y	0					Low
Jefferson Park Horticulture	4101 Beacon Avenue S	9/5/2012	Audit	N	5			1	4	Medium
Jorve Roofing	3215 Martin Luther King Jr Way S	1/24/2012	Follow-up	--						
		2/24/2012	Follow-up	--						
		3/21/2012	Follow-up	NA						
L&W Food Corp	651 S Industrial Way	8/22/2012	Initial	--	1				1	Low
		10/29/2012	Follow-up	Y						

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Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Liberty Sidecars	2310 Rainier Avenue S	1/27/2012	Initial	Y	11	5		4	2	Low
Lowes Home Improvement Warehouse	2700 Rainier Avenue S	4/17/2012	Initial	--	12			3	9	Medium
		5/17/2012	Follow-up	Y						
M&M Auto Repair	2116 22nd Avenue S	4/19/2012	Initial	--	4			3	1	Low
		7/10/2012	Follow-up	Y						
McKinstry	220 S Dawson Street	9/14/2012	Initial	Y	1				1	Low
McKinstry	4786 1st Avenue S	9/14/2012	Initial	Y	0					Medium
McKinstry	220 S Hudson Street	9/14/2012	Initial	Y	0					Medium
McKinstry	210 S Hudson Street	9/14/2012	Initial	Y	0					Medium
McKinstry Company	5005 3rd Avenue S	9/14/2012	Initial	Y	13	3	1	2	7	Low
McKinstry Company	4800 Denver Avenue S	9/14/2012	Initial	Y	1				1	Medium
Merlino Foods	4100 4th Avenue S	1/6/2012	Follow-up	Y	7	1		3	3	Medium
Messenger, Inc.	37 S Hudson Street	1/25/2012	Initial	Y	5	2		3		Low
Moonlight Cafe	1919 S Jackson Street	1/4/2012	Follow-up	--	5			3	2	Medium
		2/10/2012	Follow-up	Y						
Mygrant Glass Company	4321 7th Avenue S	1/11/2012	Follow-up	Y	1				1	Low
Northwest Oriental Foods	20 S Idaho Street	1/11/2012	Follow-up	--	3				3	Low
		3/23/2012	Follow-up	Y						
Northwest Tofu Inc	1911 S Jackson Street	1/4/2012	Follow-up	--	3			2	1	Low
		2/10/2012	Follow-up	Y						
O'Reilly Auto Parts - 3697	2805 Rainier Avenue S	1/6/2012	Follow-up	Y	3			1	2	High
Oversea Casing Company	601 S Nevada Street	9/21/2012	Initial	Y	3		1	1	1	Medium
Pacific Medical Centers	1200 12th Avenue S	5/21/2012	Initial	--	7	2	1	3	1	Low
		9/10/2012	Follow-up	--						
		9/24/2012	Follow-up	Y						
Pacific Publishing Co.	636 S Alaska Street	8/29/2012	Initial	Y	12	3	1	4	4	Low
Pacific Shipping Company	4707 Denver Avenue S	8/3/2012	Initial	--	3				3	Low
		9/10/2012	Follow-up	--						
		9/18/2012	Follow-up	Y						
Puget Sound Pipe & Supply Co	4800 Denver Avenue S	1/31/2012	Initial	Y	0					Low
QFC - Rainier	2707 Rainier Avenue S	9/19/2012	Initial	--	14			5	9	Medium
		12/19/2012	Follow-up	N						

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Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Rainier Commons LLC	3100 Airport Way S	3/29/2012	Initial	--	6	2		4		High
		7/10/2012	Follow-up	--						
		10/4/2012	Follow-up	NA						
Recycling Depot	851 Rainier Avenue S	4/5/2012	Follow-up	--	19			6	13	High
		5/4/2012	Follow-up	--						
		5/16/2012	Follow-up	Y						
Refrigeration Supplies Distributor Total Control	625 S Industrial Way	1/11/2012	Initial	--	2				2	Low
		2/13/2012	Follow-up	Y						
Safelite Auto Glass	4005 6th Avenue S	12/20/2012	Initial	N	0					Medium
Sears Service Center	4790 1st Avenue S	7/13/2012	Initial	--	8	1		3	4	Medium
		10/25/2012	Follow-up	Y						
Sears Service Center	4786 1st Avenue S	7/13/2012	Initial	Y	4	1	1		2	High
Seattle City Light		7/31/2012	Initial	Y	4	1			3	High
Seattle DOT - Sunny Jim	4200 Airport Way S	9/10/2012	Audit	N	4			3	1	Medium
Seattle Farm Co- Operative	1817 S Jackson Street	3/9/2012	Initial	--	8			6	2	Low
		7/13/2012	Follow-up	--						
		9/7/2012	Follow-up	Y						
Seattle Lighthouse for the Blind Foundation	2501 S Plum Street	5/24/2012	Initial	--	21	5	1	6	9	High
		7/25/2012	Follow-up	Y						
Seattle Self Storage	1100 Poplar Place S	9/6/2012	Initial	--	8			4	4	Low
		11/15/2012	Follow-up	Y						
Second Use	3223 6th Avenue S	12/13/2012	Initial	NA	2				2	Low
Service Welding and Machine	1435 S Jackson Street	9/10/2012	Initial	Y	5	2		2	1	Low
Seven Star Mini Mart	1917 S Jackson Street	1/4/2012	Follow-up	--	3				3	Low
		2/10/2012	Follow-up	Y						
SME Electrical Contractors	828 Poplar Place S	1/26/2012	Initial	--				3		Medium
		3/29/2012	Follow-up	Y						
Snorkel Stove Company	4216 6th Avenue S	1/27/2012	Initial	--	3				3	Low
		3/12/2012	Follow-up	Y						
SPUD.com	8 S Idaho Street	1/23/2012	Follow-up	Y	2				2	Low
Stewart Industries	16 S Idaho Street	3/13/2012	Initial	Y	2	2				Low

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Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Sun Food Trading Co.	4715 6th Avenue S	9/5/2012	Initial	--	14	2		6	6	Medium
		10/26/2012	Follow-up	Y						
Superior Imprints Inc.	4226 6th Avenue S	1/10/2012	Follow-up	Y	3			3		Medium
Tea Garden	708 Rainier Avenue S	2/10/2012	Follow-up	--	7			3	4	Medium
		3/12/2012	Follow-up	--						
		3/20/2012	Follow-up	Y						
The Boiler Room	3828 4th Avenue S	9/18/2012	Initial	--	6	2		3	1	Low
		10/29/2012	Follow-up	Y						
Tully's Coffee #01095	3100 Airport Way S	8/17/2012	Initial	--	3				3	Low
		10/16/2012	Follow-up	--						
		10/19/2012	Follow-up	Y						
Two Beers Brewing Co.	4700 Ohio Avenue S, #A	4/11/2012	Initial	--	10		2	4	4	Medium
		5/22/2012	Follow-up	Y						
U-Haul Center of Rainier	2515 Rainier Avenue S	4/16/2012	Initial	Y	13			8	5	Medium
Uli's Famous Sausage	4318 6th Avenue S	9/25/2012	Initial	--	5			3	2	Low
		12/4/2012	Follow-up	Y						
UPS	4455 7th Avenue S	10/24/2012	Initial	--	7			1	6	Medium
		12/21/2012	Follow-up	Y						
UPS - 7th Ave	4329 7th Avenue S	10/24/2012	Initial	N	0					--
Urban Hardwoods Inc.	4755 Colorado Avenue S, #C	10/4/2012	Initial	--	4			3	1	Low
		11/15/2012	Follow-up	Y						
Vans Metal Spinning	1819 S Jackson Street	2/17/2012	Follow-up	Y	8	2		3	3	Medium
Verizon Wireless	3440 6th Avenue S	3/8/2012	Follow-up	--	6			3	3	Low
		4/11/2012	Follow-up	Y						
Veterans Administration Medical Center	1660 S Columbian Way	7/6/2012	Initial	N	8	2	1	1	5	--
WA State Liquor Control Board	4401 East Marginal Way S	2/21/2012	Initial	--	17	2	1	6	8	Medium
		4/4/2012	Follow-up	Y						
Victor's Granite & Marble LLC	4660 East Marginal Way S, #16	1/4/2012	Follow-up	Y	6			3	3	Medium
W.W. Grainger, Inc.	4930 3rd Avenue	8/1/2012	Initial	--	7	1		5	1	Medium
		9/20/2012	Follow-up	Y						
West Coast Printing	622 Rainier Avenue S	10/23/2012	Initial	Y	0					Low

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Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Western Peterbilt Inc.	3801 Airport Way S	5/7/2012	Initial	--	12	2	1	3	6	High
		5/17/2012	Follow-up	--						
		5/24/2012	Follow-up	--						
		7/3/2012	Follow-up	--						
		7/19/2012	Follow-up	--						
		12/13/2012	Follow-up	Y						
<b>RM 1.7-2.0 East (Slip 2 to Slip 3)</b>										
<b>1st Avenue S Bridge SD</b>										
Evergreen Tractor	164 S Michigan Street	11/20/2012	Initial	NA	1				1	Medium
<b>Michigan CSO</b>										
Koike Seafood Inc	500 S River Street	7/13/2012	Initial	--						
		8/30/2012	Follow-up	NA						
<b>RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)</b>										
<b>S River Street SD</b>										
Algas-SDI International LLC	151 S Michigan Street	4/12/2012	Initial	--	18	3		6	9	High
		5/15/2012	Follow-up	Y						
<b>S Brighton Street SD</b>										
Ace Tank and Fueling Equipment	6703 East Marginal Way S	4/19/2012	Screening	NA	3	1		1	1	None
Alpine Auto Sales	6722 Fox Avenue S	4/5/2012	Initial	--	22	9		3	10	Medium
		5/21/2012	Follow-up	Y						
Cascade Columbia Distribution	6900 Fox Avenue S	3/16/2012	Initial	--	2			2		Medium
		5/9/2012	Follow-up	Y						
Delta North	6701 Fox Avenue S	9/12/2012	Initial	--	3			3		Low
		10/19/2012	Follow-up	Y						
Northland Services	6701 Fox Avenue S	9/27/2012	Initial	Y	8	3		1	4	Low
Seatac Marine Services LLC	6701 Fox Avenue S	6/14/2012	Initial	--	11	4		2	5	High
		7/26/2012	Follow-up	Y						
Shultz Distributing Inc.	6851 East Marginal Way S	2/6/2012	Initial	--	14		4	3	7	High
		5/29/2012	Follow-up	--						
		6/11/2012	Follow-up	--						
		7/25/2012	Follow-up	Y						

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Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
<b>RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)</b>										
<b>S Garden Street SD</b>										
United Rentals	7135 8th Avenue S	2/10/2012	Initial	--	17	3		2	12	High
		3/20/2012	Follow-up	--						
		12/19/2012	Follow-up	Y						
<b>S Myrtle Street SD</b>										
Big Dipper Wax Works Inc.	700 S Orchard Street	3/16/2012	Initial	--	4			3	1	Low
		3/30/2012	Follow-up	Y						
Bud's Auto & Truck	750 S Orchard Street	1/24/2012	Initial	--	11	4		3	4	High
		2/10/2012	Follow-up	--						
		2/23/2012	Follow-up	--						
		3/14/2012	Follow-up	--						
		3/20/2012	Follow-up	Y						
Caffe D'Arte LLC	719 S Myrtle Street	3/16/2012	Initial	--	5			3	2	Medium
		4/24/2012	Follow-up	--						
		5/15/2012	Follow-up	Y						
Reliable Transfer and Storage/Whitehead Company		11/30/2012	Initial	N	0					--
Seattle Iron And Metals Truck Parking	730 S Myrtle Street	3/14/2012	Initial	--	6	1		2	3	High
		10/11/2012	Follow-up	--						
		10/30/2012	Follow-up	Y						
Svendsen Brothers Fish Company	745 S Myrtle Street	2/10/2012	Initial	--	14		1	3	10	High
		3/20/2012	Follow-up	--						
		4/24/2012	Follow-up	Y						
Taxi King	720 S Orchard Street	1/24/2012	Initial	--	18	4		8	6	High
		3/19/2012	Follow-up	--						
		3/22/2012	Follow-up	Y						
<b>RM 2.8 East (EAA-3: Slip 4)</b>										
<b>Slip 4 Direct</b>										
Boom Boys Cranes LLC	7400 8th Avenue S	5/16/2012	Initial	--	11			3	8	High
		6/7/2012	Follow-up	Y						

**Appendix B**  
**SPU Source Control Inspections (January through December 2012)**

Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
First Student	7400 8th Avenue S	10/3/2012	Initial	--	6	1		4	1	Medium
		11/9/2012	Follow-up	Y						
Heko Inc	7400 8th Avenue S	5/16/2012	Initial	Y	3	1			2	Low
KRS Marine	7400 8th Avenue S	5/16/2012	Initial	--	3	1			2	High
		6/7/2012	Follow-up	Y						
Organic Fuel Processors	7400 8th Avenue S	5/16/2012	Initial	--	10			3	7	High
		6/7/2012	Follow-up	Y						
<b>KCIA SD#3/PS44 EOF</b>										
Arc Creations	1115 S Elizabeth Street	5/16/2012	Initial	Y	0					Low
Troll Motors	1115 S Elizabeth Street	5/16/2012	Initial	N						--
<b>I-5 SD</b>										
Marine Vacuum Service	1516 S Graham Street	7/25/2012	Initial	NA						
<b>RM 4.9 East (EAA-7: Norfolk CSO/SD)</b>										
<b>Norfolk CSO/SD</b>										
Cucina Fresca Inc.	8300 Military Rd S, #120	1/11/2012	Initial	--	7	1	1	2	3	Low
		2/24/2012	Follow-up	--						
		3/21/2012	Follow-up	Y						
Engineered Products	9883 40th Avenue S	3/30/2012	Initial	--	3			3		Low
		5/16/2012	Follow-up	Y						
Masins	3701 S Norfolk Street	2/9/2012	Initial	--	3			3		Low
		4/2/2012	Follow-up	--						
		5/1/2012	Follow-up	Y						
Noble Wines	9860 40th Avenue S	2/3/2012	Initial	--	3			1	2	Low
		3/13/2012	Follow-up	Y						
Northwest Gourmet Food Products Inc.	9620 Martin Luther King Jr Way S	4/27/2012	Initial	--						
		5/29/2012	Follow-up	Y						
Pape Material Handling	9892 40th Avenue S	3/30/2012	Initial	--	6			2	4	Medium
		6/1/2012	Follow-up	Y						
Special Asphalt Products Inc	9243 Martin Luther King Jr Way S	7/12/2012	Initial	--	14	2		3	9	Medium
		7/25/2012	Follow-up	Y						
Speedeelube	9637 Martin Luther King Jr Way S	1/11/2012	Initial	Y	2	2				Medium

**Appendix B**  
**SPU Source Control Inspections (January through December 2012)**

Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Swan Net, LLC	8300 Military Rd S, #100	1/10/2012	Initial	--	3			3		Low
		2/24/2012	Follow-up	Y						
The January Company	9844 40th Avenue S	3/22/2012	Follow-up	--	9	1		6	2	Medium
		4/20/2012	Follow-up	--						
		7/23/2012	Follow-up	Y						
Unified Grocers	3301 S Norfolk Street	2/17/2012	Initial	--	14	3		5	6	High
		3/30/2012	Follow-up	--						
		4/20/2012	Follow-up	Y						
Wall & Ceiling	9830 40th Avenue S	4/20/2012	Initial	--	13	1		4	8	High
		6/19/2012	Follow-up	--						
		7/23/2012	Follow-up	--						
		9/28/2012	Follow-up	N						
<b>RM 0.0-1.0 West (Spokane Street to Kellogg Island)</b>										
<b>SW Dakota Street SD</b>										
Encore Oils LLC	4034 West Marginal Way SW	5/18/2012	Initial	--	5			3	2	Medium
		7/12/2012	Follow-up	--						
		8/3/2012	Follow-up	Y						
<b>RM 1.6-2.1 West (Terminal 115)</b>										
<b>Highland Park Way SW SD</b>										
Pioneer Industries	7000 Highland Park Way SW	9/14/2012	Initial	--	11	4		2	5	High
		11/21/2012	Follow-up	Y						
Northwest SeaFood Processors Inc.	206 SW Michigan Street	9/26/2012	Initial	--	4			3	1	Medium
		11/1/2012	Follow-up	Y						
SeaFreeze Cold Storage	206 SW Michigan Street	9/26/2012	Initial	--	17	3		3	11	Medium
		11/1/2012	Follow-up	Y						
<b>SW Kenny Street SD</b>										
Commercial Fence Corp.	6000 West Marginal Way SW	11/28/2012	Initial	NA	6			3	3	Medium
Pacific Rim Equipment Rental	6515 West Marginal Way SW	6/19/2012	Initial	--	15	1	1	3	10	Medium
		8/22/2012	Follow-up	Y						
<b>RM 2.1 West (1st Avenue S SD)</b>										
<b>1st Avenue S SD</b>										
Flamespray Northwest	250 S Chicago Street	5/17/2012	Initial	Y	0					Medium

**Appendix B**  
**SPU Source Control Inspections (January through December 2012)**

Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
International Construction Equipment	8101 Occidental Avenue S	2/24/2012	Follow-up	Y	6	1	1	3	1	High
Jones Stevedoring Company	7245 West Marginal Way SW	4/20/2012	Initial	--	8	4		3	1	High
		7/13/2012	Follow-up	--						
		9/6/2012	Follow-up	Y						
Lion Trucking, Inc.	8425 1st Avenue S	10/11/2012	Initial	NA	11	1		6	4	Medium
MAPSCO	8135 1st Avenue S	8/14/2012	Initial	Y						Medium
NCM	7245 West Marginal Way SW	4/20/2012	Initial	--	5	3			2	High
		7/13/2012	Follow-up	Y						
NonFerrous Metal	230 S Chicago Street	4/24/2012	Initial	Y	2	1	1			Medium
Old Dominion Freight Line Inc.	8425 1st Avenue S	10/19/2012	Initial	Y						Medium
Seaport Petroleum	7800 Detroit Avenue SW	1/26/2012	Initial	--						
		3/8/2012	Follow-up	--						
		4/24/2012	Follow-up	--						
		7/6/2012	Follow-up	N						
Urban Hardwoods Inc	8427 1st Avenue S	10/19/2012	Initial	Y	1				1	Low
<b>RM 2.1-2.2 West (EAA-2: Trotsky Inlet)</b>										
<b>Duwamish West Direct</b>										
Boyer Logistics	7318 4th Avenue S	8/3/2012	Initial	--	12			5	7	Medium
		9/4/2012	Follow-up	Y						
<b>2nd Avenue S SD</b>										
American Environmental Construction LLC	7417 4th Avenue S	9/5/2012	Initial	--	13			5	8	Low
		10/3/2012	Follow-up	--						
		10/25/2012	Follow-up	--						
		11/1/2012	Follow-up	Y						
Bill's Mobile Service	7265 2nd Avenue S	4/24/2012	Initial	--	20	4		3	13	High
		5/15/2012	Follow-up	Y						
Da Vinci Gourmet	7224 1st Avenue S	3/22/2012	Follow-up	Y	21	2		12	7	High
Elliott Bay Industries	7500 West Marginal Way S	7/10/2012	Initial	--	10	4		3	3	Medium
		9/6/2012	Follow-up	Y						
North Pacific Seafoods	7417 4th Avenue S	9/5/2012	Initial	--	2				2	Low
		10/26/2012	Follow-up	Y						

**Appendix B**  
**SPU Source Control Inspections (January through December 2012)**

Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Northwest Center	7272 West Marginal Way S	1/12/2012	Initial	--	9			4	5	Medium
		2/29/2012	Follow-up	Y						
WHECO	315 S Fontanelle Street	9/4/2012	Initial	Y				3		Low
<b>RM 2.2-3.4 West (Riverside Drive)</b>										
<b>Duwamish West Direct</b>										
Pacific Pile & Marine	582 S Riverside Drive	12/7/2012	Initial	N	9	1		3	5	High
<b>7th Avenue S SD</b>										
Coast Crane Company	8250 5th Avenue S	10/23/2012	Initial	N	3				3	High
Fire King of Seattle, Inc.	240 S Holden Street	3/12/2012	Follow-up	Y	9	2		3	4	Medium
Global Inc	7619 5th Avenue S	7/3/2012	Initial	--	20	7		9	4	Medium
		8/30/2012	Follow-up	Y						
Independent Metals Plant 1 (Container Storage)	703 S Monroe Street	2/16/2012	Initial	--	9	2		4	3	High
		3/29/2012	Follow-up	--						
		5/15/2012	Follow-up	Y						
Independent Metals Plant 1	747 S Monroe Street	2/16/2012	Initial	--	13	4		3	6	High
		3/29/2012	Follow-up	--						
		5/15/2012	Follow-up	Y						
Industrial Tire Service	540 S Holden Street	2/9/2012	Initial	Y	6	1		3	2	Medium
Machinists Inc Plant 3	8201 7th Avenue S	10/23/2012	Initial	--	1				1	Low
		12/7/2012	Follow-up	Y						
Machinists Inc. Plant 4	8101 7th Avenue S	10/23/2012	Initial	--	3			3		Low
		11/30/2012	Follow-up	Y						
Marine Lumber Service	525 S Chicago Street	6/13/2012	Follow-up	Y	1				1	High
McFabco Steel Corp.	635 S Elmgrove Street	10/17/2012	Initial	Y	0					Low
Olsson Manufacturing Inc.	525 S Elmgrove Street	2/3/2012	Initial	--	2				2	Medium
		3/6/2012	Follow-up	Y						
Pacific Logistics, Inc.	424 S Cloverdale Street	1/6/2012	Initial	Y	0					Medium
Pennington Metals & Auto Recycling LLC	543 S Monroe Street	4/11/2012	Initial	--	4	1		1	2	Medium
		6/8/2012	Follow-up	Y						
Rasmussen Equipment Company	8727 5th Avenue S	9/20/2012	Initial	--	10	2	2	2	4	Medium
		11/1/2012	Follow-up	Y						
Rasmussen Equipment Company	426 S Cloverdale Street	9/20/2012	Initial	Y	0					Low

**Appendix B**  
**SPU Source Control Inspections (January through December 2012)**

Facility (DBA)	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Rogers Machinery Co.	7800 5th Avenue S	5/7/2012 5/29/2012	Initial Follow-up	-- Y	11	4	2	4	1	Medium
The Gear Works	516 S Chicago Street	2/23/2012 4/12/2012	Initial Follow-up	-- Y	0					Medium
The Gear Works Seattle Inc	500 S Portland Street	2/23/2012	Initial	Y	7	2		1	4	High
Tierney Electric Mfg Co	7901 7th Avenue S	8/31/2012	Initial	Y	6	4			2	Medium
Washington Liftruck	700 S Chicago Street	5/24/2012	Initial	Y	4	1			3	Medium
West Coast Wire & Rope Rigging Inc	7777 7th Avenue S	4/25/2012	Initial	--	9	3		2	4	High
		7/18/2012	Follow-up	--						
		7/24/2012	Follow-up	--						
		7/26/2012	Follow-up	--						
		8/31/2012	Follow-up	Y						
Willies Recycling	728 S Monroe Street	5/4/2012	Initial	--	10	4		2	4	Medium
		7/12/2012	Follow-up	--						
		7/23/2012	Follow-up	--						
		8/2/2012	Follow-up	Y						
<b>8th Avenue CSO</b>										
Queen Anne Upholstery	1414 S Director Street	9/6/2012	Follow-up	Y	6	1		3	2	Medium
<b>RM 3.8-4.2 West (Sea King Industrial Park)</b>										
<b>S 96th Street SD</b>										
King Electrical Mfg. Company	9131 10th Avenue S	3/6/2012	Initial	Y	17	5	2	3	7	High
MacMillan Piper Inc. - 10th Avenue S	9228 10th Avenue S	1/6/2012	Initial	Y	0					Low
PNP Properties LLC	860 S Cambridge Street	1/25/2012	Initial	--	1				1	Low
		5/29/2012	Follow-up	Y						
Puget Sound Coatings	9220 8th Avenue S	9/20/2012	Initial	Y	10	1		2	7	High

\* Total number of corrective actions, including those identified prior to the current reporting period.

"Rank" refers to relative risk of causing stormwater pollution: none, low, medium, or high.

HW = hazardous waste

IW = industrial waste

SP = spill prevention

SW = stormwater

NA = Compliance status not available.

Source: Seattle Public Utilities

## **Appendix C**

### **Ecology Source Control Inspections (January 2012 through December 2012)**

**Appendix C  
Ecology Source Control Inspections (January through December 2012)**

NPDES Permit ID	Facility Name	Address	Date Inspected	Type of Inspection	Ecology Findings
<b>RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way)</b>					
No Permit	Acme Construction Supply Co., Inc.	2727 First Avenue S	October 23, 2012	Stormwater Assessment	Recommended BMPs.
WAR124764	Airport Way Bridge Construction	Airport Way S & S Edmunds Street	September 18, 2012	NPDES	Issues include: catch basin filter socks are full and in need of maintenance; need to monitor stormwater drain at location where stormwater is likely to discharge to storm drain system. Three SW treatment units were subsequently installed; these should be operational by January 2013.
No Permit	Alaska Copper & Brass Co.	628 South Hanford Street	October 23, 2012	Stormwater Assessment	Recommended BMPs.
WAR004605	Alaska Street Reload & Recycling-Waste Management	70 S Alaska Street	March 17, 2012 June 12, 2012	Urban Waters Urban Waters	
No Permit	Bloch Steel	4580 Colorado Avenue S	June 6, 2012 June 12, 2012	Urban Waters Urban Waters	
No Permit	BYG Taxi Corp	74 S Hudson Street	November 1, 2012	Urban Waters	Issues include: kitty litter left on top of long-term oil spill, unlabeled containers, open containers and standing water over storm drain.
No Permit	Charlie's Produce Seattle	5047 Colorado Avenue S	November 1, 2012	Urban Waters	Issues include: used oil stored outside, drums unlabeled, single-wall oil heating tank outside without cover, pressure-cleaning trucks outside over oil/water separator.
WAR003679	Colorgraphics	1421 S Dean Street	June 20, 2012	NPDES	Several compliance issues were noted and corrected. Facility must revise and submit updated SWPPP, provide proper cover and containment for all liquid products and wastes stored outside, provide copies of discharge sampling lab data sheets for the last 8 quarters, and immediately begin proper industrial SW discharge monitoring and reporting.
WAR010569	ConGlobal Industries	1 S Idaho Street	November 15, 2012	NPDES, Urban Waters	Adequate stormwater treatment had not been properly implemented. Several violations were noted; Ecology is pursuing formal enforcement actions. Must meet all SQG requirements or move up in generator status.
No Permit	Hedwall Architectural Iron	3434 4th Ave S	October 4, 2012	Urban Waters	Using selenic acid to stain architectural steel.
No Permit	Irish Foundry & Manufacturing	45 S Spokane Street	September 19, 2012	Urban Waters	No violations.
No Permit	Ralph's Concrete	1529 Rainier Avenue S	November 7, 2012	Urban Waters	
No Permit	Ralph's Concrete	816 Poplar Place S	November 7, 2012	Urban Waters	

**Appendix C  
Ecology Source Control Inspections (January through December 2012)**

NPDES Permit ID	Facility Name	Address	Date Inspected	Type of Inspection	Ecology Findings
WAR000444	United Parcel Service WASEA (Seattle Hub)	4455 7th Avenue S	October 24, 2012	NPDES, Urban Waters	No violations. The facility was close to completing the installation of a Level 3 SW treatment system. Ecology's recommendations include: use vacuum sweeper on all paved surfaces at least once a quarter, fluids from the garbage compactor must not be allowed to flow to the storm drain system, update and submit site map as necessary to include all SW system improvements and upgrades.
No Permit	Urban Hardwoods	2101 1st Avenue S	October 4, 2012	Urban Waters	Need to designate paint booth filters.
No Permit	Urban Hardwoods Inc.	4755 Colorado Avenue S, #C	October 10, 2012	NPDES	
No Permit	West Coast Printing, Inc.	622 Rainier Avenue S	October 23, 2012	Urban Waters	No violations.
<b>RM 1.0-1.2 East (King County Lease Parcels)</b>					
<b>Brandon CSO Basin</b>					
No Permit	Air Tec Co	85 S Orcas Street	December 5, 2012	Urban Waters/Stormwater Assessment	Issues include: open containers, spill materials not readily available, variety of items in bucket of water.
No Permit	Argo Blower & Manufacturing Co	5400 East Marginal Way S	October 2, 2012	Urban Waters	No violations, but several recommendations. Facility documented continued SQG status.
No Permit	Jonathan Paul's, Inc. (Custom Design Furniture & Cabinetry)	60 S Lucile Street	December 5, 2012	Urban Waters/Stormwater Assessment	Issues include: disposal of spray booth filters & drum of unknown liquid.
No Permit	Loomis (Armor Car Co Maintenance)	5200 East Marginal Way S	November 7, 2012	Urban Waters	No violations.
No Permit	Mallory Safety & Supply	5510 East Marginal Way S	December 5, 2012	Urban Waters/Stormwater Assessment	No violations.
No Permit	Republic Services Inc.	54 S Dawson Street	November 7, 2012	Urban Waters	No violations.
No Permit	Seadrunar Recycling	28 S Brandon Street	October 23, 2012	Stormwater Assessment	Recommended BMPs.
No Permit	Seattle KC Public Health District Center	56 S Lucile Street	December 5, 2012	Urban Waters/Stormwater Assessment	No violations.
No Permit	The C.P.C. Medical Marijuana distributor	74 S Lucile Street	December 5, 2012	Urban Waters/Stormwater Assessment	No violations.
No Permit	The Essential Baking Company	5601 1st Avenue S	December 18, 2012	Urban Waters/Stormwater Assessment	No violations.

**Appendix C  
Ecology Source Control Inspections (January through December 2012)**

NPDES Permit ID	Facility Name	Address	Date Inspected	Type of Inspection	Ecology Findings
<b>RM 1.2-1.7 East (Saint Gobain to Glacier Northwest)</b>					
WAR001134	Saint Gobain Containers	5801 East Marginal Way S	April 12, 2012	NPDES	
<b>RM 1.7-2.0 East (Slip 2 to Slip 3)</b>					
No Permit	B&G Machine Inc.	6400 Corson Avenue S	October 2, 2012	Urban Waters	No violations, but several recommendations. Machine shop floor area very clean.
WAR010447	General Biodiesel	6333 1st Avenue S	January 30, 2012	NPDES	
WAR011484	Samson Tug & Barge Seattle Facility	6361 1st Avenue S	January 30, 2012	NPDES	Triggered requirement to install SW treatment. Work started on treatment system in 2012.
No Permit	Scougal Rubber Inc.	6239 Corson Avenue S	September 27, 2012	Urban Waters	Issues include: open containers, missing hazardous waste and risk labels, and missing accumulation start dates.
No Permit	The Recycling Depot on Corson	6004 Corson Avenue S	December 18, 2012	Urban Waters/Stormwater Assessment	No violations.
<b>RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)</b>					
No Permit	Bud's Auto Wrecking	750 S Orchard Street	March 14, 2012	NPDES	
WAR000949	CleanScapes Inc.	7308 8th Avenue S	January 10, 2012	NPDES	On March 14, 2012, Ecology issued warning letter of noncompliance with NPDES permit. Must submit a monitoring point update form, revise Section 4 of the SWPPP, and update the site map in the SWPPP.
WAR011560	Dawn Food Products-Sea Dry Mix	6901 Fox Avenue S	May 10, 2012	NPDES	
WAR125002	Seattle Iron & Metals-Annex	730 S Myrtle Street	January 4, 2012 January 26, 2012  March 14, 2012	NPDES NPDES  NPDES	Ecology issued warning letter of noncompliance with NPDES permit and \$15,000 penalty; previous inspections at the Seattle Iron & Metals Annex were not in compliance with NPDES permit requirements.
WA0031968	Seattle Iron & Metals-Main Plant	601 S Myrtle Street	April 26, 2012 June 6, 2012 June 12, 2012 September 25, 2012 November 30, 2012	NPDES NPDES NPDES Urban Waters Urban Waters	
WAR125683	Taxi King Auto Wrecking LLC	720 S Orchard Street	April 26, 2012	NPDES	
No Permit	United Rentals	7135 8th Avenue S	March 14, 2012 April 26, 2012	Urban Waters Urban Waters	

**Appendix C  
Ecology Source Control Inspections (January through December 2012)**

NPDES Permit ID	Facility Name	Address	Date Inspected	Type of Inspection	Ecology Findings
<b>RM 2.8 East (EAA-3: Slip 4)</b>					
WAR124990	First Student 8th Avenue	7400 8th Avenue S	October 3, 2012 October 19, 2012	NPDES Urban Waters	Need to comply with all SQG requirements and revise their monitoring plan. Ecology recommends that they clean up hydraulic leaks, provide training to drivers to clean up leaks immediately and improve handling of spent batteries.
WAR000343	King County International Airport	7277 Perimeter Road S	July 12, 2012	NPDES	
No Permit	UltraBlock	1615 S Graham Street	January 30, 2012	Urban Waters	
<b>RM 2.8-3.7 East (EAA-4: Boeing Plant 2 to Jorgensen Forge)</b>					
WAR012502	Boeing Plant 2	7755 East Marginal Way S	October 2, 2012	NPDES	
<b>RM 3.7-3.9 East (EAA-6: Boeing Isaacson/Central KCIA)</b>					
WAR125569	Quad 7 Construction Project	7777 Perimeter Road S.	February 29, 2012	NPDES	
<b>RM 4.9 East (EAA-7: Norfolk CSO/SD)</b>					
WAR125428	Northwest Gourmet Foods	9620 Martin Luther King Jr. Way S	October 24, 2012	NPDES	Facility is not in compliance with permit requirements. Several violations noted. Northwest Gourmet Foods must submit SWPPP and must begin monitoring and reporting as required by permit.
No Permit	Affordable Auto Wrecking	9750 Martin Luther King Jr. Way S	December 20, 2012	Technical Assistance	Issues include: inconsistent labeling of oil drums, inadequate SW control, improper handling of spent lamps, and poor oil leak control from equipment.
<b>RM 0.0-1.0 West (Spokane Street to Kellogg Island)</b>					
No Permit	Encore Oils, LLC	4034 West Marginal Way SW	June 6, 2012	Urban Waters	
WAR000474	Fog Tite Inc.	4819 West Marginal Way SW	January 10, 2012	NPDES	Implemented several source control treatment measures and worked in good faith to be in compliance with their NPDES permit since 2010. Ecology determined that Fog Tite met the settlement agreement for compliance with their permit and are eligible to have the remaining penalty dropped.
<b>RM 1.6-2.1 West (Terminal 115)</b>					
WAR126580	Custom Seafoods		September 26, 2012 September 4, 2012	NPDES NPDES	
WAR001897	Pioneer Industries	7000 Highland Park Way SW	November 14, 2012	NPDES	Ecology identified a new location for sampling SW. Pioneer Industries should implement additional housekeeping practices around trash compactor and dumpster, and ensure monthly inspections are conducted and documented according to permit requirements.

**Appendix C  
Ecology Source Control Inspections (January through December 2012)**

NPDES Permit ID	Facility Name	Address	Date Inspected	Type of Inspection	Ecology Findings
<b>RM 2.1 West (1st Avenue S SD)</b>					
No Permit	MacDonald-Miller Facility Solutions	7717 Detroit Avenue S	December 13, 2012	Urban Waters	Issues include: improperly labeled & dated Universal Waste, exceeded 1 year Universal Waste time limit.
No Permit	SeaFreeze Cold Storage	206 SW Michigan Street	September 26, 2012	NPDES	Facility requested an evaluation for a CNE. Found not eligible. Need to submit an application for coverage under the ISGP.
WAR125959	Seaport Petroleum (Seaport Fuels)	7800 Detroit Avenue SW	January 26, 2012	NPDES	On March 13, 2012 Ecology sent a warning letter with a determination that Seaport Fuels is subject to coverage under the NPDES ISGP.
WAR000737	South Recycle & Disposal Station	8100 2nd Avenue S	November 8, 2012	NPDES, Urban Waters	The facility should review the source control practices and adequacy of catch basin treatment at the lower SE corner of the transfer station. Must make sure all outside areas that are tributary to the sanitary sewer are accurately mapped and reflected in the site map, and need to clean up hydraulic spill. Failure to report spill to ECY.
<b>RM 2.2-3.4 West (Riverside Drive)</b>					
No Permit	Alaska Logistics	327 S Kenyon Street	October 2, 2012	Urban Waters	Issues include: need labels for recycled oil, hydraulic oil spill on ground under trailer being repaired.
No Permit	Enderis Drywall	253 S Holden Street	October 30, 2012	Urban Waters	No problems noted.
WAR003598	Fibres International	9208 4th Avenue S	June 6, 2012	NPDES	Must revise and submit SWPPP, provide proper cover to minimize SW exposure to the stacks of paper bundles stored outside, provide proper cover to minimize SW exposure to sanding and painting activities, and immediately cease and desist the discharge of process wastewater into the storm drain system.
No Permit	Independent Metals Plant 1	747 S Monroe Street	January 25, 2012 February 16, 2012	Urban Waters NPDES	Significant sheen observed in SW puddles; uncovered scrap metal drop boxes appeared to be the source of the sheen. Water samples contained relatively high concentrations of PCBs.

**Appendix C  
Ecology Source Control Inspections (January through December 2012)**

NPDES Permit ID	Facility Name	Address	Date Inspected	Type of Inspection	Ecology Findings
WAR009725	Independent Metals Plant 2	816 S Kenyon Street	April 26, 2012	NPDES	Ecology issued a \$14,000 penalty and Notice of Violation in July 2012 for PCB discharge and violations of their ISGP. A follow-up Administrative Order will be issued in January 2013 requiring Independent Metals to expand coverage of their existing ISGP to include Plant 1 and the dirt lot on 7th Avenue. They were required to develop a SWPPP for the expanded areas and begin monitoring. The monitoring plan for all stormwater discharges includes PCBs.
			May 30, 2012	NPDES	
			November 2, 2012	NPDES	
No Permit	KJM Electric Co	521 S Monroe Street	October 30, 2012	Urban Waters	Closed for almost two years.
WAR126268	Machinists Inc. Plant 4	707 S Riverside Drive	October 23, 2012	Urban Waters	Issues include: need to label waste oil tank and provide secondary containment.
			November 28, 2012	NPDES	
No Permit	Machinists Inc. Plant 3	8201 7th Avenue S	October 23, 2012	Urban Waters	No violations.
No Permit	Machinists Inc. Plant 3 1/2	8111 7th Avenue S	October 23, 2012	Urban Waters	No violations.
WAR011741	Marine Lumber Services	525 S Chicago Street	January 4, 2012 January 15, 2013 January 30, 2012	NPDES Urban Waters NPDES	Marine Lumber removed all copper-zinc-arsenate (ACZA) treated lumber from the South Yard in compliance with Administrative Order #8862.
			April 26, 2012	NPDES	
WAR001918	Northwest Grating Products	9230 4th Avenue S	October 3, 2012	NPDES	
WAR006429	Rasmussen Equipment Co	8727 5th Avenue S	September 20, 2012	Urban Waters	Issues include: secondary containment for flammable liquids, close containers, clean up oil spill on bare earth, designate liquid contents in 1 to 15 gal containers under stairs.
No Permit	Seattle Heat Transfers	521 S Holden Street	October 30, 2012	Urban Waters	No violations.
WAR000763	The Gear Works Seattle Inc.	500 S Portland Street	February 23 2012	NPDES	In compliance.
No Permit	Tierney Electric Manufacturing Co	7901 7th Avenue S	October 10, 2012	NPDES	
WAR002111	West Coast Wire & Rope Rigging Inc.	7777 7th Avenue S	April 25, 2012	NPDES	Several corrective actions required: change SW sampling location to the storm drain adjacent to the wire stretcher areas, inspect and clean all catch basins by 8/10/12, conduct quarterly vacuum sweeping, submit Annual Report to Ecology.
<b>RM 3.4-3.8 West (EAA-5: Terminal 117)</b>					
WAR001009	Boeing South Park	1420 S Trenton Street	October 2, 2012	NPDES	Inspection for a CNE. Not eligible for CNE because this facility has industrial activities, equipment and/or materials exposed to SW.
WAR012448	South Park Bridge	16th Avenue S	January 31, 2012 February 29, 2012 September 19, 2012 October 17, 2012 November 7, 2012	NPDES NPDES NPDES NPDES NPDES	

**Appendix C**  
**Ecology Source Control Inspections (January through December 2012)**

NPDES Permit ID	Facility Name	Address	Date Inspected	Type of Inspection	Ecology Findings
<b>RM 3.8-4.2 West (Sea King Industrial Park)</b>					
WAR000154	Ace Galvanizing Inc. 96th	429 S 96th Street	May 10, 2012	NPDES	Ecology noted two concerns: A trailer loaded with galvanized material was parked near catch basin. SW that comes in contact with the trailer could bypass the treatment system. Process waste was observed under an open window. This needs to be cleaned and eliminated.
No Permit	Diamond Painting	1601 S 92nd Place, Suite B	November 26, 2012	Urban Waters	No problems noted.
WAG503282	ICON Materials	1115 S 96th Street	September 26, 2012 November 7, 2012	NPDES NPDES	A strip drain was installed in late 2012 in response to a Correction Notice issued to ICON for turbid stormwater discharges.
WAR001949	Industrial Automation	1421 S 93rd Street	January 24, 2012 June 6, 2012	NPDES NPDES	
No Permit	International Paint LLC	1541 S 92nd Place	November 26, 2012	Urban Waters	Issues include: hazardous waste missing labels and accumulation start date.
WAR000264	PSF Mechanical	93222 14th Avenue S	January 31, 2012	NPDES	
WAR002142	Puget Sound Coatings	9220 8th Avenue S	September 20, 2012	NPDES	Need to do the following: include the Operation and Maintenance Manual for the treatment system in the SWPPP, develop and maintain a spill log, old electronic machines and motors must be kept inside or covered, all scrap metal bins must be kept under cover.
WAR011548	Western Ports Containers	9600 8th Avenue S	June 6, 2012	NPDES	

BMP = best management practice  
 CNE = Conditional No Exposure certification  
 EAA = Early Action Area  
 EPA = Environmental Protection Agency  
 ISGP = Industrial Stormwater General Permit  
 NPDES = National Pollutant Discharge Elimination System  
 RM = river mile  
 SPU = Seattle Public Utilities  
 SW = stormwater  
 SWPPP = Stormwater Pollution Prevention Plan  
 SQG = small quantity generator

## **Appendix D**

### **King County Source Control Inspections (January 2012 through December 2012)**

**Appendix D**  
**King County Source Control Inspections (January through December 2012)**

Facility Name	Address	Parcel No.	No. of Inspections	Notes
<b>RM 3.8-4.2 West (Sea King Industrial Park)</b>				
Woolridge Boats	1303 S 96th Street	5624200360	1	
Ace Galvanizing	429 S 96th Street	0523049008	2	Joint inspection with Ecology to address concerns with zinc entering storm drain system
<b>RM 4.2-4.8 West (Restoration Areas)</b>				
Park Des Moines Apartments	10002 Des Moines Memorial Drive S	5624200436	1	
Sunrise Terrace Condominiums	10455 Des Moines Memorial Drive S	8123900000	1	

Source: Adapted from Hickey 2013

## **Appendix E**

### **SPU Source Tracing Sample Results (January 2012 through December 2012)**

**Appendix E**  
**Table 1. SPU Source Tracing Sample Locations (January through December 2012)**

Station ID	Sample No.	Date	Type	Sewer Type	Source Control Area	Source Control Area Name	Outfall	Location	Xcoord	Ycoord
CB166	CB166-021312	02/13/12	CB	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	3443 6th Ave S at Verizon Wireless, CB in east storage yard	1,272,278.60	212,505.01
MH18	MH18-070612	07/06/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	6th Ave S and S Snoqualmie St	1,271,741.49	208,576.18
MH252	MH252-080112	08/01/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	15th Ave S & S. Nevada St -Northeast side of intersection (near stop sign)	1,275,047.01	209,730.91
MH253	MH253-082312	08/23/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Corner of 13th Ave S & S Forest	1,274,502.80	214,259.21
MH254	MH254-082312	08/23/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	North side of sholder - on Columbia Way S - between 15th Ave s and freeway ramp	1,274,950.89	211,583.69
MH255	MH255-082412	08/24/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Beside Phyllis Best on Winthrop & Rainer Ave	1,279,125.29	213,564.60
MH256	MH256-083112	08/31/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	S Atlantic & 17th Ave S	1,275,986.27	218,725.92
MH257	MH257-083112	08/31/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Poplar Pl S & S Bush Pl	1,276,199.30	219,480.90
MH258	MH258-090512	09/05/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	S Dearborn St & 20th PL S	1,277,415.50	220,889.20
MH259	MH259-091812	09/18/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	S Forest St & Airport Way S	1,273,138.24	214,228.59
MH260	MH260-091812	09/18/12	Inline	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	S Spokane St & 17th Ave S	1,275,580.19	212,104.84
RCB100	RCB100-070512	07/05/12	RCB	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB at entrance to Ralph's concrete	1,276,729.30	218,424.90
RCB251	RCB251-070512	07/05/12	RCB	CS	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	24th Ave S at S. Washington St	1,278,343.26	222,646.59
RCB282	RCB282-080112	08/01/12	RCB	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Intersection of S. Oregon St and 10th ave S - southeast section of intersection	1,273,377.09	209,050.38
RCB283	RCB283-080112	08/01/12	RCB	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Intersection of S. Snoqualmie & 12th Ave S - northeast section of intersection	1,274,045.86	208,429.69
RCB284	RCB284-080112	08/01/12	RCB	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Intersection of S. Nevada & 12th Ave S - northeast section of intersection	1,274,094.19	209,754.83
RCB285	RCB285-081512	08/15/12	RCB	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	16th Ave S & S Hind St	1,275,349.11	212,566.92
RCB286	RCB286-082312	08/23/12	RCB	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Corner of 13th Ave S & S Hanford St	1,274,459.62	213,300.34
RCBSTEV4	RCBSTEV4TUL-070612	07/06/12	RCB	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Airport Way S at S Stevens St	1,273,246.68	213,737.72
TUL-CB2	TUL-CB2-070612	07/06/12	CB	SD	RM 0.1-0.9 East	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	3100 Airport Way S	1,273,280.21	213,851.16
CB169	CB169-091012	09/10/12	CB	SD	RM 2.1-2.2 West	EAA-2: Trotsky Inlet	2nd Ave S SD	7417 4th Ave S	1,270,917.76	199,142.20
MH241	MH241-072512	07/25/12	Inline	SD	RM 2.1-2.2 West	EAA-2: Trotsky Inlet	2nd Ave S SD	2nd Ave S at S Fontanelle St	1,270,400.79	199,355.10
RCB175	RCB175-080312	08/03/12	RCB	SD	RM 2.1-2.2 West	EAA-2: Trotsky Inlet	2nd Ave S SD	CB at SW corner of intersection 2nd Ave S and S Holden St	1,270,378.29	198,411.28
RCB200B	RCB200B-072512	07/25/12	RCB	SD	RM 2.1-2.2 West	EAA-2: Trotsky Inlet	2nd Ave S SD	CB NW corner SW Webster St and 2nd Ave S	1,270,388.58	198,972.63
SL4-T3A	SL4-T3A-072412	07/24/12	SedTrap	SD	RM 2.8 East	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	KC Airport SD, south-central lateral, d/s runway	1,275,726.22	199,160.79
SL4-T3A	SL4-T3A-072412G	07/24/12	Inline	SD	RM 2.8 East	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	KC Airport SD, south-central lateral, d/s runway	1,275,726.22	199,160.79
SL4-T6	SL4-T6-061412	06/14/12	SedTrap	SD	RM 2.8 East	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	MH at Airport Way S and S Hardy St	1,274,989.40	202,834.00
SL4-T6	SL4-T6-061412G	06/14/12	Inline	SD	RM 2.8 East	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	MH at Airport Way S and S Hardy St	1,274,989.40	202,834.00
SW1	SW1-040212	04/02/12	Inline	CS	RM 3.4-3.8 West	EAA-5: Terminal 117	CS-1	Tanks at 17th Ave S and S Donovan St	1,275,001.67	195,595.13
KCIAJ-ST1	KCIAJ-062912	06/29/12	SedTrap	SD	RM 3.7-3.9 East	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	KC Airport SD at Boeing/Jorgensen, MH east of E Marginal Wy S	1,277,284.40	195,842.60
KCIAJ-ST1	KCIAJ-062912-G	06/29/12	Inline	SD	RM 3.7-3.9 East	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	KC Airport SD at Boeing/Jorgensen, MH east of E Marginal Wy S	1,277,284.40	195,842.60
KCIA2-ST1	KCIA2-062912	06/29/12	SedTrap	SD	RM 3.7-3.9 East	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	KC Airport SD#2 at former Slip 5, MH east of E Marginal Wy S	1,277,685.38	194,822.09
KCIA2-ST1	KCIA2-062912-G	06/29/12	Inline	SD	RM 3.7-3.9 East	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	KC Airport SD#2 at former Slip 5, MH east of E Marginal Wy S	1,277,685.38	194,822.09
CB78	CB78-083112	08/31/12	CB	SD	RM 4.9 East	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	9883 40th Ave S	1,282,440.23	189,816.89
NST1	NST1-072412G	07/24/12	Inline	SD	RM 4.9 East	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	60-in line west of MLK Way	1,283,043.33	189,358.24
NST2	NST2-072412	07/24/12	SedTrap	SD	RM 4.9 East	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Overflow to WSDOT system	1,280,892.65	189,496.66
NST2	NST2-072412G	07/24/12	Inline	SD	RM 4.9 East	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Overflow to WSDOT system	1,280,892.65	189,496.66
NST3	NST3-072512G	07/25/12	Inline	SD	RM 4.9 East	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Ditch at MLK Way and Boeing Access Rd	1,283,147.01	188,728.61
NST3	NST3-072512	07/25/12	SedTrap	SD	RM 4.9 East	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Ditch at MLK Way and Boeing Access Rd	1,283,147.01	188,728.61
NST4	NST4-072412	07/24/12	SedTrap	SD	RM 4.9 East	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	S Norfolk St at SE corner KC Airport	1,280,697.59	190,890.74

**Appendix E**  
**Table 1. SPU Source Tracing Sample Locations (January through December 2012)**

Station ID	Sample No.	Date	Type	Sewer Type	Source Control Area	Source Control Area Name	Outfall	Location	Xcoord	Ycoord
NST4	NST4-072412G	07/24/12	Inline	SD	RM 4.9 East	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	S Norfolk St at SE corner KC Airport	1,280,697.59	190,890.74
MH205	MH205-072512	07/25/12	Inline	SD	RM 2.0-2.3 East	Slip 3 to SBW	S Brighton St SD	Past end of S Brighton St west of Fox Ave S	1,271,076.59	201,126.61
MH211	MH211-072512	07/25/12	Inline	SD	RM 2.0-2.3 East	Slip 3 to SBW	S River St SD	Last MH on line	1,269,926.63	201,715.30
MH220	MH220-072512	07/25/12	Inline	SD	RM 2.0-2.3 East	Slip 3 to SBW	S River St SD	MH north side S River St at 2nd Ave S	1,270,344.14	201,900.02
MH222	MH222-080312	08/03/12	Inline	SD	RM 2.0-2.3 East	Slip 3 to SBW	S Brighton St SD	Last MH before outfall on SeaTac Marine site	1,270,365.94	201,142.99
MH226	MH226-080312	08/03/12	Inline	SD	RM 2.0-2.3 East	Slip 3 to SBW	S Brighton St SD	Mid-S. Brighton b/w Rosella Foods and diesel ASTs	1,271,510.10	201,104.92
KCIA1-ST1	KCIA1-040912	04/09/12	SedTrap	SD	RM 3.9-4.3 East	Slip 6	KCIA SD#1	KC Airport SD #1 at Slip 6, MH east of E Marginal Wy S	1,278,114.80	193,883.20
ID-ST1	ID-ST1-062012	06/20/12	SedTrap	SD	RM 0.0-1.0 West	Spokane to Kellogg	SW Idaho St SD	18th Ave SW and S Hudson St	1,264,220.16	206,583.53
ID-ST2	ID-ST2-062012	06/20/12	SedTrap	SD	RM 0.0-1.0 West	Spokane to Kellogg	SW Idaho St SD	SW Idaho St just east of W Marginal Wy S	1,265,316.19	209,904.80
ID-ST2	ID-ST2-062012-G	06/20/12	Inline	SD	RM 0.0-1.0 West	Spokane to Kellogg	SW Idaho St SD	SW Idaho St just east of W Marginal Wy S	1,265,316.19	209,904.80
ID-ST3	DK-ST1-061512-G	06/15/12	Inline	SD	RM 0.0-1.0 West	Spokane to Kellogg	SW Idaho St SD	North end of 19th Ave SW at SW Dawson St	1,263,879.13	206,423.86
ID-ST3	DK-ST1-061512	06/15/12	SedTrap	SD	RM 0.0-1.0 West	Spokane to Kellogg	SW Idaho St SD	North end of 19th Ave SW at SW Dawson St	1,263,879.13	206,423.86
CB95	CB95-080312	08/03/12	CB	CS	RM 1.3-1.6 West	Glacier Bay	Private SD-1	5430 W Marginal Wy SW	1,267,235.94	205,123.14
HP-ST4	HP-ST4-061512	06/15/12	SedTrap	SD	RM 1.6-2.1 West	Terminal 115	Highland Park Wy SW SD	Northwest corner of W Marginal and Highland Pk Wy	1,267,618.04	200,796.20
HP-ST6	HP-ST6-062012	06/20/12	SedTrap	SD	RM 1.6-2.1 West	Terminal 115	Highland Park Wy SW SD	SW Michigan St just east of W Marginal Wy S	1,268,086.32	200,870.80
HP-ST6	HP-ST6-062012-G	06/20/12	Inline	SD	RM 1.6-2.1 West	Terminal 115	Highland Park Wy SW SD	SW Michigan St just east of W Marginal Wy S	1,268,086.32	200,870.80
KN-ST1	KN-ST1-062012-G	06/20/12	Inline	SD	RM 1.3-1.6 West	Terminal 115	SW Kenny St SD/T115 CSO	Eastern end of S Kenny St, on T115	1,268,138.36	203,628.91
KN-ST1	KN-ST1-062012	06/20/12	SedTrap	SD	RM 1.3-1.6 West	Terminal 115	SW Kenny St SD/T115 CSO	Eastern end of S Kenny St, on T115	1,268,138.36	203,628.91
MH248	MH248-071912	07/19/12	Inline	SD	RM 1.6-2.1 West	Terminal 115	Highland Park Wy SW SD	West Marginal Way S & Highland Park Way	1,267,288.65	200,816.47
1st-ST1	1ST-ST1-061512	06/15/12	SedTrap	SD	RM 2.1 West	1st Avenue S SD	1st Ave S SD, west	1st Ave S pond, N side of S Holden St--SR99 inlet	1,269,790.80	198,570.70
1st-ST1	1ST-ST1-061512-G	06/15/12	Inline	SD	RM 2.1 West	1st Avenue S SD	1st Ave S SD, west	1st Ave S pond, N side of S Holden St--SR99 inlet	1,269,790.80	198,570.70
1st-ST2	1ST-ST2-061512	06/15/12	SedTrap	SD	RM 2.1 West	1st Avenue S SD	1st Ave S SD, west	1st Ave S pond, N side of S Holden St--SR509 inlet	1,269,960.40	198,632.00
1st-ST2	1ST-ST2-061512-G	06/15/12	Inline	SD	RM 2.1 West	1st Avenue S SD	1st Ave S SD, west	1st Ave S pond, N side of S Holden St--SR509 inlet	1,269,960.40	198,632.00
1st-ST3	1ST-ST3-061412	06/14/12	SedTrap	SD	RM 2.1 West	1st Avenue S SD	1st Ave S SD, west	SW Kenyon St at 4th Ave SW	1,267,991.38	197,680.32
1st-ST7	1ST-ST7-061412	06/14/12	SedTrap	SD	RM 2.1 West	1st Avenue S SD	1st Ave S SD, west	In turn lane of Olsen Pl SW just west of 1st Ave S	1,269,028.98	193,714.03
7TH-ST1	7TH-ST1-062112	06/21/12	SedTrap	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	7th Ave S at S Portland St	1,271,845.54	198,135.36
7TH-ST1	7TH-ST1-062112-G	06/21/12	Inline	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	7th Ave S at S Portland St	1,271,845.54	198,135.36
7TH-ST2	7TH-ST2-061412	06/14/12	SedTrap	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	4th Ave S at S Barton St, next to P-Patch	1,270,702.00	193,616.50
7TH-ST3	7TH-ST3-062112	06/21/12	SedTrap	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	S Southern St just W of 7th Ave S	1,271,346.96	196,842.03
7th-ST3	7TH-ST3-062112-G	06/21/12	Inline	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	S Southern St just W of 7th Ave S	1,271,346.96	196,842.03
ECPILOT	T3-MIDBAY-031412	03/14/12	Inline	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	South Park EC Pilot Test Study	1,271,876.08	198,478.50
ECPILOT	T3-FOREBAY-031412	03/14/12	Inline	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	South Park EC Pilot Test Study	1,271,876.08	198,478.50
ML1	ML1-092412-0	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, surface	1,271,259.86	197,408.26
ML1	ML1-092412-12	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 0-12" composite	1,271,259.86	197,408.26
ML1	ML1-092412-24	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 12-24" composite	1,271,259.86	197,408.26
ML2	ML2-092412-0	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, surface	1,271,281.17	197,401.64
ML2	ML2-092412-12	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 0-12" composite	1,271,281.17	197,401.64
ML2	ML2-092412-24	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 12-24" composite	1,271,281.17	197,401.64
ML3	ML3-092412-0	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, surface	1,271,280.96	197,397.56
ML3	ML3-092412-12	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 0-12" composite	1,271,280.96	197,397.56
ML3	ML3-092412-24	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 12-24" composite	1,271,280.96	197,397.56
ML4	ML4-092412-0	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, surface	1,271,231.21	197,399.18
ML4	ML4-092412-12	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 0-12" composite	1,271,231.21	197,399.18
ML4	ML4-092412-24	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 12-24" composite	1,271,231.21	197,399.18
ML5	ML5-092412-0	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, surface	1,271,184.33	197,405.49
ML5	ML5-092412-12	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 0-12" composite	1,271,184.33	197,405.49

**Appendix E**  
**Table 1. SPU Source Tracing Sample Locations (January through December 2012)**

Station ID	Sample No.	Date	Type	Sewer Type	Source Control Area	Source Control Area Name	Outfall	Location	Xcoord	Ycoord
ML5	ML5-092412-24	09/24/12	Soil	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Marine Lumber ROW cleanup, 12-24" composite	1,271,184.33	197,405.49
RCB195	RCB195-012512	01/25/12	RCB	SD	RM 2.2-3.4 West	Riverside Drive	7th Ave S SD	Independent Metals storage lot at 703 S Monroe St, inlet on the east side of 7th Ave S and midway between S Monroe St and S Elmgrove St	1,271,826.68	197,255.04
96-ST1	96-ST1-062112	06/21/12	SedTrap	SD	RM 3.8-4.2 West	Sea King Industrial Park	S 96th St SD	Driveway north of S 96th St, west of W Marginal PI S	1,270,741.32	192,246.67
96-ST1	96-ST1-062112-G	06/21/12	Inline	SD	RM 3.8-4.2 West	Sea King Industrial Park	S 96th St SD	Driveway north of S 96th St, west of W Marginal PI S	1,270,741.32	192,246.67
96-ST2	96-ST2-062112	06/21/12	SedTrap	SD	RM 3.8-4.2 West	Sea King Industrial Park	S 96th St SD	S 96th St east of W Marginal PI S	1,275,063.56	192,278.28
96-ST2	96-ST2-062112-G	06/21/12	Inline	SD	RM 3.8-4.2 West	Sea King Industrial Park	S 96th St SD	S 96th St east of W Marginal PI S	1,275,063.56	192,278.28
96-ST3	96-ST3-062112	06/21/12	SedTrap	SD	RM 3.8-4.2 West	Sea King Industrial Park	S 96th St SD	Vault at 4th Ave S and S 96th St	1,275,030.99	192,684.64
96-ST3	96-ST3-062112-G	06/21/12	Inline	SD	RM 3.8-4.2 West	Sea King Industrial Park	S 96th St SD	Vault at 4th Ave S and S 96th St	1,275,030.99	192,684.64
HC-ST1	HC-ST1-061412	06/14/12	SedTrap	SD	RM 4.2-4.8 West	Restoration Areas	Hamm Creek	Near Des Moines Memorial Dr S and 17th PI S	1,275,382.75	190,530.64

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Solids, Total	Total Organic Carbon	Arsenic (mg/kg DW)	Copper (mg/kg DW)	Lead (mg/kg DW)	Mercury (mg/kg DW)
<b>SQS/LAET</b>					<b>NA</b>	<b>NA</b>	<b>57</b>	<b>390</b>	<b>450</b>	<b>0.41</b>
<b>CSL/2LAET</b>					<b>NA</b>	<b>NA</b>	<b>93</b>	<b>390</b>	<b>530</b>	<b>0.59</b>
CB166	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	02/13/12	47.5	6.95	8 U	<b>468 J</b>	66	0.1 J
MH18	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	07/06/12	48.6	6.16	20	329	<b>533</b>	<b>7.6</b>
MH252	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/01/12	82	2.74	6 U	47.3	99	<b>0.69</b>
MH253	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	53.6	2.27	56	147	165	0.05
MH254	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	28.5	4.63	<b>180</b>	101	380	0.41
MH255	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/24/12	4	10.7	44	185	100	0.6 U
MH256	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	48.9	13.2	20 U	31	15	0.04
MH257	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	45	6.82	<b>60</b>	377	230	0.4
MH258	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/05/12	3	24.9	190 U	129	80 U	0.8 U
MH259	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	78.4	3.07	5.7	70.7	23	0.03 U
MH260	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	75.2	3.83	12.8	116	<b>2,760</b>	0.09
RCB100	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	64.3	4.33	7 U	74.3	29	0.04
RCB251	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	31.5	14.9	10 U	100	94	0.06
RCB282	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	60.5	13.4	8 U	52.9	27	0.04 U
RCB283	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	40.5	20.1	10 U	50.6	32	0.05 U
RCB284	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	50.6	13.4	10 U	60.8	63	0.06
RCB285	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/15/12	58.1	7.61	7 U	44.5	56	0.04
RCB286	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/23/12	20.7	17	9.9	85.3	83	0.1 U
RCBSTEV4	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/06/12	39.5	9.01	10 U	161	108	0.08 J
TUL-CB2	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	07/06/12	35.8	9.43	10 U	174	106	0.22
CB169	EAA-2: Trotsky Inlet	2nd Ave S SD	CB	09/10/12	48.1	9.19	30 U	279	260 J	<b>0.83</b>
MH241	EAA-2: Trotsky Inlet	2nd Ave S SD	Inline	07/25/12	40	5.36	10 U	163 J	120	0.14 J
RCB175	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	08/03/12	77.4	5.45	5.3	110	47	0.12
RCB200B	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	07/25/12	66	3.43	8 U	92.6 J	56	0.05 J
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	07/24/12			10.4			
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	07/24/12	72.1	1.47	6 U	17.1	9	0.03 U
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	06/14/12	61.5	5.03	8 U	162	75	0.04
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	06/14/12	81.2	1.4	50	270	248	0.04
SW1	EAA-5: Terminal 117	CS-1	Inline	04/02/12	20.3	9.76	13.1	357	110	0.12
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	76.6	5.72 J	20	147 J	194 J	0.09
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	36.8	7.08	20	303	<b>735</b>	0.35
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	78.4	0.628	6 U	15.6	3	0.03 U
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	58.4	1.53	14.6	19.1	16	0.03
CB78	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	CB	08/31/12	35.2	15.5	10 U	163	152	0.1
NST1	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	42.9	5.43	10 U	109 J	71 J	0.11
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12			20.9			
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	86.8	1.96	6 U	25.7 J	24 J	0.03
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/25/12	83.1	4.57	6 U	57.5	26 J	0.02 U

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Solids, Total	Total Organic Carbon	Arsenic (mg/kg DW)	Copper (mg/kg DW)	Lead (mg/kg DW)	Mercury (mg/kg DW)
<b>SQS/LAET</b>					<b>NA</b>	<b>NA</b>	<b>57</b>	<b>390</b>	<b>450</b>	<b>0.41</b>
<b>CSL/2LAET</b>					<b>NA</b>	<b>NA</b>	<b>93</b>	<b>390</b>	<b>530</b>	<b>0.59</b>
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/25/12	72.9	4.82	8 U	79	78	0.07
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12			11.6			
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	58.2	4.66	8 U	34.6 J	64 J	0.07
MH205	Slip 3 to SBW	S Brighton St SD	Inline	07/25/12	86.5	0.314	12	40.2 J	448	0.02 U
MH211	Slip 3 to SBW	S River St SD	Inline	07/25/12	47.9	6.71	10	153 J	115	0.11 J
MH220	Slip 3 to SBW	S River St SD	Inline	07/25/12	62.5	5.69	36	192 J	393	0.12 J
MH222	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	79	2.24	12	25.4	24	0.04
MH226	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	82.4	5.24	10 U	98.5	119	0.12
KCIA1-ST1	Slip 6	KCIA SD#1	SedTrap	04/09/12	46.6	8.48	11	62.6	72	0.06
ID-ST1	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	28.6	12.8	18.2	122	98	0.21
ID-ST2	Spokane to Kellogg	SW Idaho St SD	Inline	06/20/12	49.7	6.14	10 U	88.9	110	0.28
ID-ST2	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	71.2	1.04	7 U	26.1	11	0.04
ID-ST3	Spokane to Kellogg	SW Idaho St SD	Inline	06/15/12	87.2	1.59	5 U	16.7	25	0.03
ID-ST3	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/15/12	58.2	4.66	8 U	18.3	28	0.06
CB95	Glacier Bay	Private SD-1	CB	08/03/12	24	14.4	40	<b>464</b>	189	0.27
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	Inline	06/20/12	52.8	4.97	43	155	<b>458</b>	0.33
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	SedTrap	06/20/12	38.1	5.24	8 U	61.6	35	0.09
HP-ST4	Terminal 115	Highland Park Wy SW SD	SedTrap	06/15/12	57.1	8.09	8 U	39.2	45	0.05
HP-ST6	Terminal 115	Highland Park Wy SW SD	Inline	06/20/12	36.2	7.07	29.5	140	150	0.24
HP-ST6	Terminal 115	Highland Park Wy SW SD	SedTrap	06/20/12	61.9	3.17	20	103	118	0.21
MH248	Terminal 115	Highland Park Wy SW SD	Inline	07/19/12	48.6	2.02	10 U	27.8	56	0.06
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	59	9.61	9 U	108	40	0.06
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	39.2	4.3	8.6	120	60	0.12
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	73	5.11	7 U	72.1	25	0.03
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	38.8	4.35	10 U	66.4	68	0.11
1ST-ST3	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	62.7	7.33	8 U	30.8	20	0.03 U
1ST-ST7	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	46.1	10.2	10 U	96.6	213	0.13
7TH-ST1	Riverside Drive	7th Ave S SD	Inline	06/21/12	39.3	7	10 U	222	163	0.22
7TH-ST1	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	45.3	6.13	10 U	177	113	0.19
7TH-ST2	Riverside Drive	7th Ave S SD	SedTrap	06/14/12	56.8	5.72	8	15.5	15	0.04
7TH-ST3	Riverside Drive	7th Ave S SD	Inline	06/21/12	42.3	7.43	10 U	144	142	0.21
7TH-ST3	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	35	4.09	20	125	105	0.2
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	4.9	6.3	110 U	257	150	0.5 U
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	4.8	6.13	110 U	249	150	0.4 U
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12			<b>930</b>	<b>3680</b>		
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12			<b>980</b>	<b>938</b>		
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12			<b>334</b>	<b>396</b>		
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12			<b>220</b>	<b>817</b>		

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Solids, Total	Total Organic Carbon	Arsenic (mg/kg DW)	Copper (mg/kg DW)	Lead (mg/kg DW)	Mercury (mg/kg DW)
<b>SQS/LAET</b>					NA	NA	57	390	450	0.41
<b>CSL/2LAET</b>					NA	NA	93	390	530	0.59
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12			30	300		
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12			40	99.3		
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12			78	400		
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12			60	291		
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12			50	224		
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12			210	587		
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12			40	133		
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12			9	24.7		
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12			40	161		
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12			10	53.1		
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12			8	17.7		
RCB195	Riverside Drive	7th Ave S SD	RCB	01/25/12	79.1	1.19	8	64.9	30	0.08
96-ST1	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	76.1	0.91	6 U	20.4	15	0.02 U
96-ST1	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	68.7	3	7 U	33.6	33	0.03
96-ST2	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	77.9	1.78	6 U	21.1	37	0.03
96-ST2	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	54.7	6.01	10	47.7	54	0.06
96-ST3	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	71.6	2.8	7 U	10.2	9	0.03 U
96-ST3	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	60.2	3.59	8 U	23.5	25	0.05
HC-ST1	Restoration Areas	Hamm Creek	SedTrap	06/14/12	78.9	3.15	6 U	14.7	9	0.28

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Zinc (mg/kg DW)	Diesel Range HC* (mg/kg DW)	Motor Oil Range HC* (mg/kg DW)	Total PCBs (ug/kg DW)	Acenaphthene (ug/kg DW)	Acenaphthylene (ug/kg DW)
<b>SQS/LAET</b>					<b>410</b>	<b>2,000</b>	<b>2,000</b>	<b>130</b>	<b>500</b>	<b>1,300</b>
<b>CSL/2LAET</b>					<b>960</b>	<b>2,000</b>	<b>2,000</b>	<b>1,000</b>	<b>500</b>	<b>1,300</b>
CB166	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	02/13/12	840	190	1,200	261	97 U	97 U
MH18	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	07/06/12	676	2,100	5,600	45,900	110 J	60 J
MH252	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/01/12	160	28	240	29	56 U	56 U
MH253	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	1,930	53	300	28 U	19 U	19 U
MH254	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	2,320	48	230	19 U	20 U	20 U
MH255	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/24/12	1,380	330	1,700	109	95 U	95 U
MH256	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	216			20 U	23 U	23 U
MH257	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	3,010			208	340 U	340 U
MH258	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/05/12	1,010			20 U	360 U	360 U
MH259	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	231	320	1,000	7,300	110	57 U
RCB100	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	228	2,300	7,200	22	34 U	34 U
RCB251	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	364	600	3,700	103 J	120 U	120 U
RCB282	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	185	540	2,400	32 U	70 U	70 U
RCB283	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	223	57	390	46 U	58 U	58 U
RCB284	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	314	29	260	33 U	59 U	59 U
RCB285	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/15/12	262 J	530	800	25 UJ	95 U	95 U
RCB286	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/23/12	422	300	1,400	23 U	38 U	38 U
RCBSTEVE4	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/06/12	955	2,500	12,000	12,400	99 J	200 U
TUL-CB2	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	07/06/12	791	2,200	12,000	8,200	200 U	200 U
CB169	EAA-2: Trotsky Inlet	2nd Ave S SD	CB	09/10/12	1,660	950	4,900	1,030 J	70 J	130 U
MH241	EAA-2: Trotsky Inlet	2nd Ave S SD	Inline	07/25/12	886 J	750	3,600	288 J	100 U	100 U
RCB175	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	08/03/12	554	660	3,200	115 J	77 U	77 U
RCB200B	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	07/25/12	311 J	71	600	96 J	56 U	56 U
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	07/24/12						
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	07/24/12	45	71	320	17 U	58 U	58 U
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	06/14/12	647	480	2,700	160	75	75 U
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	06/14/12	480 J	59	360	42 J	59 U	59 U
SW1	EAA-5: Terminal 117	CS-1	Inline	04/02/12	580	380	1,400	520 J	160 U	160 U
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	529	110	880	2,420	96 U	96 U
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	1,420	360	2,100	1,110	890 U	890 U
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	39	8	43	17 U	19 U	19 U
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	77	87	230	96	56	56 U
CB78	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	CB	08/31/12	1,830	1,300	5,600	144 J	230 J	140 J
NST1	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	629	990	4,000	104 J	94 U	94 U
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12						
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	166 J	79	300	17 U	19 U	19 U
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/25/12	389	180	1,200	17 U	57 U	57 U

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Zinc (mg/kg DW)	Diesel Range HC* (mg/kg DW)	Motor Oil Range HC* (mg/kg DW)	Total PCBs (ug/kg DW)	Acenaphthene (ug/kg DW)	Acenaphthylene (ug/kg DW)
SQS/LAET					410	2,000	2,000	130	500	1,300
CSL/2LAET					960	2,000	2,000	1,000	500	1,300
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/25/12	671	150	950	22 J	93 U	93 U
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12						
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	147	75	200	39 J	22	24
MH205	Slip 3 to SBW	S Brighton St SD	Inline	07/25/12	204 J	27 U	92	18 U	18 U	18 U
MH211	Slip 3 to SBW	S River St SD	Inline	07/25/12	732 J	920	3,600	201 J	100	92
MH220	Slip 3 to SBW	S River St SD	Inline	07/25/12	475 J	740	2,400	870 J	35 J	51 J
MH222	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	198	35	140	39 J	19 U	19 U
MH226	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	519	95	690	158 J	54	54 U
KCIA1-ST1	Slip 6	KCIA SD#1	SedTrap	04/09/12	314	200	960	29 J	120	45 J
ID-ST1	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	1,540	220	1,200	276 J	20 J	39 U
ID-ST2	Spokane to Kellogg	SW Idaho St SD	Inline	06/20/12	402	2,000	4,400	71 J	83 U	83 U
ID-ST2	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	82	15	64	56 J	18 U	18 U
ID-ST3	Spokane to Kellogg	SW Idaho St SD	Inline	06/15/12	110 J	57 U	120 U	16 U	18 U	18 U
ID-ST3	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/15/12	165	30	240	153 J	57 U	57 U
CB95	Glacier Bay	Private SD-1	CB	08/03/12	1,890	2,600	7,600	2,210 J	220	200 U
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	Inline	06/20/12	643	1,200	3,100	18 U	73 J	77 U
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	SedTrap	06/20/12	228	180	700	179 J	30	18 U
HP-ST4	Terminal 115	Highland Park Wy SW SD	SedTrap	06/15/12	176	130	760	490	61 U	61 U
HP-ST6	Terminal 115	Highland Park Wy SW SD	Inline	06/20/12	932	480	2,100	271 J	100 U	100 U
HP-ST6	Terminal 115	Highland Park Wy SW SD	SedTrap	06/20/12	604	190	800	267 J	76	33 U
MH248	Terminal 115	Highland Park Wy SW SD	Inline	07/19/12	69	12	62	47 J	20 U	20 U
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	447 J	730	3,600	132	81 U	81 U
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	635	960	4,300	550	130 U	130 U
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	122 J	69 U	370	12 J	19 U	19 U
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	332	260	1,500	118 J	96 U	96 U
1ST-ST3	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	111	110	700	18 U	59 U	59 U
1ST-ST7	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	583	1,200	6,600	1,350 J	110 U	110 U
7TH-ST1	Riverside Drive	7th Ave S SD	Inline	06/21/12	827	370	1,700	350	58 U	58 U
7TH-ST1	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	743	460	1,900	490 J	110 U	110 U
7TH-ST2	Riverside Drive	7th Ave S SD	SedTrap	06/14/12	119	10	72	19 U	58 U	58 U
7TH-ST3	Riverside Drive	7th Ave S SD	Inline	06/21/12	760	210	800	166 J	57 U	57 U
7TH-ST3	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	771	220	1,100	186 J	35 U	35 U
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	1,240	730	3,300	109	100 U	100 U
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	1,330	620	2,800	144	100 U	100 U
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12	1,320					
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12	740					
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12	1,770					
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12	382					

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Zinc (mg/kg DW)	Diesel Range HC* (mg/kg DW)	Motor Oil Range HC* (mg/kg DW)	Total PCBs (ug/kg DW)	Acenaphthene (ug/kg DW)	Acenaphthylene (ug/kg DW)
<b>SQS/LAET</b>					<b>410</b>	<b>2,000</b>	<b>2,000</b>	<b>130</b>	<b>500</b>	<b>1,300</b>
<b>CSL/2LAET</b>					<b>960</b>	<b>2,000</b>	<b>2,000</b>	<b>1,000</b>	<b>500</b>	<b>1,300</b>
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12	328					
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12	133					
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12	220					
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12	417					
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12	339					
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12	355					
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12	104					
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12	55					
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12	354					
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12	89					
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12	53					
RCB195	Riverside Drive	7th Ave S SD	RCB	01/25/12	473	320	1,000	67	250	19 U
96-ST1	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	275	16	80	19 U	19 U	19 U
96-ST1	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	439	40	180	14 J	20	19 U
96-ST2	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	591	31	160	19 U	9 J	19 U
96-ST2	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	360	150	910	82 J	20	20 U
96-ST3	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	46	6 U	29	18 U	19 U	19 U
96-ST3	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	86	11	57	18 U	19 U	19 U
HC-ST1	Restoration Areas	Hamm Creek	SedTrap	06/14/12	71	9	56	17 U	57 U	57 U

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Anthracene (ug/kg DW)	Fluorene (ug/kg DW)	Naphtha- lene (ug/kg DW)	Phenan- threne (ug/kg DW)	Total LPAH (ug/kg DW)	Benzo(a) anthracene (ug/kg DW)
<b>SQS/LAET</b>					<b>960</b>	<b>540</b>	<b>2,100</b>	<b>1,500</b>	<b>5,200</b>	<b>1,300</b>
<b>CSL/2LAET</b>					<b>960</b>	<b>540</b>	<b>2,100</b>	<b>1,500</b>	<b>5,200</b>	<b>1,600</b>
CB166	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	02/13/12	58 J	53 J	130	420	661 J	630
MH18	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	07/06/12	190	160	240	840	1,600 J	640
MH252	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/01/12	56 U	56 U	56 U	98	98	67
MH253	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	19 U	19 U	19 U	12 J	12 J	19 U
MH254	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	20 U	20 U	20 U	20 U	20 U	20 U
MH255	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/24/12	95 U	95 U	95 U	95 U	95 U	95 U
MH256	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	23 U	23 U	23 U	26	26	16 J
MH257	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	340 U	340 U	340 U	410	410	280 J
MH258	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/05/12	360 U	360 U	360 U	360 U	360 U	360 U
MH259	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	260	140	57	<b>2,300</b>	2,867	1,300
MH260	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	57 U	57 U	31 J	57	88 J	37 J
RCB100	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	34 U	59	32 J	240	331 J	29 J
RCB251	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	120 U	120 U	75 J	190	265 J	81 J
RCB282	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	98	53 J	77	280	508 J	98
RCB283	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	58 U	58 U	58 U	73	73	58 U
RCB284	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	59 U	59 U	30 J	77	107 J	59 U
RCB285	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/15/12	95 U	95 U	95 U	320	320	160
RCB286	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/23/12	38 U	38 U	38 U	72	72	28 J
RCBSTEV4	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/06/12	350	230	300	<b>2,300</b>	3,279 J	<b>1,700</b>
TUL-CB2	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	07/06/12	340	280	500	<b>2,500</b>	3,620	<b>1,600</b>
CB169	EAA-2: Trotsky Inlet	2nd Ave S SD	CB	09/10/12	170	130	140	1,400	1,910 J	600
MH241	EAA-2: Trotsky Inlet	2nd Ave S SD	Inline	07/25/12	63 J	100 U	100 J	280	443 J	200
RCB175	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	08/03/12	77 U	77 U	42 J	200	242 J	120
RCB200B	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	07/25/12	28 J	56 U	56 U	180	208 J	95
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	07/24/12						
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	07/24/12	58 U	58 U	58 U	250	250	87
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	06/14/12	130	98	150	680	1,133	330
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	06/14/12	59 U	59 U	59 U	32 J	32 J	29 J
SW1	EAA-5: Terminal 117	CS-1	Inline	04/02/12	160 U	160 U	160 U	210	210	110 J
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	110	96 U	96 U	790	900	580
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	490 J	890 U	890 U	<b>3,400</b>	3,890 J	<b>2,800</b>
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	19 U	19 U	19 U	13 J	13 J	11 J
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	150	71	34 J	1,300	1,611 J	840
CB78	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	CB	08/31/12	<b>3,200</b>	<b>780</b>	<b>240 U</b>	<b>14,000</b>	<b>18,350 J</b>	<b>18,000</b>
NST1	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	94	61 J	66 J	540	761 J	410
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12						
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	18 J	12 J	13 J	78	121 J	74
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/25/12	57 U	57 U	57 U	220	220	210

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Anthracene (ug/kg DW)	Fluorene (ug/kg DW)	Naphtha- lene (ug/kg DW)	Phenan- threne (ug/kg DW)	Total LPAH (ug/kg DW)	Benzo(a) anthracene (ug/kg DW)
<b>SQS/LAET</b>					<b>960</b>	<b>540</b>	<b>2,100</b>	<b>1,500</b>	<b>5,200</b>	<b>1,300</b>
<b>CSL/2LAET</b>					<b>960</b>	<b>540</b>	<b>2,100</b>	<b>1,500</b>	<b>5,200</b>	<b>1,600</b>
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/25/12	70 J	93 U	46 J	390	506 J	310
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12						
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	75	25	56	470	672	510
MH205	Slip 3 to SBW	S Brighton St SD	Inline	07/25/12	18 U	18 U	18 U	10 J	10 J	18 U
MH211	Slip 3 to SBW	S River St SD	Inline	07/25/12	320	110	140	920	1,682	<b>2,200</b>
MH220	Slip 3 to SBW	S River St SD	Inline	07/25/12	120	51 J	160	430	847 J	370
MH222	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	10 J	19 U	19 U	34	44 J	25
MH226	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	150	67	35 J	770	1,076 J	480
KCIA1-ST1	Slip 6	KCIA SD#1	SedTrap	04/09/12	400	190	110	<b>3,400</b>	4,265 J	<b>2,100</b>
ID-ST1	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	35 J	24 J	26 J	340	445 J	220
ID-ST2	Spokane to Kellogg	SW Idaho St SD	Inline	06/20/12	95	83 U	110	440	645	320
ID-ST2	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	10 J	18 U	11 J	48	69 J	52
ID-ST3	Spokane to Kellogg	SW Idaho St SD	Inline	06/15/12	18 U	18 U	18 U	18 U	18 U	18 U
ID-ST3	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/15/12	57 U	57 U	57 U	57 U	57 U	57 U
CB95	Glacier Bay	Private SD-1	CB	08/03/12	200 U	200	430	1,300	2,150	560
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	Inline	06/20/12	220	58 J	46 J	390	787 J	340
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	SedTrap	06/20/12	120	47	33	410	640	370
HP-ST4	Terminal 115	Highland Park Wy SW SD	SedTrap	06/15/12	61 U	61 U	61 U	64	64	34 J
HP-ST6	Terminal 115	Highland Park Wy SW SD	Inline	06/20/12	100 U	100 U	100 U	96 J	96 J	76 J
HP-ST6	Terminal 115	Highland Park Wy SW SD	SedTrap	06/20/12	66	33	30 J	140	345 J	110
MH248	Terminal 115	Highland Park Wy SW SD	Inline	07/19/12	20 U	20 U	20 U	27	27	15 J
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	57 J	40 J	53 J	320	470 J	190
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	130 U	82 J	94 J	550	726 J	300
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	15 J	11 J	9 J	96	131 J	76
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	96 U	96 U	96 U	120	120	110
1ST-ST3	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	38 J	59 U	59 U	260	298 J	220
1ST-ST7	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	180	110	97 J	<b>1,600</b>	1,987 J	990
7TH-ST1	Riverside Drive	7th Ave S SD	Inline	06/21/12	61	58 U	32 J	300	393 J	260
7TH-ST1	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	130	110 U	65 J	560	755 J	420
7TH-ST2	Riverside Drive	7th Ave S SD	SedTrap	06/14/12	58 U	58 U	58 U	58 U	58 U	58 U
7TH-ST3	Riverside Drive	7th Ave S SD	Inline	06/21/12	31 J	57 U	34 J	160	225 J	120
7TH-ST3	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	37	21 J	35	220	313 J	140
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	120	100 U	100 U	340	460	400
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	100	100 U	100 U	260	360	330
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12						

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Anthracene (ug/kg DW)	Fluorene (ug/kg DW)	Naphtha- lene (ug/kg DW)	Phenan- threne (ug/kg DW)	Total LPAH (ug/kg DW)	Benzo(a) anthracene (ug/kg DW)
<b>SQS/LAET</b>					<b>960</b>	<b>540</b>	<b>2,100</b>	<b>1,500</b>	<b>5,200</b>	<b>1,300</b>
<b>CSL/2LAET</b>					<b>960</b>	<b>540</b>	<b>2,100</b>	<b>1,500</b>	<b>5,200</b>	<b>1,600</b>
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12						
RCB195	Riverside Drive	7th Ave S SD	RCB	01/25/12	520	330	42	1,000	2,142	260
96-ST1	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	19 U	19 U	19 U	15 J	15 J	19 U
96-ST1	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	50	23	11 J	270	374 J	210
96-ST2	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	42	34	19 U	210	295 J	130
96-ST2	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	86	40	36	450	632	300
96-ST3	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	19 U	19 U	19 U	10 J	10 J	19 U
96-ST3	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	19 U	19 U	19 U	26	26	25
HC-ST1	Restoration Areas	Hamm Creek	SedTrap	06/14/12	57 U	57 U	57 U	130	130	51 J

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Benzo(a) pyrene (ug/kg DW)	Benzo (g,h,i)perylene (ug/kg DW)	Total Benzo- fluoranthenes (ug/kg DW)	Chrysene (ug/kg DW)	Dibenzo(a,h) anthracene (ug/kg DW)	Fluoranthene (ug/kg DW)
<b>SQS/LAET</b>					<b>1,600</b>	<b>670</b>	<b>3,200</b>	<b>1,400</b>	<b>230</b>	<b>1,700</b>
<b>CSL/2LAET</b>					<b>1,600</b>	<b>720</b>	<b>3,600</b>	<b>2,800</b>	<b>230</b>	<b>2,500</b>
CB166	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	02/13/12	1,200	1,200	2,300	1,200	420	780
MH18	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	07/06/12	680	490	1,400	1,200	170	1,600
MH252	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/01/12	95	140 J	190	120	56 U	180
MH253	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	15 J	32	28 J	28	19 U	18 J
MH254	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	20 U	20 U	39 U	20 U	20 U	20 U
MH255	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/24/12	95 U	95 U	71 J	52 J	95 U	62 J
MH256	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	17 J	32	52	34	23 U	40
MH257	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	400	590	840	660	340 U	780
MH258	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/05/12	360 U	200 J	250 J	220 J	360 U	240 J
MH259	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	1,600	1,300	3,200	1,900	450	3,500
MH260	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	60	120	130	160	57 U	88
RCB100	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	34 U	74	91	110	34 U	130
RCB251	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	87 J	240	220 J	260	120 U	270
RCB282	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	98	190 J	310	240	70 U	420
RCB283	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	32 J	70 J	81 J	84	58 U	84
RCB284	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	82	150 J	110 J	91	59 U	120
RCB285	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/15/12	150	150	370	260	95 U	440
RCB286	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/23/12	38	53	93	72	38 U	100
RCBSTEVE4	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/06/12	2,200	1,900	5,300	3,700	620	5,300
TUL-CB2	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	07/06/12	2,100	1,800	5,200	4,000	580	6,300
CB169	EAA-2: Trotsky Inlet	2nd Ave S SD	CB	09/10/12	660	600	1,500	1,300	200	1,700
MH241	EAA-2: Trotsky Inlet	2nd Ave S SD	Inline	07/25/12	240	370	550	550	100	600
RCB175	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	08/03/12	140	180 J	370	340	77 U	380
RCB200B	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	07/25/12	120	170	270	210	36 J	290
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	07/24/12						
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	07/24/12	150	150	380	260	58	350
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	06/14/12	350	290	760	550	120	970
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	06/14/12	44 J	62	85	53 J	59 U	74
SW1	EAA-5: Terminal 117	CS-1	Inline	04/02/12	160 J	240	400	320	160 U	380
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	730	650	1,700	960	210	1,700
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	3,700	3,500	8,200	4,500	1,300	8,200
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	13 J	13 J	35 J	19	19 U	33
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	1,000	870	2,400	1,400	300	2,800
CB78	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	CB	08/31/12	18,000	8,600	37,000	23,000	3,900	40,000
NST1	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	550	530	1,200	760	180	1,100
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12						
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	79	68	150	110	26	150
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/25/12	300	330	650	440	130	600

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Benzo(a) pyrene (ug/kg DW)	Benzo (g,h,i)pery- lene (ug/kg DW)	Total Benzo- fluoran- thenes (ug/kg DW)	Chrysene (ug/kg DW)	Dibenzo(a,h) anthracene (ug/kg DW)	Fluoran- thene (ug/kg DW)
<b>SQS/LAET</b>					<b>1,600</b>	<b>670</b>	<b>3,200</b>	<b>1,400</b>	<b>230</b>	<b>1,700</b>
<b>CSL/2LAET</b>					<b>1,600</b>	<b>720</b>	<b>3,600</b>	<b>2,800</b>	<b>230</b>	<b>2,500</b>
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/25/12	420	460	940	530	160	730
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12						
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	660	<b>700</b>	1,500	1,100	230	1,200
MH205	Slip 3 to SBW	S Brighton St SD	Inline	07/25/12	18 U	14 J	16 J	16 J	18 U	25
MH211	Slip 3 to SBW	S River St SD	Inline	07/25/12	1,500	<b>980</b>	<b>3,700</b>	<b>4,100</b>	<b>380</b>	<b>6,200</b>
MH220	Slip 3 to SBW	S River St SD	Inline	07/25/12	530	580	950	720	160	980
MH222	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	28	23 J	70	44	19 U	64
MH226	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	530	330 J	1,100	810	86	1,200
KCIA1-ST1	Slip 6	KCIA SD#1	SedTrap	04/09/12	<b>3,000</b>	<b>1,900</b>	<b>6,000</b>	<b>3,500</b>	<b>640</b>	<b>6,900</b>
ID-ST1	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	330	450	1,000	520	130	600
ID-ST2	Spokane to Kellogg	SW Idaho St SD	Inline	06/20/12	590	<b>730</b>	1,500	700	170	970
ID-ST2	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	72	120	250	120	18 U	96
ID-ST3	Spokane to Kellogg	SW Idaho St SD	Inline	06/15/12	18 U	18 U	18 U	19	18 U	18 U
ID-ST3	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/15/12	57 U	57 U	110 U	57 U	57 U	57 U
CB95	Glacier Bay	Private SD-1	CB	08/03/12	660	600 J	1,900	1,400	120 J	<b>2,000</b>
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	Inline	06/20/12	440	270	1,100	710	120	1,000
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	SedTrap	06/20/12	400	320	1,200	720	120	1,000
HP-ST4	Terminal 115	Highland Park Wy SW SD	SedTrap	06/15/12	46 J	40 J	110 J	76	61 U	110
HP-ST6	Terminal 115	Highland Park Wy SW SD	Inline	06/20/12	110	110	260	180	100 U	230
HP-ST6	Terminal 115	Highland Park Wy SW SD	SedTrap	06/20/12	91	98	250	250	26 J	400
MH248	Terminal 115	Highland Park Wy SW SD	Inline	07/19/12	18 J	17 J	32 J	22	20 U	37
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	220	230	500	430	89	620
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	340	270	900	720	130 U	980
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	83	49	160	110	26	190
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	120	86 J	290	190	96 U	270
1ST-ST3	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	250	130	560	340	74	640
1ST-ST7	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	1,300	<b>800</b>	3,000	<b>1,900</b>	<b>320</b>	<b>3,500</b>
7TH-ST1	Riverside Drive	7th Ave S SD	Inline	06/21/12	330	200	730	410	78	670
7TH-ST1	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	490	410	1,100	820	110 U	1,100
7TH-ST2	Riverside Drive	7th Ave S SD	SedTrap	06/14/12	58 U	58 U	120 U	58 U	58 U	58 U
7TH-ST3	Riverside Drive	7th Ave S SD	Inline	06/21/12	170	130	390	200	28 J	320
7TH-ST3	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	170	150	420	320	53	440
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	250	240	790	780	60 J	1,500
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	220	200	700	740	50 J	1,200
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12						

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Benzo(a) pyrene (ug/kg DW)	Benzo (g,h,i)pery- lene (ug/kg DW)	Total Benzo- fluoran- thenes (ug/kg DW)	Chrysene (ug/kg DW)	Dibenzo(a,h) anthracene (ug/kg DW)	Fluoran- thene (ug/kg DW)
<b>SQS/LAET</b>					<b>1,600</b>	<b>670</b>	<b>3,200</b>	<b>1,400</b>	<b>230</b>	<b>1,700</b>
<b>CSL/2LAET</b>					<b>1,600</b>	<b>720</b>	<b>3,600</b>	<b>2,800</b>	<b>230</b>	<b>2,500</b>
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12						
RCB195	Riverside Drive	7th Ave S SD	RCB	01/25/12	150	71	310	350	29 J	1,200
96-ST1	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	17 J	10 J	45	22	19 U	35
96-ST1	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	230	120	460	280	38	550
96-ST2	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	160	62	310	190	24	360
96-ST2	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	320	150	650	450	73	770
96-ST3	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	12 J	19 U	26 J	14 J	19 U	24
96-ST3	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	32	32	69	44	19 U	72
HC-ST1	Restoration Areas	Hamm Creek	SedTrap	06/14/12	54 J	57 U	94 J	63	57 U	180

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Indeno (1,2,3-cd) pyrene (ug/kg DW)	Pyrene (ug/kg DW)	Total HPAH (ug/kg DW)	Total cPAH (ug/kg DW)	Bis (2-ethylhexyl) phthalate (ug/kg DW)	Butylbenzyl phthalate (ug/kg DW)
<b>SQS/LAET</b>					<b>600</b>	<b>2,600</b>	<b>12,000</b>	<b>1,000</b>	<b>1,300</b>	<b>63</b>
<b>CSL/2LAET</b>					<b>690</b>	<b>3,300</b>	<b>17,000</b>	<b>1,000</b>	<b>1,900</b>	<b>900</b>
CB166	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	02/13/12	910	860	9,500	1,764	2,000	710
MH18	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	07/06/12	320	1,800	8,300	996	10,000 B	240
MH252	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/01/12	67	170	1,029 J	140	440 B	50 J
MH253	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	10 J	20	151 J	24	130 J	19 U
MH254	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	20 U	20 U	39 U	18	83 J	13 J
MH255	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/24/12	95 U	52 J	237 J	84	920 B	95 U
MH256	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	15 J	42 Q	248 J	30	320 B	27
MH257	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	290 J	840 Q	4,680 J	616	14,000 B	2,200
MH258	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/05/12	360 U	470	1,380 J	315	7,800 B	360 U
MH259	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	1,200	3,100	17,550	2,369	1,400 B	85
MH260	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	48 J	160	803 J	95	1,000 B	57 U
RCB100	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	34 U	240	674 J	39	8,100 B	170
RCB251	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	87 J	350	1,595 J	152	7,700 B	120 U
RCB282	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	77	280	1,713 J	163	3,400 B	530
RCB283	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	58 U	99	450 J	58	710 B	14,000
RCB284	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	53 J	140	746 J	114	1,200 B	150
RCB285	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/15/12	100	380	2,010	235	1,300 B	95 U
RCB286	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/23/12	30 J	110	524 J	61	1,400 B	110
RCBSTEVE4	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/06/12	1,600	4,400	26,720	3,345	37,000 B	500
TUL-CB2	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	07/06/12	1,500	5,000	28,080	3,202	46,000 B	620
CB169	EAA-2: Trotsky Inlet	2nd Ave S SD	CB	09/10/12	410	1,700	8,670	1,004	28,000	3,500
MH241	EAA-2: Trotsky Inlet	2nd Ave S SD	Inline	07/25/12	210	660	3,480	382	8,100 B	450 J
RCB175	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	08/03/12	85	470	2,085 J	216	8,200 B	260
RCB200B	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	07/25/12	110	260	1,561 J	184	1,700 B	250 J
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	07/24/12						
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	07/24/12	120	270	1,825	235	120 J	58 U
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	06/14/12	200	910	4,480	533	5,900	620
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	06/14/12	32 J	68	447 J	71	390 B	59 U
SW1	EAA-5: Terminal 117	CS-1	Inline	04/02/12	140 J	390	2,140 J	260	8,200 B	310
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	550	1,300	8,380	1,107	690	72 J
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	2,900	7,000	42,100	5,655	20,000 B	710 J
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	19 U	25	149 J	23	27	19 U
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	770	2,200	12,580	1,535	510 B	56 U
CB78	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	CB	08/31/12	9,200	34,000	191,700	26,210	46,000 B	710
NST1	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	410	1,100	6,240	832	6,100 B	180 J
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12						
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	44	180	881	117	480 B	29 J
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/25/12	240	560	3,460	466	1,000 B	82 J

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Indeno (1,2,3-cd) pyrene (ug/kg DW)	Pyrene (ug/kg DW)	Total HPAH (ug/kg DW)	Total cPAH (ug/kg DW)	Bis (2-ethylhexyl) phthalate (ug/kg DW)	Butylbenzyl phthalate (ug/kg DW)
<b>SQS/LAET</b>					<b>600</b>	<b>2,600</b>	<b>12,000</b>	<b>1,000</b>	<b>1,300</b>	<b>63</b>
<b>CSL/2LAET</b>					<b>690</b>	<b>3,300</b>	<b>17,000</b>	<b>1,000</b>	<b>1,900</b>	<b>900</b>
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/25/12	350	690	4,590	649	1,700 B	200 J
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12						
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	570	1,200	7,670	1,021	380 B	54 J
MH205	Slip 3 to SBW	S Brighton St SD	Inline	07/25/12	18 U	23	94 J	16	110 J	76 J
MH211	Slip 3 to SBW	S River St SD	Inline	07/25/12	800	6,300	26,160	2,363	8,200 B	310 J
MH220	Slip 3 to SBW	S River St SD	Inline	07/25/12	380	990	5,660	771	2,300 B	740 J
MH222	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	17 J	62	333 J	43	350 B	84
MH226	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	260	1,200	5,996 J	757	1,300 B	380
KCIA1-ST1	Slip 6	KCIA SD#1	SedTrap	04/09/12	1,800	5,100	30,940	4,281	1,800 B	120
ID-ST1	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	370	530	4,150	546	2,500 B	260
ID-ST2	Spokane to Kellogg	SW Idaho St SD	Inline	06/20/12	500	800	6,280	897	880	520
ID-ST2	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	94	98	902	116	200 B	11 J
ID-ST3	Spokane to Kellogg	SW Idaho St SD	Inline	06/15/12	18 U	18 U	19	15	40 B	18 U
ID-ST3	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/15/12	57 U	57 U	57 U	51	130	57 U
CB95	Glacier Bay	Private SD-1	CB	08/03/12	430	1,600	9,270 J	1,011	72,000 B	200 U
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	Inline	06/20/12	240	870	5,090	663	1,600	77 U
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	SedTrap	06/20/12	280	800	5,210	640	1,400 B	72
HP-ST4	Terminal 115	Highland Park Wy SW SD	SedTrap	06/15/12	61 U	120	536 J	76	3,000	67
HP-ST6	Terminal 115	Highland Park Wy SW SD	Inline	06/20/12	61 J	230	1,257 J	172	1,800	160
HP-ST6	Terminal 115	Highland Park Wy SW SD	SedTrap	06/20/12	65	350	1,640 J	146	1,200 B	150
MH248	Terminal 115	Highland Park Wy SW SD	Inline	07/19/12	12 J	35	188 J	28	68	19 J
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	140	730	3,149	343	5,000 B	950
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	130 U	1,100	4,610	500	9,200	990
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	38	160	892	122	650 B	1,400
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	58 J	270	1,394 J	187	2,800	58 J
1ST-ST3	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	120	530	2,864	373	840	59 U
1ST-ST7	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	690	2,700	15,200	1,915	6,900	260
7TH-ST1	Riverside Drive	7th Ave S SD	Inline	06/21/12	170	620	3,468	481	1,400	140
7TH-ST1	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	320	1,200	5,860	704	3,800 B	230
7TH-ST2	Riverside Drive	7th Ave S SD	SedTrap	06/14/12	58 U	58 U	58 U	53	73	58 U
7TH-ST3	Riverside Drive	7th Ave S SD	Inline	06/21/12	91	290	1,739 J	243	750	180
7TH-ST3	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	99	430	2,222	260	1,700 B	250
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	160	1,500	5,680 J		4,700	100 U
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	150	1,200	4,790 J		4,500	90 J
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12						

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Indeno (1,2,3-cd) pyrene (ug/kg DW)	Pyrene (ug/kg DW)	Total HPAH (ug/kg DW)	Total cPAH (ug/kg DW)	Bis (2-ethylhexyl) phthalate (ug/kg DW)	Butylbenzyl phthalate (ug/kg DW)
<b>SQS/LAET</b>					<b>600</b>	<b>2,600</b>	<b>12,000</b>	<b>1,000</b>	<b>1,300</b>	<b>63</b>
<b>CSL/2LAET</b>					<b>690</b>	<b>3,300</b>	<b>17,000</b>	<b>1,000</b>	<b>1,900</b>	<b>900</b>
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12						
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12						
RCB195	Riverside Drive	7th Ave S SD	RCB	01/25/12	56	940	3,366 J	228	990	42
96-ST1	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	19 U	29	158 J	27	110	19 U
96-ST1	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	120	450	2,458	327	670 B	60
96-ST2	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	61	310	1,607	222	210	19 U
96-ST2	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	140	690	3,543	463	850 B	89
96-ST3	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	19 U	21	97 J	20	46	19 U
96-ST3	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	24	63	361	48	150 B	18 J
HC-ST1	Restoration Areas	Hamm Creek	SedTrap	06/14/12	57 U	130	572 J	83	160	57 U

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Diethyl phthalate (ug/kg DW)	Dimethyl phthalate (ug/kg DW)	Di-n-butyl phthalate (ug/kg DW)	Di-n-octyl phthalate (ug/kg DW)
<b>SQS/LAET</b>					<b>200</b>	<b>71</b>	<b>1,400</b>	<b>6,200</b>
<b>CSL/2LAET</b>					<b>1,200</b>	<b>160</b>	<b>1,400</b>	<b>NA</b>
CB166	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	02/13/12	240 U	650	440	97 U
MH18	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	07/06/12	300 U	120 U	130	450
MH252	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/01/12	140 U	42 J	56 U	56 U
MH253	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	48 U	19 U	19 U	19 U
MH254	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/23/12	49 U	20 U	17 J	20 U
MH255	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/24/12	240 U	95 U	95 U	95 U
MH256	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	57 U	23 U	23 U	23 U
MH257	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	08/31/12	860 U	340 U	190 J	430
MH258	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/05/12	910 U	360 U	450	240 J
MH259	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	140 U	57 U	57 U	100
MH260	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	Inline	09/18/12	140 U	57 U	57 U	190
RCB100	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	84 U	34 U	110	110
RCB251	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/05/12	310 U	120 U	120 U	350
RCB282	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	180 U	70 U	140	70 U
RCB283	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	140 U	58 U	38 J	58 U
RCB284	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/01/12	150 U	59 U	59 U	59 U
RCB285	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/15/12	240 U	95 U	95 U	95 U
RCB286	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	08/23/12	95 U	38 U	38 U	240
RCBSTEVE4	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	RCB	07/06/12	500 U	200 U	440	3,200
TUL-CB2	EAA-1: Duwamish/Diagonal Way	Diagonal Ave S CSO/SD	CB	07/06/12	510 U	200 U	1,700	5,900
CB169	EAA-2: Trotsky Inlet	2nd Ave S SD	CB	09/10/12	320 U	180	340	1,700
MH241	EAA-2: Trotsky Inlet	2nd Ave S SD	Inline	07/25/12	260 U	100 U	140	21,000
RCB175	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	08/03/12	190 U	77 U	77	350
RCB200B	EAA-2: Trotsky Inlet	2nd Ave S SD	RCB	07/25/12	140 U	120	45 J	67
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	07/24/12				
SL4-T3A	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	07/24/12	140 U	58 U	58 U	58 U
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	SedTrap	06/14/12	190 U	68 J	90	1,100
SL4-T6	EAA-3: Slip 4	KCIA SD#3/PS44 EOF	Inline	06/14/12	150 U	59 U	59 U	270
SW1	EAA-5: Terminal 117	CS-1	Inline	04/02/12	410 U	300	160 U	340
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	240 U	96 U	220	82 J
KCIAJ-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	2,200 U	890 U	840 J	890 U
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	Inline	06/29/12	47 U	19 U	19 U	19 U
KCIA2-ST1	EAA-6: Boeing Isaacson/Central KCIA	KCIA SD#2/PS45 EOF	SedTrap	06/29/12	140 U	56 U	56 U	62
CB78	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	CB	08/31/12	600 U	120 J	1,300	2,800
NST1	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	240 U	94 U	80 J	2,100
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12				
NST2	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	47 U	88	19 U	19 U
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/25/12	140 U	57 U	57 U	46 J

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Diethyl phthalate (ug/kg DW)	Dimethyl phthalate (ug/kg DW)	Di-n-butyl phthalate (ug/kg DW)	Di-n-octyl phthalate (ug/kg DW)
<b>SQS/LAET</b>					<b>200</b>	<b>71</b>	<b>1,400</b>	<b>6,200</b>
<b>CSL/2LAET</b>					<b>1,200</b>	<b>160</b>	<b>1,400</b>	<b>NA</b>
NST3	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/25/12	230 U	93 U	93 U	160
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	SedTrap	07/24/12				
NST4	EAA-7: Norfolk CSO/SD	Norfolk CSO/PS 17 EOF/SD	Inline	07/24/12	43 J	32	19	19 U
MH205	Slip 3 to SBW	S Brighton St SD	Inline	07/25/12	45 U	18 U	18 U	10 J
MH211	Slip 3 to SBW	S River St SD	Inline	07/25/12	230 U	92 U	51 J	480
MH220	Slip 3 to SBW	S River St SD	Inline	07/25/12	160 U	64 U	83	64 U
MH222	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	47 U	19 U	180	19 U
MH226	Slip 3 to SBW	S Brighton St SD	Inline	08/03/12	140 U	59	54	54 U
KCIA1-ST1	Slip 6	KCIA SD#1	SedTrap	04/09/12	170 U	69 U	69 U	120
ID-ST1	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	98 U	39 U	39 U	120
ID-ST2	Spokane to Kellogg	SW Idaho St SD	Inline	06/20/12	210 U	83 U	83 U	83 U
ID-ST2	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/20/12	44 U	18 U	18 U	23
ID-ST3	Spokane to Kellogg	SW Idaho St SD	Inline	06/15/12	44 U	18 U	18 U	18 U
ID-ST3	Spokane to Kellogg	SW Idaho St SD	SedTrap	06/15/12	140 U	57 U	57 U	57 U
CB95	Glacier Bay	Private SD-1	CB	08/03/12	510 U	1,100	630	4,600
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	Inline	06/20/12	190 U	77 U	160	77 U
KN-ST1	Terminal 115	SW Kenny St SD/T115 CSO	SedTrap	06/20/12	46 U	18 U	22	65
HP-ST4	Terminal 115	Highland Park Wy SW SD	SedTrap	06/15/12	150 U	61 U	61 U	340
HP-ST6	Terminal 115	Highland Park Wy SW SD	Inline	06/20/12	250 U	66 J	100 U	86 J
HP-ST6	Terminal 115	Highland Park Wy SW SD	SedTrap	06/20/12	83 U	33 U	20 J	56
MH248	Terminal 115	Highland Park Wy SW SD	Inline	07/19/12	49 U	20 U	20 U	20 U
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	200 U	36,000	89	320
1ST-ST1	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	320 U	130 U	130 U	130 U
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	Inline	06/15/12	47 U	250	44	19 U
1ST-ST2	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/15/12	240 U	96 U	96 U	260
1ST-ST3	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	150 U	59 U	59 U	59 U
1ST-ST7	1st Avenue S SD	1st Ave S SD, west	SedTrap	06/14/12	280 U	110 U	110 U	1,000
7TH-ST1	Riverside Drive	7th Ave S SD	Inline	06/21/12	140 U	52 J	52 J	58 U
7TH-ST1	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	270 U	170	70 J	98 J
7TH-ST2	Riverside Drive	7th Ave S SD	SedTrap	06/14/12	150 U	58 U	58 U	58 U
7TH-ST3	Riverside Drive	7th Ave S SD	Inline	06/21/12	140 U	34 J	43 J	57 U
7TH-ST3	Riverside Drive	7th Ave S SD	SedTrap	06/21/12	69 J	30 J	46	64
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	250 U	100 U	100 U	340
ECPILOT	Riverside Drive	7th Ave S SD	Inline	03/14/12	250 U	100 U	100 U	100 U
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML1	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12				

**Appendix E**  
**Table 2. SPU Source Tracing Sample Results (January through December 2012)**

Sta_ID	Source Control Area Name	Outfall	Type	Date	Diethyl phthalate (ug/kg DW)	Dimethyl phthalate (ug/kg DW)	Di-n-butyl phthalate (ug/kg DW)	Di-n-octyl phthalate (ug/kg DW)
<b>SQS/LAET</b>					<b>200</b>	<b>71</b>	<b>1,400</b>	<b>6,200</b>
<b>CSL/2LAET</b>					<b>1,200</b>	<b>160</b>	<b>1,400</b>	<b>NA</b>
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML2	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML3	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML4	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12				
ML5	Riverside Drive	7th Ave S SD	Soil	09/24/12				
RCB195	Riverside Drive	7th Ave S SD	RCB	01/25/12	47 U	19 U	19	19 U
96-ST1	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	46 U	19 U	19 U	19 U
96-ST1	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	47 U	19 U	12 J	26
96-ST2	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	34 J	<b>100</b>	19 U	19 U
96-ST2	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	76	41	20 U	26
96-ST3	Sea King Industrial Park	S 96th St SD	Inline	06/21/12	48 U	19 U	20	19 U
96-ST3	Sea King Industrial Park	S 96th St SD	SedTrap	06/21/12	47 U	19 U	19 U	19 U
HC-ST1	Restoration Areas	Hamm Creek	SedTrap	06/14/12	140 U	57 U	57 U	57 U

## **Appendix F**

### **Ecology Lower Duwamish Waterway Source Control Summary Table**

# Lower Duwamish Waterway Source Control Summary

## Introduction

This source control summary table lists media (soil and groundwater, stormwater, and bank soil) that are potential sources of contamination to LDW sediment. Progress can be measured by comparing the number of sources that pose a threat to LDW sediments with the number of sources that are currently being addressed by EPA and Ecology.

## Soil & Groundwater Cleanup for Sediment Protection

	<b>Number</b>
Contaminated sites in the LDW basin <sup>1</sup>	167
Contaminated sites in the LDW basin that may pose a threat to LDW sediment recontamination (as assessed in Ecology's SCAPs, Data Gaps Reports, and Status Reports)	56
Contaminated sites in the LDW basin that may pose a threat to LDW sediment recontamination which are under an Ecology or EPA Order (MTCA, CERCLA, RCRA, TSCA)	22
Contaminated sites in the LDW basin with interim actions planned (as identified in Status Reports) <sup>2</sup>	24
Contaminated sites in the LDW basin where an EPA or Ecology site manager has issued a closure letter indicating that sources are controlled	0
Contaminated sites where EPA or Ecology has determined that cleanup is complete	0

## Stormwater Cleanup for Sediment Protection

	<b>Number</b>
Public and private stormwater outfalls <sup>3</sup>	229
Public and private stormwater outfalls where sediment samples have been collected within 100 ft of outfall <sup>4</sup>	153
Public and private stormwater outfalls where sediment samples have been collected with contaminant concentrations above the CSL or LDW FS CUL within 100 feet of outfall	99
Private stormwater outfalls where sediment COCs in stormwater are being monitored and managed <sup>5</sup> under an Ecology Order, an EPA Order, or an NPDES permit	4

## Bank Soil<sup>6</sup> Cleanup for Sediment Protection

	<b>Number</b>
Feet of shoreline in LDW	79,580
Feet of armored banks	53,400
Feet of exposed shoreline in LDW with the potential for soil erosion <sup>7</sup>	19,300
Feet of shoreline with bank soils characterized under an Ecology or EPA Order and/or Ecology study <sup>8</sup>	16,608
Feet of shoreline with contaminated <sup>9</sup> bank soils identified under an Ecology or EPA order and/or Ecology study	13,622
Feet of shoreline with bank soil cleanup in process <sup>10</sup>	7,454
Feet of shoreline with erosion of contaminated bank soil controlled <sup>11</sup>	2,098

## Notes:

- <sup>1</sup> Contaminated sites are those that are included on Ecology's CSCSL or those identified as contaminated by EPA.
- <sup>2</sup> Interim actions may include preliminary cleanup actions conducted under state MTCA regulations, federal CERCLA or RCRA regulations, or independently by responsible parties.
- <sup>3</sup> This does not include CSOs or EOFs. CSOs are being addressed under a separate consent decree; EOFs only operate under emergency conditions (e.g., pump station failures) and are not considered to be potentially significant contributors to sediment contamination.
- <sup>4</sup> Sediment samples have not been collected at all outfall locations because of access problems or sampling difficulties.
- <sup>5</sup> Management may include monitoring of stormwater, source removal, or stormwater treatment.
- <sup>6</sup> Bank soil is soil or sediment up to the mean higher high water level (generally 0 – 12 feet above mean sea level) on the banks of the LDW.
- <sup>7</sup> Does not include 5,480 feet of vertical bulkhead and 1,400 feet of dock face.
- <sup>8</sup> Additional sampling and testing of bank soil will be done as part of LDW cleanup under federal Superfund or individual upland site cleanups under Ecology orders.
- <sup>9</sup> Contamination is defined as values that exceed AET sediment quality criteria.
- <sup>10</sup> Cleanup in process" means that there is a cleanup plan in place which includes bank cleanup or dredging.
- <sup>11</sup> Control of erosion means contaminated bank soil areas have been completely excavated and restored or partially excavated and contained and that upland sources of contamination that may recontaminate bank soils have been removed or contained.

## Acronyms and Definitions

CERCLA	Federal Comprehensive Environmental Response, Compensation, and Liability Act
COC	chemical of concern
CSCSL	State Confirmed or Suspected Contaminated Sites List
CSL	State Sediment Cleanup Screening Levels
CSO	combined sewer overflow
CUL	Cleanup Levels
Ecology	WA State Department of Ecology
EOF	emergency overflow
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
LDW	Lower Duwamish Waterway
MTCA	State Model Toxics Control Act
RCRA	Federal Resource Conservation and Recovery Act
Status Report	LDW Source Control Status Report (prepared by Ecology)
SCAPs	LDW Source Control Action Plans (prepared Ecology)
TSCA	Federal Toxics Substances Control Act