Lower Duwamish Waterway Source Control Status Report October 2010 through December 2011

July 2012

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Lower Duwamish Waterway Source Control Status Report October 2010 through June 2011

Produced by

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

and

Science Applications International Corporation
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

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Table of Contents

Figures

Tables

Appendices

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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
CNE	Conditional No Exposure
COC	chemical of concern
CSL	Cleanup Screening Level
CSO	combined sewer overflow
DCE	cis-1,2-dichloroethene
DDC	density-driven convection
DDT	dichloro-diphenyl-trichloroethane
DMR	Discharge Monitoring Report
DSOA	Duwamish Sediment Other Area
DW	dry weight
EAA	Early Action Area
Ecology	Washington State Department of Ecology
EDR	engineering design report
EE/CA	Engineering Evaluation/Cost Analysis
EMF	Electronics Manufacturing Facility
EOF	emergency overflow
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
GIS	Geographic Information System
GSA	General Services Administration
GTSP	Georgetown Steam Plant
HPAH	high molecular weight PAH
HWTR	Hazardous Waste and Toxics Reduction
ISGP	Industrial Stormwater General Permit
KCIA	King County International Airport
KCIW	King County Industrial Waste
LAET	Lowest Apparent Effects Threshold
LDW	Lower Duwamish Waterway
LDWG	Lower Duwamish Waterway Group
LPAH	low molecular weight PAH
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MOF	Museum of Flight
MTCA	Model Toxics Control Act
NA	not applicable or not analyzed
NBF	North Boeing Field
ND	not detected
ng/kg	nanograms per kilogram

List of Acronyms (Continued)

NPDES	National Pollutant Discharge Elimination System
OC	organic carbon
PAH	polycyclic aromatic hydrocarbon
PBDE	polybrominated diphenyl ether
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PEL	Propulsion Engineering Laboratory
PLP	potentially liable party
POS	Port of Seattle
ppm	parts per million
QAPP	Quality Assurance Program Plan
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
SCL	Seattle City Light
SCWG	Source Control Work Group
SD	storm drain
SHA	Site Hazard Assessment
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
TBD	to be determined
TCE	trichloroethylene
TCP	Toxics Cleanup Program
TCRA	Time Critical Removal Action
TEQ	toxic equivalency quotient
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TSCA	Toxic Substances Control Act
TSS	total suspended solids
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VCP	Voluntary Cleanup Program
VOC	volatile organic compound
WSDOT	Washington State Department of Transportation

Executive Summary

This report summarizes source control activities conducted by the Lower Duwamish Waterway (LDW) Source Control Work Group between October 1, 2010 and December 31, 2011. Previous status reports ((Ecology 2007b, 2008b, 2008e, 2009j, 2011l) 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 September 2010. 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 October 2010 and December 2011 at each of the identified source control areas, including the seven Early Action Areas (EAAs).

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) 1.0-1.3 West (Kellogg Island to Lafarge Cement) and RM 1.6-2.1 West (Terminal 115). These reports, known as Data Gaps Reports, were used to prepare SCAPs for these source control areas. Four new SCAPs were published during the current reporting period (October 2010 through December 2011): RM 1.0-1.2 East (King County Lease Parcels), RM 4.3-4.9 East (Boeing Developmental Center), RM 1.0-1.3 West (Kellogg Island to Lafarge Cement), and RM 1.6-2.1 West (Terminal 115).

A total of 556 source control action items have been identified based on the 19 SCAPs published as of December 31, 2011; 173 of these action items have been completed, and 7 are not needed or have been combined with another action item (a total of 32 percent). Of the remaining 376 action items, 107 (28 percent of the remaining action items) are considered high priority (to be completed prior to sediment cleanup), 184 (49 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 72 action items during the current reporting period as a result of the completion of the four SCAPs listed above. A total of 22 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 complete, as identified in or subsequent to SCAPs completed through December 2011, 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 253 inspections at 212 facilities between October 2010 and December 2011, and Ecology conducted 141 inspections at 105 facilities within the LDW basin during this period. In addition, King County inspected 31 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. In addition, SPU collected 29 in-line and 57 catch basin samples between October 2010 and December 2011 under the interagency agreement. The catch basin and in-line sampling has helped to identify a number of pollutant sources to the LDW.

Ecology conducted several source tracing projects during this reporting period, which are described in Section 3.2. These projects including the following:

- An Accelerated Source Tracing Study, which measured contaminant concentrations in stormwater at multiple locations in two LDW sub-basins to assess the effectiveness of an “up-the-pipe” source tracing approach (SAIC and NewFields 2011a);
- A Lateral Loading Study to estimate lateral contaminant loadings from four significant stormwater outfalls within the LDW study area (SAIC and NewFields 2011c);
- A PCB Building Material Survey, which measured contaminant concentrations in paint and building caulk samples to assess the prevalence of PCB-containing building materials in the LDW drainage basin (SAIC 2011f);
- An Outfall Sediment Study to characterize the quality of LDW surface sediment near stormwater outfalls and CSOs in locations where data had not previously been collected (SAIC 2011d); and
- A Bank Sampling Study to assess concentrations of contaminants in bank soils at nine locations along the LDW shoreline (report in preparation as of December 2011).

Site characterization or cleanup is in progress at several facilities that are known or suspected threats to LDW sediments. Terminal 117, Rhone-Poulenc, and Boeing Plant 2 (which includes part of Jorgensen Forge) are being managed by the U.S. Environmental Protection Agency (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/8th 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 has 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 four full-time site managers dedicated to contaminated upland sites in the LDW. Adding one or more additional site managers would somewhat reduce the time required to achieve source control at the upland sites.

The long-term schedule projection for implementing source control assumes that up to 20 upland contaminated cleanup sites will be identified for which Ecology will need to assign one of its full-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 October 2023.

Source Control Activities

Major source control actions completed during October 2010 through December 2011, 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)

- In August 2011, the Port of Seattle submitted a Source Control Strategy Plan for the eastern parcel of Terminal 108 (T108E) and the western portion of Terminal 106 (T106W), located just to the north. These areas are currently leased to ConGlobal Industries for shipping container and truck chassis storage and repair. The Strategy Plan identified stormwater discharge, groundwater transport and discharge, and soil and bank erosion as potentially complete pathways for transport of contaminants to the LDW. Data gaps were identified, including the need for additional information about contaminant concentrations in stormwater discharges, drainage pathway for the wash pad at T106W, and quality of groundwater discharged from T106W and T108E.
- In 2010, stormwater Level 3 corrective actions were triggered at ConGlobal Industries, requiring the installation of stormwater treatment by September 30, 2010. Ecology has identified numerous outstanding permit and stormwater quality compliance issues;

follow-up is needed. This facility had been referred to EPA but reverted to Ecology oversight due to citizen lawsuit involvement.

- In January 2011, Ecology completed a Summary of Existing Information report for the Washington State Liquor Control Board (WSLCB) site. Based on the information presented in this report, a reconnaissance plan and an upland investigation were recommended to determine if the WSLCB is a potential source of sediment recontamination.
- In July 2011, Ecology performed a reconnaissance-level investigation to evaluate and document the WSLCB site as a potential source of LDW sediment contamination. Potential contaminant sources include imported dredge or fill material, past and current housekeeping and material management practices, a fuel oil UST, and past uses on the adjacent T-108 property. The findings presented in a Data Report for the WSLCB suggest that soil and groundwater pose a limited risk to LDW sediments; however, elevated concentrations of PCBs in three catch basins pose a potential risk for sediment recontamination from this site.
- In a letter dated May 31, 2011, Ecology responded to a request for an opinion on the independent cleanup of the GSA Federal Center South facility. In that letter, Ecology stated that further remedial action is necessary to clean up contamination at this site.
- On March 14, 2011, KCIW issued a wastewater discharge authorization to Rainier Commons. This authorization permits Rainier Commons to discharge limited amounts of industrial wastewater (stormwater runoff) into King County's sewer system.
- In October 2010, EPA sampled dust and interior surfaces at Rainier Commons. Dust sample results in office spaces and residences ranged from 1.4 to 15.6 ppm. Good housekeeping practices are recommended to prevent children's PCB exposure. Based on these results, EPA does not believe that PCBs in dust pose a significant risk to current tenants of Rainier Commons.
- Rainier Commons completed a paint removal demonstration pilot project for the Building 6/22 6th floor stairwell area. Results of this testing indicated that PCB-bearing paint can be successfully removed from the brick and concrete substrates, with post-removal sampling results of the substrate material indicating levels of residual PCBs that do not warrant any subsequent remedial consideration.
- EPA is drafting a TSCA/PCB risk-based disposal approval for the Building 6 interior stairwell. This action will help provide data documenting the efficacy of the proposed paint removal from Rainier Commons. Characterization of remaining PCBs in the substrate will be used to evaluate any coating/encapsulation, monitoring, and maintenance requirements that may be necessary. EPA expects that Rainier Commons will begin exterior paint removal during the 2012 construction season, with completion during 2013.

EAA-2 (Trotsky Inlet)

- Ecology and the owner/operator of the Industrial Container Services site are negotiating the activities and requirements for an RI/FS Work Plan. Activities include sampling of surface sediments, deeper sediments, seeps, groundwater, the "lagoon" area, and stormwater. Field work for the remedial investigation is anticipated to begin in spring 2012.

- On May 6, 2011, Ecology entered into an Agreed Order (DE-8258) with 7100 1st Avenue S, Seattle, LLC (the owner of the Douglas Management property). 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.
- The PLP for the Douglas Management site prepared a draft Data Gaps Report in July 2011. Ecology's comments were incorporated into the draft RI/FS Work Plan, submitted for Ecology review on October 17, 2011.

EAA-3 (Slip 4)

- Crowley Marine Services (8th Avenue Terminals LLC) submitted a draft final RI/FS Work Plan to Ecology in December 2010. Ecology and Crowley Marine Services are negotiating the content of the RI. Ecology expects to receive a final draft RI/FS Work Plan in March 2012.
- While conducting work to address compliance issues, 8th Avenue Terminals determined that it may be necessary to install a new outfall line into the head of Slip 4. A collapsed line appears to exist in this area, which formerly drained the northern portion of the property. 8th Avenue Terminals is in discussions with the City of Seattle to determine if a new line can be installed, and to design it to fit within the Slip 4 sediment removal action.
- On November 19, 2010, Ecology recommended that an environmental investigation be conducted at the northern area of King County International Airport (KCIA) to assess whether this area represents a source for the groundwater trichloroethylene (TCE) concentrations found in groundwater on the GTSP property. KCIA performed a soil and groundwater investigation in March 2011. TCE and PCE were detected in all three monitoring wells; TCE concentrations exceeded the MTCA Method B cleanup level in well KCIA-MW-3 during the March and June 2011 sampling events. Arsenic concentrations exceeded the MTCA Method B cleanup level in all three wells during June 2011.
- In June 2011, KCIA provided Ecology with a *2011 Source Control Report*. The report provided updates and results of source control and source tracing activities that occurred at KCIA since June 2006. A revision was provided to Ecology in October 2011.
- In August 2011, KCIA performed cleaning and video inspection at the Airport's north drain line. Storm drains on the east side of the airport property appeared to be in good condition. Groundwater infiltration was noted in storm drains on the west side of the airport property, east of the GTSP. Blocked or collapsed storm drains were found north of the GTSP.
- Source control activities conducted at the North Boeing Field (NBF)/GTSP site since publication of the August 2011 Source Control Status Report are listed below. Additional detail is provided in Section 6.

- Short-Term Stormwater Treatment at NBF (Boeing; September 2010)
- North Lateral Storm Drain Video Inspection Summary (Boeing; October 2010)
- PCB Paint Abatement Activities (Boeing; October 2010)
- PCB Soil Excavation and Storm Drain Replacement Activities (Boeing; October-November 2010)
- TSCA Material Removal (Boeing; November 2010)
- NBF Stormwater Sampling (Ecology; November 2010-April 2011)
- Storm Drain System Video Inspection Summary (Boeing; January 2011)
- Assessment of Infiltration and Inflow into the NBF Storm Drain System (Ecology; February 2011)
- Storm Drain System Video Inspection Summary (Boeing; February 2011)
- LDW Slip 4 Interim Source Control Status Control Status Report (Ecology; March 2011)
- PEL Soil and Groundwater Investigation (Boeing; March 2011)
- GTSP 2010 Site Characterization (City of Seattle; April 2011)
- GTSP Interim Action Work Plans (Boeing and City of Seattle; June 2011)
- Building 3-333 Interim Action Work Plan (Boeing; June 2011)
- Bed Load Sampling and Analysis (Boeing; June 2011)
- Willow Street Substation Soil Removal (City of Seattle; July 2011)
- NBF Paint Abatement Activities (Boeing; August-November 2011)
- GTSP Fence Line Interim Action (Boeing and City of Seattle; August –December 2011)
- NBF Building 3-333 Interim Action (Boeing; October 2011
- Stormwater Sampling at NBF (Ecology; October –December 2011)
- NBF Long-Term Stormwater Treatment (Boeing; October 2011)
- NBF Concrete Join Material Removal (Boeing; November 2011)

• Additional activities in progress as of December 2011 include the following:

  - Stormwater monitoring at NBF will continue into spring 2012. Monitoring stations will be located in the northern portion of the site and at upstream and downstream locations on the NBF Flight Line.
  - The GTSP interim action area will be winterized in early 2012 to minimize erosion. The interim action will be completed in spring 2012 when seeding and landscaping activities occur.
  - Boeing will continue to sample and test paint and other building materials. PCB paint abatement activities will resume during the 2012 dry season.
  - Ecology will be issuing the draft RI/FS Work Plan for the NBF/GTSP Site in spring 2012. The work plan will be finalized and field work will begin in mid- to late 2012.

EAA-4 (Boeing Plant 2/Jorgensen Forge)

- In August 2011, EPA issued its Final Decision and Response to Comments for Boeing Plant 2 Sediments, containing the final remedy for the Duwamish Sediment Other Area and Southwest Bank and other Plant 2 sediment areas.
- In October 2011, Ecology entered into negotiations with Jorgensen Forge Corporation for a new Agreed Order. The new order will provide for work not included in the previous Agreed Order, including stormwater source control and other activities.
- In August 2011, Ecology's Water Quality Program issued Administrative Order No. 8682 to Jorgensen Forge, requiring treatment to address benchmark exceedances. Treatment is scheduled to be installed by the end of 2012.
- EPA issued an Action Memorandum for the Jorgensen Forge Outfall Site on September 30, 2010, to request and document approval of a selected Time-Critical Removal Action for the Jorgensen Forge Outfall Site. The removal action was conducted by Boeing and the Jorgensen Forge Corporation and consisted of cleaning and closure of existing 15- and 24-inch public lateral storm drain pipes. This removal action is documented in the *Source Control Action Completion Report* submitted to EPA in May 2011.
- A *Revised Final Engineering Evaluation/Cost Analysis* was submitted by Jorgensen Forge to EPA in October 2011 for a removal action of contaminated sediments and associated bank soils within the removal action boundary.
- In December 2011, EPA sent Jorgensen Forge a draft Administrative Settlement Agreement, Order on Consent, and Statement of Work for the Jorgensen Forge Early Action Area Non-Time Critical Removal Action Implementation (USEPA 2011h, USEPA 2011d).

EAA-5 (Terminal 117)

- On February 15, 2011, the Port of Seattle conducted targeted bulk sampling of the exterior of buildings and asphalt sealant at Terminal 117. The site was assessed for suspected PCB-containing building materials and asphalt sealants. The sampling included the North Building, Office/Carport, South Building, and asphalt sealants on the pavement and Ecology blocks. PCBs were detected in 11 of the 20 samples, with concentrations ranging from 0.95 to 34.5 mg/kg.
- 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. The cleanup includes the marine sediments adjacent to Terminal 117, the former industrial facility on terminal property, and 10 acres of soil in nearby streets and residential area.
- In June 2011, the Port of Seattle submitted a *Pre-Design Data Needs Work Plan* for Terminal 117 to EPA. Field work was scheduled to begin in July 2011 (Port of Seattle 2011).

EAA-6 (Boeing Isaacson/Central KCIA)

- In September 2011, Ecology approved an RI/FS Work Plan for the Boeing Isaacson/Thompson site. The Work Plan summarizes previous environmental investigations and voluntary remedial actions, describes current environmental site conditions and data gaps, and lists proposed groundwater, soil, storm drain, and vapor investigations. The RI work started at the site in 2011.
- In 2010, KCIA started design/construction of improvements to Taxiway Alpha, which is located primarily within this source control area. The project included construction of a pump station and water quality vault that will provide basic water quality treatment for this portion of the airport. The project also included the repair and replacement of drainage lines. It is expected that these repairs will significantly reduce the infiltration of groundwater into the stormwater system. Phase II of the project is scheduled to occur in summer 2012, starting with the construction of a water quality vault in April 2012.
- In-line sediment traps were installed at the Airport's discharge point to the KCIA SD#2/PS45 EOF outfall in 2008. The sediment traps were sampled in March 2009 and October 2009, and were resampled in December 2010. Zinc (559 mg/kg), phenanthrene (3.2 mg/kg DW), various HPAH compounds (total HPAH at 32.7 mg/kg DW), and BEHP (3.7 mg/kg DW) were detected at concentrations above screening levels.

EAA-7 (Norfolk CSO/SD)

- In 2011 Boeing conducted their annual sampling in the south storm drain system at the Boeing Developmental Center. The results of the 2011 Annual Sampling Report will be available in 2012.
- The next round of storm drain system sampling at the Boeing Developmental Center is scheduled for fall 2012. The Vortechnics 9000 unit servicing is scheduled to be performed during late summer or fall of 2012.

RM 0.9-1.0 East (Slip 1)

- Ecology prepared a *Summary of Existing Information Report* for the former Snopac Products site, located at the head of Slip 1, in January 2011. The purpose of this report was to evaluate and summarize additional information, beyond that provided in the 2008 Data Gaps Report for the Slip 1 source control area, about current and historical land uses at this property and the potential for contaminant releases to soil and/or groundwater.

RM 1.0-1.2 East (King County Lease Parcels)

- Ecology entered into negotiations for a consent decree with the General Electric Company on November 2, 2011. The consent decree will provide for cleanup and post-cleanup monitoring of groundwater, soil, and indoor air at the General Electric Aviation site, and will help prevent future potential migration of contaminants to the LDW.

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

- On April 9, 2011, a spill of approximately 1 ton of gypsum into the LDW occurred at CertainTeed Gypsum property. The spill occurred during a ship unload of gypsum rock when one of the ship's boom skirting panels broke free over the river. Actions were identified to prevent this type of incident from occurring in the future.
- RI/FS activities, in compliance with Ecology orders, are continuing at Burlington Environmental (PSC-Georgetown), Art Brass Plating, Capital Industries, and Blaser Die Casting to investigate and remediate chlorinated solvent contamination in groundwater in this area.

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

- Ecology and the Duwamish Marine Center property owner entered into Agreed Order No. DE-8072 on September 2, 2011. 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 September 2011, Scougal Rubber Corporation submitted a technical memorandum to Ecology that summarizes the remedial actions conducted at the property from January 2009 through August 2011. Remedial action at the site focused on reduction of chlorinated solvent concentrations in soil and groundwater.

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

- Ecology is in the process of modifying the NPDES permit and treatment requirements for Seattle Iron & Metals. The new permit will consider runoff from the main yard and will require treatment for roof and employee parking area runoff.
- In June 2011, Seattle Iron & Metals submitted a revised draft *Dredging and Dock Replacement Sampling and Analysis Plan* to EPA and the U.S. Army Corps of Engineers. A memorandum clarifying the sequencing of pier demolition/reconstruction relative to dredging was also submitted.
- In early 2011, Ecology prepared a report summarizing existing information about the Puget Sound Truck Lines property. Additional investigation was recommended to assess potential contamination associated with past industrial uses, past and current housekeeping and material management practices, and underground and aboveground storage tanks.

RM 3.9-4.3 East (Slip 6)

- PACCAR and Merrill Creek Holdings completed a draft Remedial Investigation Report for the 8801 Site on September 30, 2010. Ecology determined that there were data gaps that needed to be filled before the RI could be finalized.
- In July 2011, PACCAR submitted a final Data Gaps Work Plan. PACCAR's contractor completed the investigations described in the work plan, and Ecology expects to receive a final RI report in early 2012.

- On May 20, 2011, Insurance Auto Auctions (IAA), the current tenant at the 8801 Site, submitted a *Stormwater System Investigation Report* to Ecology. The report documents the results of storm drain solids sampling conducted during October 2009, May 2010, August 2010, and March 2011.
- AMEC Geomatrix prepared a shoreline and sediment investigation work plan for Container Properties, LLC (property owner of the former Rhone-Poulenc site) in June 2011. The work plan includes collection of soil and/or groundwater samples along the LDW shoreline, between the barrier wall and top of the bank. In addition, LDW surface and subsurface sediment samples will be collected offshore of the site.

RM 4.3-4.9 East (Boeing Developmental Center)

- The storm drain line to Outfall 2088 at the Boeing Developmental Center was sampled for Ecology's Stormwater Lateral Loading study. This outfall receives runoff from a central portion of the BDC with a 13-acre drainage basin consisting of buildings, parking lots, and a green belt. Low levels of PCB Aroclor 1254 were detected in whole water and filtered solids samples from a catch basin just upstream of the outfall.

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

- Ecology conducted a stormwater compliance inspection at General Recycling of Washington in April 2011. Copper and zinc concentrations in stormwater discharges exceeded the ISGP benchmarks during the fourth quarter of 2010 and the first quarter of 2011. Representatives of General Recycling expressed interest in installing a chemical treatment system that would reduce metals concentrations in the facility's discharges. Ecology requested that General Recycling submit an engineering report and request approval for the chemical treatment system.
- In June 2011, the Port of Seattle's contractor's completed a draft *Environmental Conditions Report* for the Terminal 107 property. The purpose of the report was to perform an independent review and evaluation of current and historical spills and releases, land development activities, and operations on and immediately adjacent to Terminal 107. The report also evaluated the pathways that could allow for the migration of potential and confirmed releases to the LDW.

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

- Ecology reviewed draft NPDES Permit WA-000223-2, which covers three outfall discharges from the Lafarge facility to the LDW. The frequency and volume of stormwater discharge was expected to increase in 2010, when the cement manufacturing process (which recycled much of the facility's stormwater) was discontinued. The permit was issued on December 30, 2010.
- Subsequent to issuance of the new permit, Lafarge began transloading various materials such as lignin and dredged materials from sites around the LDW. Lafarge modified its SWPPP to address these new activities.

- On November 18, 2010, the Seattle Department of Planning and Development approved a substantial development permit for Lafarge Cement. The permit allowed Lafarge to install 320 linear feet of rooftop piping to connect old and new silos.

RM 1.3-1.6 West (Glacier Bay)

- Duwamish Shipyard submitted a *Phase 1 Remedial Investigation Data Memo* to Ecology in September 2011. This document described the investigations completed as part of the Phase 1 RI for upland and aquatic media on and adjacent to the Duwamish Shipyard property, including upland sampling and testing performed in 2009 and sediment testing performed in spring 2011.
- In October and November 2011, Ecology met with Duwamish Shipyard representatives to discuss remaining data gaps. Duwamish Shipyard agreed to prepare a supplemental RI Work Plan for submittal to Ecology in spring 2012.
- In September 2011, Glacier Northwest submitted a final RI/FS Work Plan. Ecology did not approve this Work Plan. In November and December 2011, Glacier Northwest performed independent soil and groundwater sampling. Ecology had not approved work plans for this sampling event.
- In November and December 2011, Ecology and Glacier/Reichhold participated in several meetings to discuss conflicts within the RI/FS Work Plan. Following these meetings, Glacier/Reichhold submitted a sampling and analysis plan for a Revised RI/FS Work Plan to Ecology on December 21, 2011. The Revised RI/FS Work Plan was an update to the September 2011 submittal.
- Ecology and the Port of Seattle entered into an Agreed Order on March 2, 2011, for the North Terminal 115 site. Under Agreed Order No. DE-8099, the Port of Seattle will conduct an RI/FS and prepare a draft CAP at the site.
- In April 2011, the Port of Seattle submitted a draft RI/FS Work Plan for North Terminal 115 to Ecology. Ecology expects to receive a revised RI/FS Work Plan from the Port of Seattle in early 2012.

RM 1.6-2.1 West (Terminal 115)

- In November 2010, the Port of Seattle's contractor completed a *Post-dredge Subsurface Sediment Characterization and Sand Cover Monitoring Report*. The monitoring report documents the methods and results of bathymetric surveys, sediment sampling, and sediment analysis conducted for the Terminal 115 Berth 1 maintenance dredging and pier replacement project.
- In April 2011, the Port of Seattle's contractor completed an *Environmental Conditions Report* for Terminal 115. The purpose of the report was to perform an independent review and evaluation of current and historical spills and releases, land development activities, and operations on and immediately adjacent to Terminal 115.
- The Port of Seattle prepared a *Year 1 Sand Cover Monitoring and Recontamination Study Report* in November 2011 (SEE & TEC 2011), as part of the Berth 1 maintenance dredging and pier replacement project. Studies included a bathymetric survey to assess

the stability of the placed sand cover over the T-115 maintenance dredging completed in February 2010, chemical analysis of sediment collected from the area of the sand cover, and chemical monitoring of the adjacent upland stormwater catch basins to address the potential for recontamination of the sand cover due to stormwater discharges.

RM 2.2-3.4 West (Riverside Drive)

- Ecology, EPA, King County, and the City of Seattle conducted source control investigation and sampling in the vicinity of Independent Metals Plants 1 and 2 to determine where runoff from these facilities is discharged. SPU and Ecology inspected Plant 1 and identified one or more PCB sources to the city storm drain system (7th Avenue S SD). The PCB levels have declined since Independent Metals made 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.
- On January 24, 2011, Ecology issued an opinion letter on the proposed independent cleanup of the 640 S Riverside VCP site. Ecology accepted the proposed interim action approach, with a few modifications, and determined that the interim action proposed for this site would accomplish a significant amount of cleanup but would not be a final cleanup action. Ecology determined that, upon completion of the proposed cleanup, further remedial action will likely be necessary to remediate contamination at the site.

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
Early Action Area 1 (RM 0.1-0.9 East; Duwamish/Diagonal Way)					
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
Early Action Area 2 (RM 2.1-2.2 West; Trotsky Inlet)					
2nd Avenue S SD	Continue source tracing to identify sources of phthalates and other COCs.	SCAP	SPU	In Progress	TBD
Early Action Area 3 (RM 2.8 East; Slip 4)					
GTSP	Remove additional contaminated soils identified as part of site characterization.	Follow-On	SCL	In Progress	Jun-12
NBF-GTSP	Conduct RI/FS and implement interim actions (as needed).	New	Ecology, Boeing, City of Seattle, King County	In Progress	2013
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	2012
	Determine impact of remaining joint sealant material on PCB concentrations in stormwater.	Follow-On	Ecology	Ongoing	2012
North Boeing Field / KCIA / I-5 Storm Drains	Reinstall sediment traps and continue monitoring as needed.	SCAP	SPU, Boeing	Ongoing	2014
Early Action Area 4 (RM 2.8-3.7 East; Boeing Plant 2 to Jorgensen Forge)					
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	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.	SCAP	Jorgensen, Ecology	In Progress	2012
	Continue to address PCB and metal contamination in sediments of the LDW and Shoreline Bank Area through EPA CERCLA Order No. 10-2003-0001.	SCAP	EPA, Jorgensen	In Progress	2013
	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
	Negotiate an Amended Administrative Order of Consent for preparation of an EE/CA for cleanup of affected sediments along a portion of the LDW adjacent to this property.	New	EPA, Jorgensen	In Progress	TBD
	Review current groundwater monitoring data to ensure that groundwater is not a pathway for contaminants to the LDW.	SCAP	Ecology, Jorgensen	Planned	TBD
	Conduct groundwater sampling in the center of the property (previously occupied by Isaacson Iron Works) to determine if contaminants are present above screening levels.	SCAP	Ecology, Jorgensen	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
Early Action Area 5 (RM 3.4-3.8 West; Terminal 117)					
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
Early Action Area 6 (RM 3.7-3.9 East; Boeing Isaacson/Central KCIA)					
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
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.	SCAP	SPU	In Progress	TBD
	Follow up on discharges observed from the KCIA SD#2/PS45 EOF in 2007 and 2008, to identify sources and/or characteristics of discharges.	SCAP	Ecology, SPU, King County	In Progress	2012
	If COCs are present in the storm drain line, conduct source tracing to identify potential contaminant sources at KCIA.	SCAP	King County, SPU	Planned	2012
Early Action Area 7 (RM 4.9 East; Norfolk CSO/SD)					
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
RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)					
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, Ash Grove Cement	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	Apr-12
	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
RM 0.9-1.0 East (Slip 1)					
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	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
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
RM 1.0-1.2 East (KC Lease Parcels)					
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	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	SCAP	Ecology	Planned	TBD
	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
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
RM 1.2-1.7 East (Saint Gobain to Glacier Northwest)					
Certainteed Gypsum	Review response to EPA 104(e) Request for Information letter sent to Certainteed 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	Dec-12

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
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	SCAP	Property Owner/ Operator	Planned	Dec-12
RM 1.7-2.0 East (Slip 2 to Slip 3)					
Duwamish Marine Center	Negotiate an Agreed Order to conduct additional investigation/cleanup activities	Follow-On	Ecology	In Progress	TBD
	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	TBD
	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	TBD
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)					
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
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
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)					
Crowley Marine Services	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.	SCAP	Ecology	In Progress	TBD
	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	Crowley Marine Services	Planned	TBD
	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	TBD
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

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
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
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
RM 3.9-4.3 East (Slip 6)					
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, PACCAR, Merrill Creek	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, PACCAR, Merrill Creek	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, PACCAR	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
	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, IAAI, Merrill Creek	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	EPA, Container Properties, Rhodia, Bayer	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	EPA, Container Properties, Rhodia, Bayer	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, Container Properties, Rhodia, Bayer	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, IAAI	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, MOF	Planned	TBD
	Identify the source and extent of groundwater contamination on the former BDC property, and conduct remedial action, as necessary.	SCAP	Ecology, MOF	Planned	TBD
RM 4.3-4.9 East (Boeing Developmental Center)					
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
RM 1.3-1.6 West (Glacier Bay)					
Duwamish Shipyard	Conduct site investigations as specified in the Agreed Order Statement of Work	SCAP	Duwamish Shipyard	Planned	2012
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions	SCAP	Ecology	Planned	2012
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	2012
	Upon approval of work plans by Ecology, conduct site investigations as specified	SCAP	Property owner/ operator	Planned	May-12
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions	SCAP	Ecology	Planned	Nov-12

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
RM 1.6-2.1 West (Terminal 115)					
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
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

Acronyms:

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

1.0 Introduction

This report summarizes the status of source control efforts in the Lower Duwamish Waterway (LDW) from October 1, 2010, through December 31, 2011. 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 strategy and Source Control Work Group,
- 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), and August 2011 (Ecology 2011l). 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), 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 mercury 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 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:[1]

- 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 1st 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.

A draft final feasibility study (FS), which addresses cleanup options in the LDW, was published in October 2010 (AECOM 2010). Options considered included various combinations of contaminated sediment removal, containment, and natural recovery. Public comments were

[1] 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)

received until January 2011, and a final FS is being developed. The final FS and EPA/Ecology recommendation for cleanup will be published in a Proposed Plan for public comment in 2012.

Further information about the LDW can be found at the U.S. Environmental Protection Agency (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

The LDW Source Control Strategy (Ecology 2004a) involves developing and implementing a series of detailed, area-specific SCAPs. SCAPs document what is known about the area, potential sources of contamination, and actions needed to address them. Each SCAP is unique to a specific sediment area because the scope of source control for each sediment area varies.

The source control strategy can be found at Ecology's website: http://www.ecy.wa.gov/biblio/0409043.html

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

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, Port of Seattle, the City of Tukwila, and the EPA. Together they are known as the LDW Source Control Work Group (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.

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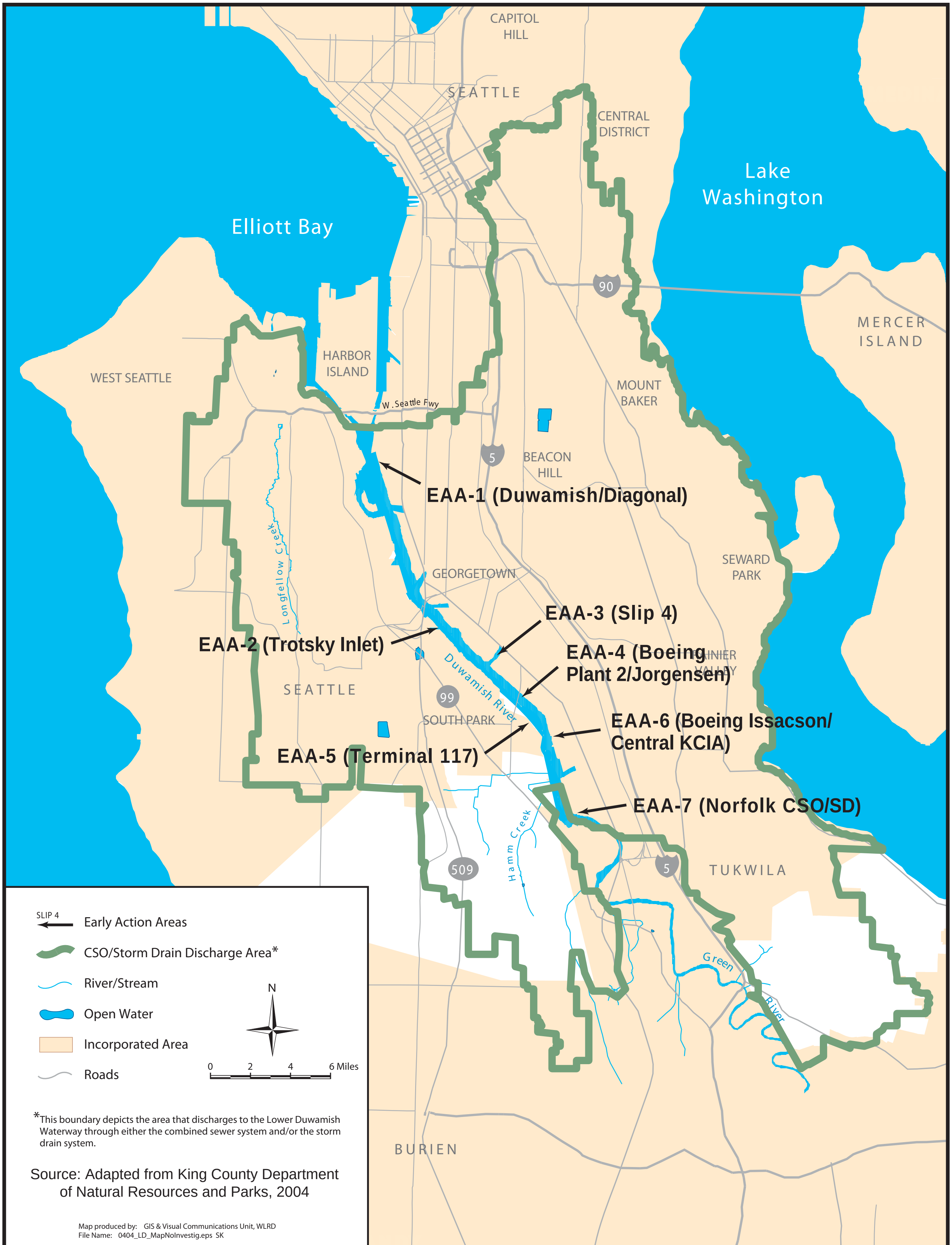

DEPARTMENT OF ECOLOGY State of Washington

Figure 1–1. Lower Duwamish Waterway Site

SAIC From Science to Solutions

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, 2011, 19 SCAPs have been published. Publication dates for these 19 SCAPs and estimated publication dates and schedule for the remaining five SCAPs are as follows:[2]

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	October 2012
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 (1st Avenue S SD)		September 2010	October 2012
RM 2.2-3.4 West (Riverside Drive)		March 2011	July 2012
RM 3.8-4.2 West (Sea King Industrial Park)		July 2012	June 2013
RM 4.2-4.8 West (Restoration Areas)		July 2012	June 2013

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 Duwamish/Diagonal Way CSO/SD, business inspections and source tracing are long-term, ongoing efforts. While it may be possible to reduce

[2] 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.

the level of 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 19 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.

Source Control Area	Original No. of Action Items As Listed in SCAP	Updated No. of Action Items[a]	Action Items Completed[a]	Action Items Planned or In Progress
EAA-1 (Duwamish/Diagonal Way)	16	51	33	18
EAA-2 (Trotsky Inlet)	30	33	16	17
EAA-3 (Slip 4)	44	55	42	13
EAA-4 (Boeing Plant 2/Jorgensen Forge)	31	31	9	22
EAA-5 (Terminal 117)	19	32	24	8
EAA-6 (Boeing Isaacson/Central KCIA)	31	28	2	26
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[a]	Action Items Completed[a]	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	19	3	16
RM 1.7-2.0 East (Slip 2 to Slip 3)	37	39	3	36
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	8	34
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
Total	503	556	180	376

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

Currently, a total of 556 source control action items have been identified based on the 19 SCAPs published as of the end of December 2011:

- 173 action items (31 percent) have been completed,
- 78 action items (14 percent) are in progress,
- 288 action items (52 percent) are planned,
- 10 action items (2 percent) are ongoing, long-term actions, and
- 7 action items (1 percent) have been cancelled (not needed).

Of the 376 action items that are active (i.e., in progress, planned, or ongoing), 107 (28 percent) are considered high priority (to be completed prior to sediment cleanup), 184 (49 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 72 action items during the current reporting period (October 2010 through December 2011) as a result of the completion of SCAPs for the King County Lease Parcels, Boeing Developmental Center, Kellogg Island to Lafarge Cement, and Terminal 115 source control areas, and the addition of follow-up action items, as appropriate. A total of 22 action items were completed during this period. Additional action items will be identified as SCAPs are completed for the remaining five source control areas. The status of action items for each source control area is shown in Figure ES-1.

Ecology developed long-term 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, and August 2011. 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. Additional upland sites that may require site assessment and cleanup continue to be identified as additional SCAPs are completed.

Ecology's Toxics Cleanup Program (TCP) currently has four full-time site managers dedicated to contaminated upland sites in the LDW. The projected schedule in previous reports assumed that a fifth site manager will be required by October 2010. A fifth full-time site manager has not been hired as of the current reporting period.

The long-term schedule projection for implementing source control is based on a number of scheduling assumptions. These assumptions are presented in Appendix A. The current schedule projection assumes that the SCAPs will identify up to 20 upland contaminated cleanup sites.[3] The 20 upland sites include only those for which Ecology will need to assign one of its full-time site managers. Work is underway at 10 of these sites (Industrial Container Services/Trotsky, Douglas Management, Crowley Marine Services/8th Avenue Terminals, North Boeing Field/Georgetown Steam Plant (NBF-GTSP), Boeing Isaacson/Thompson, Duwamish Marine Center, 8801 Site, Duwamish Shipyard, Glacier Northwest/Reichhold, and N Terminal 115). The 20 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.

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.

The projected schedule estimates that source control from all of the 20 potentially contaminated upland sites could be implemented by October 2023.

[3] 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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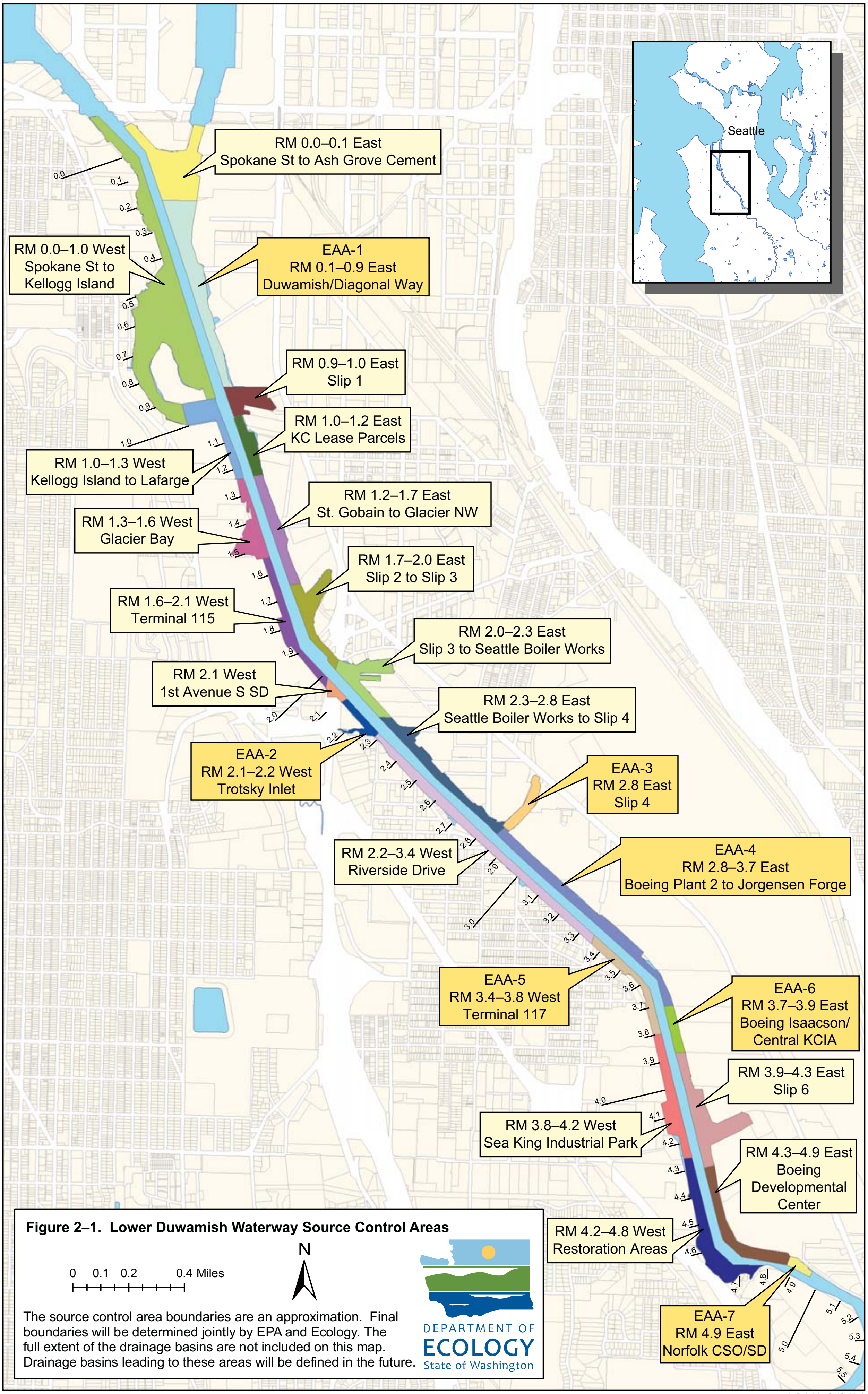

Figure 2–1. Lower Duwamish Waterway Source Control Areas

L. Delwiche SAIC, 2010

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

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Site Manager 1																		
EAA-3: NBF/GTSP																Start Apr 2007; Finish Nov 2021		
RM 1.0-1.3 W (Kellogg Island to LaFarge)																		Start Jul 2015; Finish Oct 2023
Site Manager 2																		
EAA-2: Trotsky Property											Start Jan 2008; Finish Jun 2016							
EAA-2: Douglas Management Co.												Start Apr 2008; Finish Jun 2017						
EAA-3: Crowley/8th Ave Terminals										Start Apr 2008; Finish Oct 2015								
RM 1.7-2.0 E (Duwamish Marine Center)												Start Dec 2009; Finish Oct 2017						
RM 0.9-1.0 E (Slip 1)																Start Jun 2013; Finish Sep 2021		
RM 2.3-2.8 E (SBW to Slip 4)																	Start Feb 2014; Finish May 2022	
RM 3.8-4.2 W (Sea King Ind Park)																		Start Feb 2015; Finish Apr 2023
RM 4.2-4.8 W (Restoration Areas)																		Start Jun 2015; Finish Sep 2023
Site Manager 3																		
RM 1.3-1.6 W: Glacier NW/Reichhold										Start Mar 2008; Finish Aug 2015								
RM 1.3-1.6 W: Duwamish Shipyard											Start May 2007; Finish Oct 2016							
RM 1.3-1.6 W: Terminal 115N												Start Jul 2009; Finish Mar 2017						
RM 1.6-2.1 W (Terminal 115)																Start Apr 2013; Finish Jul 2021		
RM 2.2-3.4 W (Riverside Drive)																	Start Jun 2014; Finish Sep 2022	
RM 0.0-1.0 W (Spokane to Kellogg)																		Start Nov 2014; Finish Feb 2023
Site Manager 4																		
RM 3.9-4.3 E: 8801 Site										Start Jan 2008; Finish Oct 2015								
EAA-6: Boeing Isaacson											Start Dec 2008; Finish Jul 2016							
RM 0.0-0.1 E (Spokane St to Ash Grove)																Start Jun 2013; Finish Sep 2021		
EAA-7 (Norfolk CSO/SD)																	Start Mar 2014; Finish Jun 2022	
Part-Time Site Managers																		
EAA-4: Jorgensen Forge Uplands						Start Apr 2007; Finish Dec 2011												
RM 2.0-2.3 E: Fox Avenue Building							Start Jan 2009; Finish May 2012											
RM 2.1 W: South Park Landfill													Start 2007; Finish Apr 2018					
Other Agencies																		
EAA-1: Port of Seattle/Independent Cleanup									Start Jan 2005; Finish Mar 2014									
EAA-4 (Boeing Plant 2)										Start Jan 2003; Finish Jul 2015								
EAA-5: Terminal 117								Start Aug 2005; Finish June 2013										
EAA-7: BDC South Storm Drain								Start Jan 2010; Finish Jul 2013										
RM 3.9-4.3 E: Rhone-Poulenc Site											Start Jan 2009; Finish Jul 2016							

Note: Start date is initiation of PLP Determination process; finish date is completion of Source Control Determination

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, and August 2011 Source Control Status Reports (Ecology 2008b, 2008e, 2009j, 2011l). 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).
- Continue public involvement and outreach efforts (Ecology, EPA, King County, Duwamish River Cleanup Coalition).
- 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 May 2012, EPA had issued Request for Information letters to 277 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.

The City of Seattle operates the local sanitary/combined sewers that collect wastewater 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 (October 2010 through December 2011), 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 458 screening visits and inspections at 253 facilities during the period from October 2010 through December 2011. This includes 22 screening visits, 205 initial inspections, and 231 follow-up inspections. Of the 253 facilities inspected, all but 33 were in compliance as of December 31, 2011.

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 October 2010 through December 2011, SPU conducted inspections in the following source control areas:

Source Control Area	Sub-Basin	No. of Facilities Inspected	No. of Inspected Facilities In Compliance as of 12/31/2011
RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way)	Diagonal Avenue S SD, Diagonal Avenue S CSO/SD, Nevada Street SD	190	165
RM 1.2-1.7 East (St. Gobain to Glacier NW)	Duwamish East (Direct)	2	2
RM 1.7-2.0 East (Slip 2 to Slip 3)	Duwamish East (Direct)	1	1
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)	S River Street SD, S Brighton Street SD	4	2
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)	S Garden Street SD, Duwamish East (Direct)	1	0
RM 2.8 East (EAA-3: Slip 4)	Slip 4	3	3
RM 4.9 East (EAA-7: Norfolk CSO/SD)	Norfolk CSO/SD/Emergency Overflow (EOF)	15	14

Source Control Area	Sub-Basin	No. of Facilities Inspected	No. of Inspected Facilities In Compliance as of 12/31/2011
RM 0.0-1.0 West (Spokane St to Kellogg Island)	SW Dakota Street SD, SW Idaho Street SD	2	2
RM 1.3-1.6 West (Glacier Bay)	SW Kenny Street SD, Duwamish West (Direct)	1	1
RM 1.6-2.1 West (Terminal 115)	Highland Way SW SD	1	1
RM 2.1 West (1st Avenue S SD)	1st Avenue S SD	11	9
RM 2.1-2.2 West (EAA-2: Trotsky Inlet)	Trotsky Inlet, 2nd Avenue S SD	7	6
RM 2.2-3.4 West (Riverside Drive)	7th Avenue S SD, South Park/Riverside Drive, Duwamish West (Direct)	5	3
RM 3.8-4.2 West (Sea King Industrial Park)	S 96th Street SD	8	6
	Total	**253**	**212***

*Includes 22 facilities with screening visits. A total of 33 facilities were not in compliance as of December 31, 2011, and compliance information was unavailable for eight 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 (October 2010 through December 2011), Ecology conducted 141 inspections at 105 facilities. Ecology inspections are listed in Appendix C.

King County Industrial Waste (KCIW) conducted source control inspections in unincorporated areas of King County during the current reporting period. Specifically, inspections were conducted at 31 facilities in the Riverside Drive, Sea King Industrial Park, and Restoration Areas source control areas. These are listed in Appendix D.

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 2011, Ecology has approximately 100 NPDES permits on record for the LDW source area. 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 Industrial Stormwater General Permit (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. 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.

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:

- 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 Hazardous Waste & Toxics Reduction (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.

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:

- Outfall survey and sediment sampling study (Ecology)
- Collection of in-line sediment trap samples (SPU)
- Collection of storm drain catch basin and in-line solids samples (SPU)
- Accelerated source tracing study (Ecology)
- Lateral loading study (Ecology)
- PCB building material survey (Ecology)
- 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 system,
- 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 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 2010c). The LAET and 2LAET values are expressed in terms of dry weight (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 ng/kg 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 inline 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 (October 2010 through December 2011) are shown on Figure 3-2. 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 Sediment Sampling and Outfall Inventory (Ecology)

Ecology conducted an outfall sediment sampling study to collect LDW surface sediment data near stormwater outfalls and CSOs in locations where data had not previously been collected, in an effort to better understand the relationship between storm drain discharges and sediment contamination. Surface sediment samples were collected at 162 locations near 84 outfalls during March/April 2011 (SAIC 2011d).

As part of this study, Ecology also updated an outfall inventory, originally presented as Appendix H in the LDW RI report, and expanded it to include available data from sampling of stormwater/CSOs and storm drain solids in the drainage systems associated with each outfall (SAIC 2011e). It also includes available LDW surface sediment sampling data that are in close proximity (within 50 to 100 feet) to each outfall. In addition, this work also addressed a source control item identified in Table 3-1, which stated that a total of 22 outfalls are currently identified as “pipe of unresolved origin and/or use.”

As follow-on to the outfall sediment sampling study, Ecology also prepared a source tracing data evaluation report in 2011 (SAIC and NewFields 2011b). This report presented a series of maps and tables that combined available sediment, stormwater, and storm drain solids data collected by various LDW stakeholders, to gain a better understanding of the relationship between contaminants in stormwater and contaminant concentrations in sediments. It identified areas where additional data are needed in order to identify and control contaminant sources and was designed to assist Ecology with the prioritization of source control efforts. In addition, it compared stormwater and storm drain solids sampling methods so that future data collection efforts can provide needed information in a timely and cost-effective manner.

3.2.2 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 4 to 6 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[a]	6	2003	SPU
KC Airport SD#3/PS44 EOF	9	2005	SPU/Boeing[b]
I-5 SD at Slip 4	1	2005	SPU
Norfolk CSO/SD/PS 17 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[c]	1	2008 and 2009	SPU
SW Idaho Street SD	3	2008	SPU
1st 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
7th Avenue S SD	3	2008	SPU
S 96th Street SD	3	2008	SPU
Hamm Creek	1	2008	SPU
Total	**41**		

a – Traps removed in April 2010 after collection of 13 rounds of samples.
b – Boeing maintains seven of the traps and SPU maintains two 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 (October 2010 through December 2011), SPU collected sediment trap samples in the following areas (Figure 3-2):

Outfall	No. of Sediment Trap Samples
KC Airport SD#1	1
KC Airport SD#2 (Central KCIA)	1
1st Avenue S SD	4
7th Avenue S SD	3
S 96th 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.

3.2.3 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 October 2010 and December 2011, SPU collected a total of 29 in-line solids samples, 5 onsite catch basin samples, and 52 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 (October 2010 through December 2011) is also shown. Results specific to each source control area are discussed in Sections 4 through 27.

LDW East Side	No. of Samples 10/1/10 – 12/31/11
S Nevada Street SD	0
Diagonal Avenue S CSO/SD	26[a]
Michigan Street CSO	2
S River Street SD	0
S Brighton CSO/SD	1
S Myrtle Street SD	4
S Garden Street SD	0
KCIA SD#3/PS44 EOF	0
I-5 SD at Slip 4	0
16th Avenue S SD	0
KCIA SD#2/PS45 EOF	1
KCIA-Jorgensen SD	0
KCIA SD#1	1
Norfolk CSO/SD/PS17 EOF	10

LDW West Side	No. of Samples 10/1/10 – 12/31/11
SW Idaho Street SD	4
SW Dakota Street SD	0
SW Kenny Street SD	1
Highland Way SW SD	3
1st Avenue S SD	4
2nd Avenue S SD	2
7th Avenue S SD	12
8th Avenue S CSO	3
S 96th Street SD	10
Hamm Creek	2

a – 25 samples were collected from catch basins plumbed to the separated SD system; one sample was collected from catch basins plumbed to the combined sewer system.

Additional in-line and catch basin samples have been collected by Seattle City Light (SCL; 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.

3.2.4 Combined Sewer System Sampling (King County)

King County prepared a Sampling and Analysis Plan in August 2011 for collection of solids samples in LDW CSO basins (King County 2011d). Specifically, King County will collect and analyze 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 was originally to conduct limited sampling in the Brand and Michigan CSO basins, but has been expanded to include other basins. Activities include in-line solids grab sampling and sediment trap sampling. Sample locations will be prioritized based on the number of CSO discharges per year. Sample collection began in 2011, and will continue as needed through 2012.

3.2.5 Sampling of Metal Recycling Industrial Users (King County)

During 2010, KCIW collected whole water wastewater samples for low-level PCB analysis at five metals recycling or metal-intensive industrial users of the King County sanitary sewer system. Samples from two storm event discharges to the sanitary sewer system were collected from each of the following facilities in 2010:

- Seattle Iron & Metals
- Independent Metals (Plant 1)
- Nucor Steel Corporation
- Affordable Auto Wrecking
- Pacific Iron & Metal

PCBs were detected only at Independent Metals; total PCBs were detected at 0.93 to 0.94 µg/L. A solids sample was subsequently collected from the bottom of the sampling manhole at this location; PCBs were detected at 27.8 mg/kg DW (King County 2011a).

3.2.6 Source Tracing in Unincorporated King County (EPA)

EPA’s contractors collected storm drain solids samples from eight locations in Tukwila on August 23, 2011. Samples were collected from the following locations: one sample from 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; 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). Results were published after the current reporting period; these will be summarized in the next Source Control Status Report.

On November 7, 2011, EPA's contractors collected storm drain solids samples from nine locations in the S 96th Street SD (Sea King Industrial Park source control area). Results were published after the current reporting period; these will be summarized in the next Source Control Status Report.

3.2.7 Accelerated Source Tracing Study (Ecology)

Ecology conducted an accelerated source tracing study to measure contaminant concentrations in stormwater at multiple locations in two LDW sub-basins to assess the practicality and effectiveness of an "up-the-pipe" source tracing approach and to compare different sampling methods to assess which are most useful for purposes of source tracing (SAIC and NewFields 2011a). Whole water, filtered solids, sediment trap solids, and bedload sediment trap solids samples were collected between November 2010 and June 2011 at eight locations in the Diagonal Avenue S SD basin.

One of the early objectives of this study was to perform "up-the-pipe" source tracing. The intent was to sample outfalls as they enter the river and then move upstream, or up the pipe, tracking any elevated concentrations of COCs. Due to logistical constraints, this type of source tracing could not be conducted. Rather, multiple locations were selected for in-depth sampling in two sub-basins. The eight sampling locations monitored during this study were located in the S Snoqualmie Street and S Dakota Street drainage sub-basins of the City of Seattle's Diagonal Avenue S CSO/SD basin. Multiple sample types were collected at each of the locations from November 2010 through June 2011. Sample types included whole water, filtered solids, sediment traps, and bedload sediment traps. For whole water and filtered solids, samples were collected during periods of stormwater flow, base flow, and high tide in efforts to gain a better understanding of contaminant concentrations that may exist during different flow conditions in the storm drains.

All results were compared to applicable numeric criteria. Whole water results were compared to surface water quality criteria and the solids results were compared to the DW SMS sediment criteria and the LAET/2LAET thresholds. A wide variety of detected contaminants exceeded these criteria. Copper frequently exceeded the criteria in whole water, while total PCBs, mercury, zinc, high molecular weight PAH (HPAH), and phthalates frequently exceeded the sediment standards. Additional COCs such as polybrominated diphenyl ether (PBDE) and dioxin/furan congeners were also analyzed. These contaminants do not have numeric criteria, but concentrations were elevated relative to typical Washington State sediments, particularly for PBDEs.

3.2.8 Lateral Loading Study (Ecology)

Ecology conducted a stormwater lateral loading study at four significant stormwater outfalls within the LDW area: the Norfolk CSO/EOF/SD; KCIA SD#2, which drains the central portion of KCIA; a Port of Seattle outfall at Terminal 115; and a Boeing outfall at the Boeing Developmental Center (BD) (SAIC and NewFields 2011c). The objectives of the study were to collect data necessary to assess contaminant loading from four significant municipal and industrial stormwater outfalls; identify stormwater contaminants associated with the different outfalls studied; estimate stormwater contaminant lateral loadings for the studied outfalls; and to correlate the loadings from whole water, filtered solids, and sediment trap solids samples, to the extent possible.

During the 2010–2011 wet season, whole water and filtered solids samples were collected during storm events, base flow, and a high tidal period. Sediment traps were deployed over the entire season in the hope of capturing solids that integrate seasonal storm flow. Using the analytical results, contaminant lateral loadings were calculated for each of the studied outfalls.

Major observations from this study are included below:

- The intertidal nature of LDW outfalls greatly restricts the ability to sample storm events and derive loading estimates.
- Tidal water present in storm drains had low velocity throughout the wet season and low total suspended solids (TSS) and COC concentrations when measured at the beginning of the dry season. Therefore, tidal inflow may not significantly introduce or redistribute COCs within a storm drain.
- Limited sample volume often restricted the analysis of COCs. Wide variability of concentrations was often measured in storm drain samples from the same location because of differences in sampling event conditions, sampling methodology, and inherent variability.
- PCBs, dioxin/furan congeners, metals, PAHs, and PBDEs were detected in stormwater samples from all sampled outfalls. This mix of COCs may be typical of surface runoff from urban/industrial developed properties in the LDW drainage basin.
- Independent loading estimates for the different stormwater sample types (whole water, filtered solids, and sediment trap solids) are remarkably similar given the extremely different circumstances by which each sample type was collected and its associated errors.
- Base flow COC loadings in these four drains are substantially lower than storm flow, suggesting that surface runoff and not infiltration dominate the potential for sediment impacts for the outfalls in this study. This may not be the case in areas where contaminated soil or groundwater infiltrates into the storm drains.

Over the course of this study, many sampling challenges were encountered related to weather predictions, site conditions, and sampling equipment. Because the same challenges will likely be confronted during future LDW stormwater sampling efforts, the lessons learned from this study may be used to help increase the efficiency and sampling efficacy of future stormwater sampling projects.

3.2.9 Survey of PCBs in Building Materials (Ecology)

In 2011, Ecology conducted a survey of PCBs in building paint and caulking materials in the LDW basin. This study was conducted to assess the prevalence of PCB-bearing building materials in the LDW drainage basin (using data from a representative drainage basin) and, if possible, evaluate the contribution of these PCB sources to LDW sediments (SAIC 2011f). As a secondary objective, this survey examined the potential contribution of selected metals (arsenic, cadmium, chromium, copper, lead, mercury, silver, and zinc) from building paints to LDW sediments.

The study targeted buildings constructed between 1950 and 1977. In the LDW basin, approximately 7,594 buildings were constructed during this period. The Diagonal Avenue S SD drainage basin was selected as representative of the entire LDW basin. The Diagonal Avenue S SD covers 2,620 acres and contains a variety of industrial, commercial, and residential buildings, including 2,286 buildings constructed between 1950 and 1977.

In April 2011, paint and caulk samples were collected at 31 properties within the Diagonal Avenue S storm drain basin to evaluate the potential contribution of building materials to the PCBs and heavy metals found in LDW sediments. The samples were collected primarily from industrial buildings because these types of structures were more likely to use expensive industrial-grade PCB additives in their paint and caulk. The study concluded that the paints in the 1950s through 1970s industrial buildings and the 1950s commercial buildings contain relatively high concentrations of PCBs and metals.

PCBs were detected in 15 of 38 (39 percent) of building paint composite samples, with detected concentrations from 0.85 to 61 milligrams per kilogram (mg/kg). PCBs were detected in 8 of 17 (47 percent) of building caulk samples, with detected concentrations from 3.0 to 920 mg/kg. High concentrations of chromium (up to 3,870 mg/kg), copper (up to 1,380 mg/kg), lead (up to 14,200 mg/kg), mercury (up to 50 mg/kg), and zinc (up to 56,200 mg/kg) were also detected in building paint.

It was not possible to evaluate the contribution of PCBs and metals in building materials to sediments in specific storm drain structures. Because of the limited sample size and the need to collect composite samples representative of paint condition and color, the individual sampling locations that made up each composite area were not necessarily in close proximity. Individual samples in a composite area were from several thousand feet to up to 2 miles apart. Therefore, comparison of PCB concentrations in these composite sample results to nearby storm drain data would not provide meaningful information to assess a potential correlation.

3.2.10 Bank Sampling (Ecology)

In late 2011, 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 expected to be published in early 2012.

3.2.11 Atmospheric Deposition Sampling

King County prepared a Sampling and Analysis Plan in August 2011 for a year-long study of atmospheric deposition in the Green/Duwamish River basin. The objective of the study is to compare the measurements of bulk deposition (dry particulate and rainfall) at a small number of stations in areas of different land use within the Green/Duwamish River basin and to provide information to assist in understanding atmospheric sources to the LDW. Samples will be analyzed for select metals, mercury, PAHs, PCBs, and dioxins/furans.

3.3 Site Assessment and Cleanup

During SCAP development, Ecology and its contractors identify contaminated properties that may 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 reported 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, 2011, Ecology and its contractors had conducted assessments of 487 properties in 19 source control areas (Table 3-4). These are shown in Figure 3-3. In addition, assessments have been conducted for approximately 379 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 3-3).

EPA is managing five sites under the Resource Conservation and Recovery Act (RCRA) and/or CERCLA:

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

Ecology is managing the following sites under MTCA (as of December 31, 2011):

- 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
- South Park Landfill – Agreed Order signed May 2009
- Crowley Marine Services/8th 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 Combined Sewer Overflow Control Program Review (King County)

From 2010 to 2012, the King County CSO Control Program is reviewing its CSO Control Plan. This review includes extensive engineering, environmental, technology evaluation, economic and social impact analysis to determine if, and how, King County's CSO Control Plan should be modified. Feedback from a September 29, 2010 workshop on the environmental science basis for control of King County CSOs indicated that stakeholders supported the program's prioritization of the Duwamish area for the next CSO control projects.

A workshop held on November 17, 2010, to brief interested community members on the county's evaluation of treatment technologies generated input on the evaluation criteria the county will use to determine which treatment technologies to include in the 2012 Plan Update. The outcome of this evaluation, including results of the county's 2009 CSO treatment pilot, will be a recommendation of one to two treatment technologies that will be used in proposed CSO treatment plants in the Duwamish area. Opportunities for public involvement continue throughout the plan review, with more information at: http://www.kingcounty.gov/environment/wastewater/CSO.aspx

3.4.2 Source Control Database Development (Ecology)

Ecology continued work on a web-based LDW Source Control Management Database. Once the database is complete, users will be able to track source control activities for each source control area, including site evaluations, chemicals of concern, location, actions taken, and parties responsible.

During the current reporting period, Ecology and its contractor fixed numerous technical issues associated with data entry and continued to upload new information into the database as it was received. The reporting function has not yet been developed. A publicly available version is planned, but at this time no date has been established.

3.4.3 Review of Responses to CERCLA 104(e) Request for Information Letters (Ecology)

During the current reporting period (October 2010 through December 2011), Ecology and its contractors continued to review potentially liable party (PLP) responses to EPA CERCLA 104(e) requests for information and to summarize information pertinent to source control. Highest priority is given to those reviews that address specific action items as listed in Tables 3-2 and 3-3. These reviews are currently in progress.

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.[4] 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 2011l, published in August 2011)

[4] http://www.ecy.wa.gov/programs/tcp/sites_brochure/lower_duwamish/lower_duwamish_hp.html

The current status report describes source control actions that were conducted from October 2010 through December 2011.

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 between October 2010 and December 2011 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.

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.

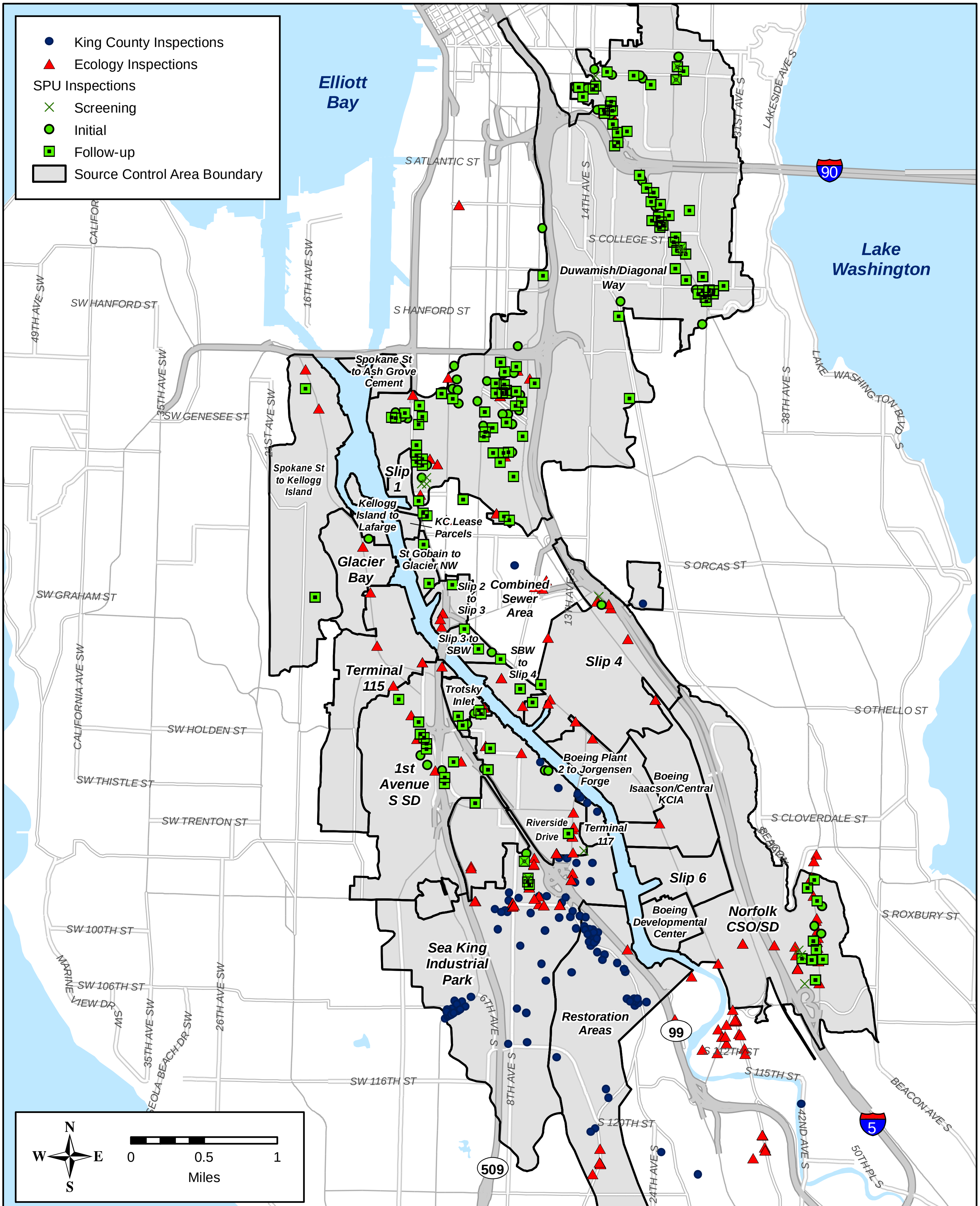

Figure 3–1. Inspections in the Lower Duwamish Waterway Basin October 2010 through December 2011

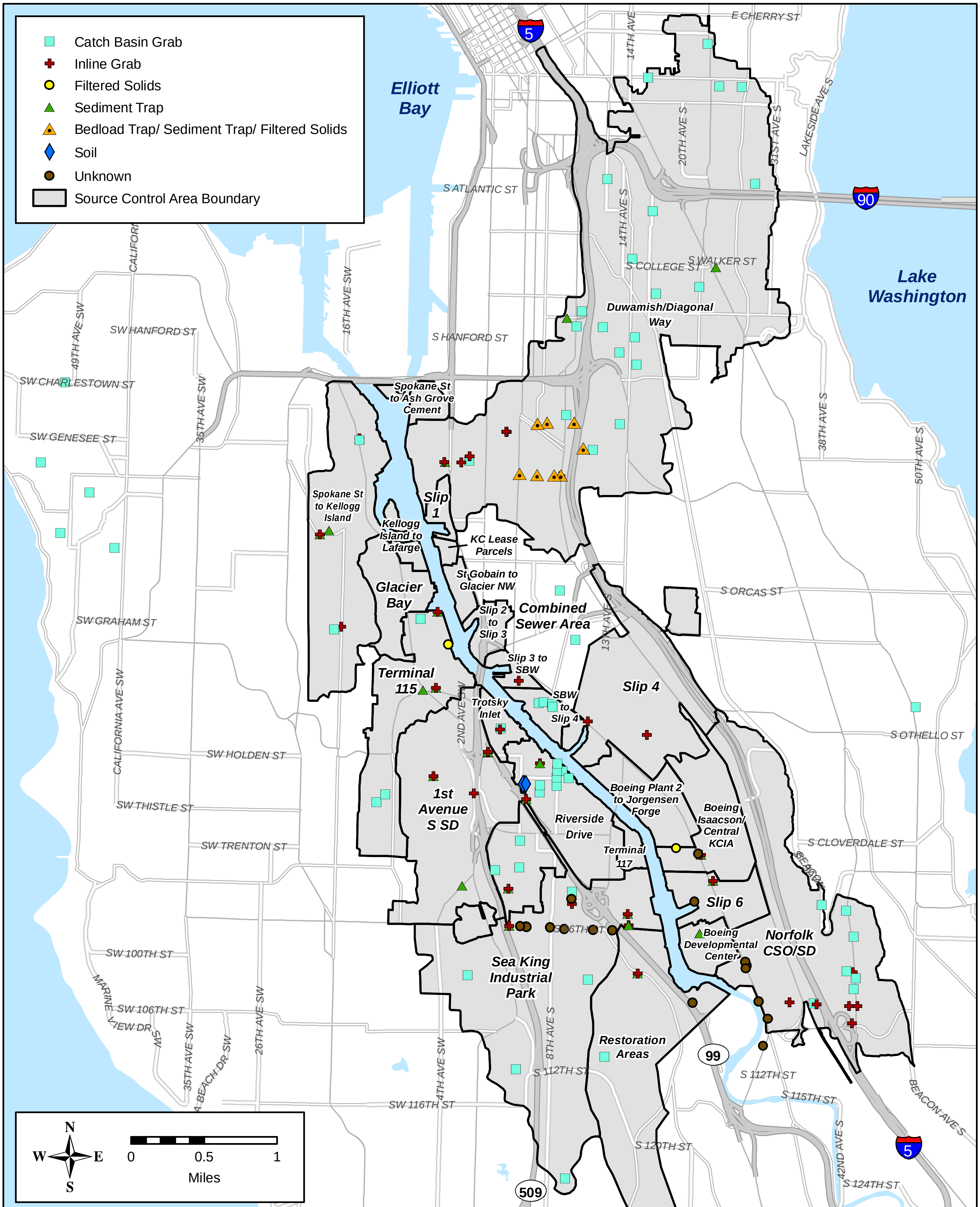

Figure 3–2. Source Tracing Sample Locations in the LDW Basin October 2010 through December 2011

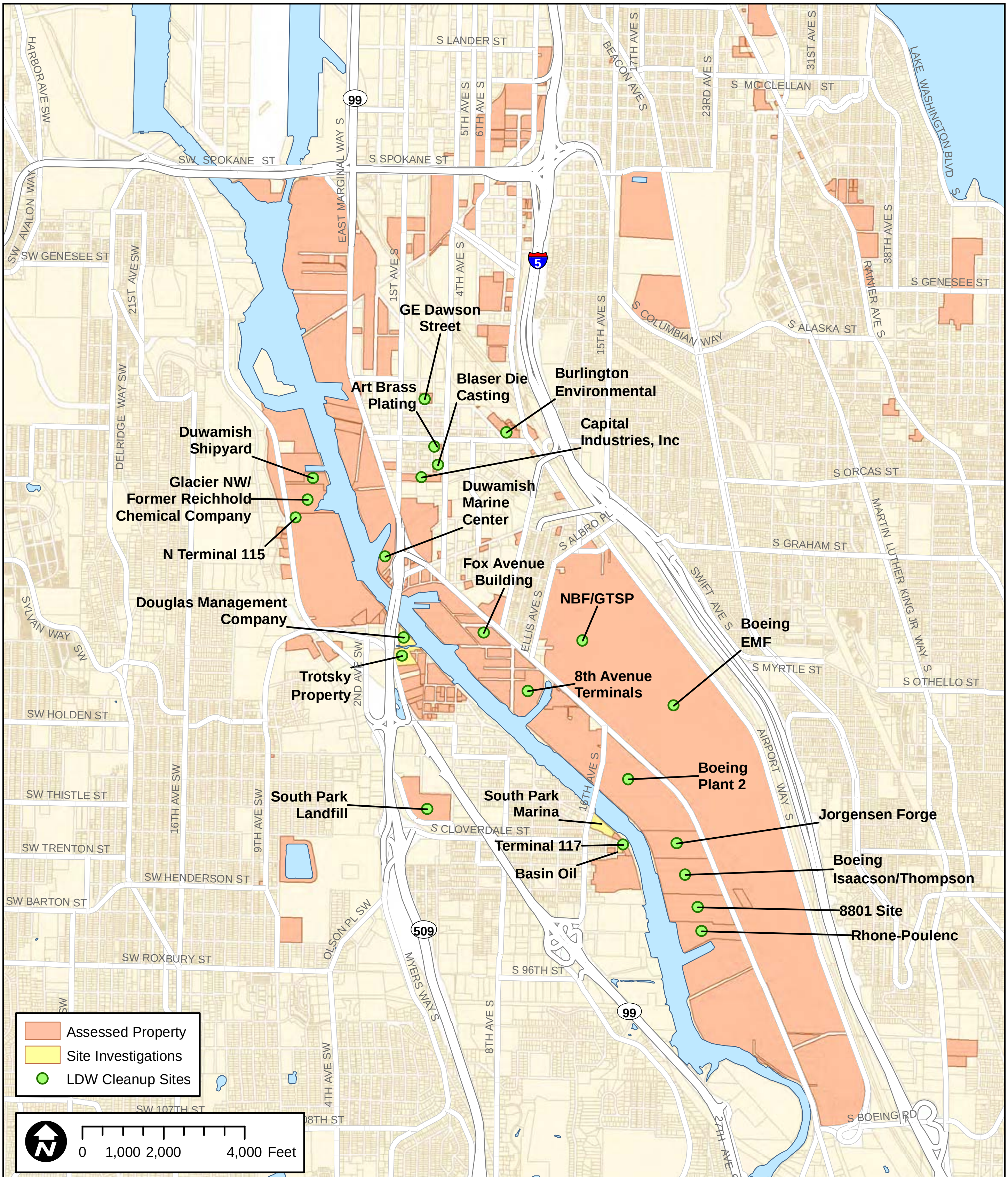

Figure 3–3. Ecology Property Assessments Through December 2011

Table 3-1. General Source Control Action Items

Action Item	Priority	Responsible Party	Status	Estimated Completion Date	Notes/Follow-On Actions
Locate/track 22 "unknown" outfalls	Medium	Ecology, SPU	Complete	Dec-2011	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	Medium	Ecology	In Progress	Mar-2012	Bank sampling was conducted in May 2011; a final report will be 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	Medium	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	Medium	City of Tacoma, City of Seattle, King County, Ecology, EPA	Ongoing	TBD	Additional air deposition studies planned for 2012.
Evaluate and implement stormwater source control and treatment options to address air-to-stormwater-to-sediment pathway, as appropriate	Medium	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	Priority	Responsible Party	Status	Estimated Completion Date	Notes/Follow-On Actions
Prepare semi-annual LDW Source Control Status Reports	Medium	Ecology	Ongoing	NA	A source control status report was completed in August 2011 for the period July 2009 through September 2010.
Monitor upland spills	Low	Ecology	Ongoing	NA	
Continue source control and NPDES inspections as needed within the LDW drainage basin	Medium	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	Medium	Ecology, EPA, King County, DRCC	Ongoing	NA	
Complete development of LDW Source Control Database	High	Ecology	In Progress	NA	

Legend	
	High = High priority action item -- to be completed prior to or concurrent with 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

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
Early Action Area 1 (RM 0.1-0.9 East; Duwamish/Diagonal Way)								
Diagonal Ave. 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	During the current reporting period, SPU conducted 155 follow-up inspections in the Duwamish/Diagonal Way source control area. 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	During the current reporting period, SPU conducted 162 initial inspections in the Duwamish/Diagonal Way source control area. 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	Video-inspect 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.
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	
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		Recent inspections have indicated numerous outstanding permit and stormwater quality compliance issues. Installation of stormwater treatment is required.
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. Stormwater treatment is planned to be installed by July 2012.
	Conduct Site Hazard Assessment	Low	Follow-On	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
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	New	Port of Seattle	Complete	--	Oct-09	
	Develop Source Control Strategy Plan for Eastern Parcel.	Medium	New	Port of Seattle	Complete	--	Aug-11	Source Control Strategy Plan was submitted to Ecology on August 29, 2011. Sampling is scheduled for summer 2012.
	Implement appropriate source control actions.	Medium	New	Port of Seattle	In Progress	TBD		Actions to be identified based on Strategy Plans.
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. 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 in 2009 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.
	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		Planning is underway to identify exterior paint PCB characterization data gaps, and to develop an exterior paint removal work plan.

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
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 a 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 of this facility.
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-09	Ecology WQ inspection on July 22, 2009. Warning letter was issued, and a follow-up inspection conducted on August 20, 2009.
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	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
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 2011, 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		
Early Action Area 2 (RM 2.1-2.2 West; Trotsky Inlet)								
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.
	Continue source tracing to identify sources of phthalates and other COCs.	High	SCAP	SPU	In Progress	TBD		Three in-line solids, four onsite catch basin solids, and 16 right-of-way catch basin solids samples were collected during the current reporting period.
	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	2012		To be conducted in accordance with Agreed Order No. DE-6720.
	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.

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
	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	2012		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.
	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 [4093]; 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	TBD		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. Follow-up is needed.
	Verify storm drainage pathway on the southern portion of the property.	Medium	SCAP	Ecology/SPU	In Progress	TBD		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	TBD		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	TBD		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	--	Jun-09	The most recent SWPPP is dated 1993 and should be updated.

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
	Request Boyer Towing to prepare an updated SWPPP for its operations at Parcels B and C.	Low	Follow-On	Ecology	Planned	TBD		WQ inspection conducted on 1/26/2010 indicated that SWPPP was not adequate.
	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	Planned	TBD		Action item identified in Supplemental Data Gaps Report.
Early Action Area 3 (RM 2.8 East; Slip 4)								
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.
	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	2012		
	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.
	Clean catch basins and drain lines.	Medium	SCAP	Crowley	Planned	TBD		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	

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 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 sitewide 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	In Progress	Jun-12		To be completed in late 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	2012		Upstream and downstream stormwater sampling in NBF Flight Line areas in progress.
	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	2012		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	

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 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	In Progress	TBD		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.
	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	SPU, Ecology	Complete	--	Jul-07	Conduct periodic re-inspections as needed.
	Conduct thorough NPDES compliance inspection and determine if additional parameters need to be monitored.	Medium	Follow-On	Ecology	Planned	TBD		KCIA's stormwater permit was reissued to cover the entire airport facility; no water quality inspection has been performed.
	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 3-2.
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	2013		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.
Early Action Area 4 (RM 2.8-3.7 East; Boeing Plant 2 to Jorgensen Forge)								
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		

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 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		
	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	In Progress	2012		
	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	Planned	TBD		To be 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	Planned	TBD		To be completed under Agreed Order No. DE-4127.

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 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 has 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	Boeing, Jorgensen	Complete	--	Feb-11	EPA prepared an Action Memorandum for a Time Critical Removal Action on 9/30/2010; action to include cleaning and closure of 15-inch and 24-inch public storm drain pipes.
	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	
	Continue to address PCB and metal contamination in sediments of the LDW and Shoreline Bank Area through EPA CERCLA Order No. 10-2003-0001	High	SCAP	EPA, Jorgensen	In Progress	2013		
	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		
	Negotiate an Amended Administrative Order on Consent for preparation of an EE/CA for cleanup of affected sediments along a portion of the LDW adjacent to this property.	High	New	EPA, Jorgensen	In Progress	TBD		AOC revised 2008.
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	--	2008	The City of Tukwila currently discharges to the 24-inch stormwater pipe. In December 2009, KCIA rerouted its storm drain lines to eliminate discharge to this pipeline.
	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	In Progress	TBD		KCIA provided a source control report for KCIA drainage basin #5 in January 2009. An inline sediment trap remains in place to characterize inputs from Lot 12.
	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	Planned	TBD		
	Review the SWPPP and make necessary changes to prevent contaminants from entering the KCIA stormwater system.	Low	SCAP	Ecology, KCIA	In Progress	TBD		Ecology reissued KCIA's ISGP to cover the entire airport facility.
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	The City of Tukwila currently discharges to the 24-inch stormwater pipe. In December 2009, KCIA rerouted its storm drain lines to eliminate discharge to this pipeline.
	Determine connections between the KCIA stormwater system and the City of Tukwila system.	High	SCAP	City of Tukwila, KCIA	Complete	--	2008	The City of Tukwila currently discharges to the 24-inch stormwater pipe. In December 2009, KCIA rerouted its storm drain lines to eliminate discharge to this pipeline.

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
Early Action Area 5 (RM 3.4-3.8 West; Terminal 117)								
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.
	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 (above).
	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 (above).
	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 to begin with spring low tides in May 2012.
	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 ISGP compliance inspection conducted at facility in November 2010.
Early Action Area 6 (RM 3.7-3.9 East; Boeing Isaacson/Central KCIA)								
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	In Progress	TBD		Sediment trap sample collected by SPU in March 2009 shows zinc, phenanthrene, HPAH, and BEHP above storm drain screening levels. October 2009 samples shows exceedances of screening levels for HPAHs only. Sediment trap was reinstalled and sampled in December 2010. (See Appendix D.)
	If COCs are present in the storm drain line, conduct source tracing to identify potential contaminant sources at KCIA.	High	SCAP	King County, SPU	Planned	2012		Sediment trap sample between July 2009 and September 2010 contained PAHs above screening levels.
	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	Planned	2012		Sample collected March 2009; analyzed for metals. Not enough sample material for other analytes.
	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, King County	In Progress	2012		Ecology inspection conducted March 2009.

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
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		
	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	Planned	2012		Sediment trap sample collected in March 2009 shows zinc, phenanthrene, HPAH, and BEHP above storm drain screening levels. October 2009 samples shows exceedances of screening levels for HPAHs only.

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
	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	Planned	2012		Eastern and western airport catch basins were cleaned in 2008 and 2010, respectively. The central portion, which includes runways and taxiways, was partly completed in 2011. Phase 2 of the cleaning will occur during summer 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	Sediment samples collected to date have been below SQS/LAET for PCBs. Based on this data, there does not appear to be a significant source of PCBs in this particular drainage basin.
	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		
	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	Planned	TBD		Most recent SPU inspection was August 2006.
	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	Ongoing	TBD		KCIA has inspected tenant facilities and airport common areas annually in accordance with its municipal NPDES Permit Requirements. Inspections of all airport areas, including tenant ramp areas, are performed monthly in accordance with the Airport's Industrial NPDES Permit.
	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	Until Boeing EMF remediation is complete		KCIA is closely monitoring and coordinating access for Boeing to perform remediation work. Boeing provides updates monthly.
Early Action Area 7 (RM 4.9 East; Norfolk CSO/SD)								
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		

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 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 Vortechnics 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 Vortechnics sediment trap unit in November 2011. Additional sampling scheduled for Fall 2012. Ecology completed sampling of storm drain solids in another drain line from the BDC (to Outfall 2088).
	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		

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Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	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.
	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	Not Required	--	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.

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 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		
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
RM 0.0-0.1 East (Spokane Street to Ash Grove Cement)								
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	Apr-12		
	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, Ash Grove Cement	Planned	TBD		
	Obtain a new NPDES permit for discharge into the City storm drain that discharges at S Hind Street.	High	SCAP	Ecology, Ash Grove Cement	Complete	--	Apr-10	NDPES 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	Ash Grove Cement	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		
RM 0.9-1.0 East (Slip 1)								
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		
	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		

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 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	In Progress	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	In Progress	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		
	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		

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 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	In Progress	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	In Progress	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.
RM 1.0-1.2 East (KC Lease Parcels)								
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		
	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		

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 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 *Environmental Site Assessment, Duwamish Properties* 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	TBD		
	Obtain and review a copy of *Environmental Site Assessment, Duwamish Properties,* 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	TBD		
	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		

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 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		
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 Leaking Underground Storage Tank 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		
RM 1.2-1.7 East (Saint Gobain to Glacier Northwest)								
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	Dec-12		
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	Ecology, SPU	Complete	--	Aug-10	SPU conducted initial inspection July 2009, follow-up inspection August 2010. Corrective actions required.
	Conduct follow-up source control inspections as needed until compliance is achieved.	Low	Follow-on	SPU	In Progress	Apr-12		Follow-up NPDES ISGP compliance inspection scehduled 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	Dec-12		If needed, require the property owner/operator to prepare a remedial action plan.

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	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.
	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	PSC	Planned	Dec-14		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	Art Brass Plating	In Progress	Dec-14		Agreed Order DE-5296. Air sparging and SVE interim action initiated in 2008. Still operating. Draft RI Report submitted in July 2011. Revision due in early fall 2012.
	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	Blaser Die Casting	In Progress	Dec-14		Enforcement Order DE-5479. Draft RI Report submitted in July 2011. Revision due in late summer 2012.
Capital Industries Inc.	Complete RI report in accordance with Agreed Order.	Medium	SCAP	Capital Industries	In Progress	Dec-14		Agreed Order DE-5348. Draft RI Report submitted in July 2011. Revision due in early fall 2012.
RM 1.7-2.0 East (Slip 2 to Slip 3)								
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		
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). Need Data
	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		

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 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		
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		

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 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	Planned	TBD		Samson Tug and Barge failed to install the required stormwater treatment by September 30, 2011. Additional stormwater parameters need to be added to their monitoring requirements.
	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	TBD		
	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	In Progress	TBD		
	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	TBD		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		
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		

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

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
	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		
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		

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 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.
	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		
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	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		
	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.

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
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.
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		
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)								
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		Four samples collected from S Myrtle Street SD and no samples collected from the 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		
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		

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
	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		
	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		

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
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	Crowley Marine Services	Planned	TBD		
	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. Follow-up is needed.
	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	First Student - 8th Avenue obtained ISGP coverage in 2011. Organic Fuel Processors obtained ISGP coverage in 2010.
	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	TBD		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	In Progress	TBD		
Fox Avenue Building and Fox Avenue Building #2/Former Great Western Chemical Company	Monitor the progress of the RI/FS to investigate and remediate soil and groundwater contamination beneath the property.	Medium	SCAP	Ecology	In Progress	TBD		
	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		

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 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		
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		
RM 3.9-4.3 East (Slip 6)								
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, PACCAR, Merrill Creek	Complete	--	Nov-08	

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
	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, PACCAR, Merrill Creek	In Progress	TBD		Draft Remedial Investigation Report submitted to Ecology on September 30, 2010, as required by Agreed Order # 6069.
	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, PACCAR, Merrill Creek	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, PACCAR	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, IAAI, Merrill Creek	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, IAAI, Merrill Creek	Planned	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.	High	SCAP	EPA, Container Properties, Rhodia, Bayer CropScience	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, Container Properties, Rhodia, Bayer CropScience	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, Container Properties, Rhodia, Bayer CropScience	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, IAAI	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	KCIWP	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	--	Jul-05	Inline sediment trap was installed by SPU in September 2008. Sample collected March 2009 shows no exceedances of storm drain screening levels.
	Review and modify KCIA stormwater management activities to prevent contaminants from entering the KCIA stormwater system.	Medium	SCAP	Ecology, King County, KCIA	Ongoing	TBD		KCIA is complying with NPDES permit requirements; BMPs include daily pavement sweeping, weekly oil/water separator maintenance, and catch basin cleaning. Efforts are ongoing.

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
	Assess and modify all tenant and airport pollutant prevention measures within KCIA.	Medium	SCAP	KCIA	Ongoing	TBD		
	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	--	2010	Sediment trap sample collected March 2009 did not detect PCBs. Therefore, sampling of joint caulk material in this area is not needed.
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, MOF	Planned	TBD		
	Develop a plan to remove USTs and associated soil and groundwater contamination on the MOF property.	Medium	SCAP	Ecology, MOF	Planned	TBD		
	Identify the source and extent of groundwater contamination on the former BDC property, and conduct remedial action, as necessary.	High	SCAP	Ecology, MOF	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 aclohol. 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	Mar-12		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 presense 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
RM 4.3-4.9 East (Boeing Developmental Center)								
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		

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
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		
	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		
RM 1.0-1.3 West (Kellogg Island to Lafarge Cement)								
Lafarge North America Inc. Seattle	Request information from Lafarge regarding the status of Outfall 001/2139 and 004.	Medium	SCAP	Ecology	Planned	Nov-11		
	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	Dec-12		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	Nov-11		
	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	Mar-12		
	Review the response to the CERCLA Section 104(e) Supplemental Information Request sent to Lafarge by EPA.	Medium	SCAP	Ecology	Planned	Jun-12		
	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	Oct-12		
	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	Oct-12		

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 composition of material behind the bulkhead and whether or not bulkhead repairs were completed during 2006.	Low	SCAP	Ecology	Planned	Nov-11		
	Request Lafarge to provide additional information about the nature and composition of material behind the bulkhead adjacent to the LDW.	Medium	SCAP	Ecology	Planned	Nov-11		
RM 1.3-1.6 West (Glacier Bay)								
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	Alaska Marine Lines	Planned	TBD		
	Confirm location of former USTs that were removed in 1990.	Low	SCAP	Alaska Marine Lines	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, Duwamish Shipyard	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	Duwamish Shipyard	Complete	--	Jan-08	
	Evaluate results of test pit and soil stock pile testing.	Low	New	Duwamish Shipyard	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	Duwamish Shipyard	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	Duwamish Shipyard	Planned	2012		
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions.	High	SCAP	Ecology	Planned	2012		
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	
	Under the Agreed Order, require PLPs to prepare work plans for site investigations as specified by Ecology.	High	SCAP	Property owner/operator	In Progress	2012		Glacier Northwest submitted an RI/FS Work Plan under Agreed Order No. DE-6000. Ecology did not approve this work plan during the current reporting period because it was incomplete.
	Upon approval of work plans by Ecology, conduct site investigations as specified.	High	SCAP	Property owner/operator	Planned	May-12		

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
	Review site investigation results and assess potential for sediment recontamination and need for remedial actions.	High	SCAP	Ecology	Planned	Nov-12		
	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	Dec-12		The Port of Seattle submitted a Draft Work Plan for the RI/FS to Ecology in April 2011. Ecology commented and expects to receive a revised version in 2012.
	Conduct a site inspection to evaluate current operations with respect to stormwater and waste management.	Medium	SCAP	Ecology, SPU	Planned	TBD		
	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	TBD		
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	Chemithon	Planned	TBD		
RM 1.6-2.1 West (Terminal 115)								
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	Planned	TBD		
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	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
	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		
	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		

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
	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	TBD		
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		

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 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		
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		

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 2011

Source Control Area	No. of Properties Adjacent to LDW or Within a SD Basin that Discharges to Source Control Area	No. of Properties Within a CSO Basin that Discharges to Source Control Area
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)	In Progress	In Progress
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)	In Progress	In Progress
RM 2.2-3.4 West (Riverside Drive)	In Progress	In Progress
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
Total Property Assessments Completed (through December 2011)	**487**	**379**

Note: Portions of KCIA are included in EAA-3, EAA-4, EAA-6, and EAA-7. In this table, 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 SD basin, the Nevada Street SD basin, and the Duwamish/Diagonal CSO basin. Portions of the source control area that are adjacent to the LDW are shown in Figure 4-1. The Duwamish/Diagonal CSO/SD basin is shown in Figure 4-2. Action items for this source control area are listed in Table 3-2.

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

4.1 Business Inspections

- SPU conducted business inspections in the Diagonal Avenue S SD basin, the Nevada Street SD basin, and the Duwamish/Diagonal CSO basin during the current reporting period (October 2010 through December 2011); these are listed in Appendix B.
  - SPU conducted a total of 317 inspections at 178 facilities in the Diagonal Avenue S SD basin, including one audit, 17 screening visits, 154 initial inspections, and 145 follow-up inspections. Of these, 25 facilities were identified by SPU as not in compliance as of the end of December 2011:
    - 1-World Globes & Maps, LLC
    - Amazon.com Photo Lab
    - Budd & Co
    - Builder’s Hardware and Supply
    - Burger King Rainier (2021 Rainier Avenue S)
    - CMARR
    - Fiberlay
    - Green Depot Wa Pacific Coast LLC
    - Merlino Foods
    - Modelwerks
    - Moonlight Cafe
    - Mygrant Glass Company
    - Northwest Oriental Foods
    - Northwest Tofu Inc.
    - Oreilly’s Auto Parts (2805 Rainier Ave S)
    - Prologis
    - Recycling Depot
    - Seven Star Mini Mart
    - Spud.com
    - Subway (2301 S Jackson, #201)

        - Superior Imprints, Inc.
        - Tea Garden
        - Tom Bihn Inc.
        - Vans Metal Spinning
        - Victor's Granite & Marble LLC
    - SPU conducted three inspections at two facilities in the Nevada Street SD basin, including two initial inspections and one follow-up inspection (Appendix B). Both facilities were in compliance as of the end of the reporting period.
    - SPU conducted 18 inspections at 10 facilities in the CSO basin, including eight initial inspections and 10 follow-up inspections (Appendix B). All facilities were in compliance as of the end of the reporting period.
- Ecology conducted 18 source control inspections at 13 facilities within this source control area during the current reporting period; these are listed in Appendix C.
    - Ecology inspectors identified three facilities that need to apply for a CNE certificate or for coverage under the ISGP. One of these (Georgetown Brewing Co) subsequently applied for, and received, a stormwater permit.
    - A joint Ecology, EPA, and SPU inspection was conducted at Recycling Depot in November 2011. Several compliance issues were noted. EPA requested to take over the lead for compliance at this facility.

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.
- In addition, SPU has collected 65 in-line solids samples, 78 onsite catch basin samples, one in-line solids sample, and 86 right-of-way catch basin samples in the Diagonal Avenue S CSO/SD basin. During the current reporting period, six in-line solids samples and 20 right-of-way catch basin samples were collected in this drainage basin.
- 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; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. 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	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Copper			●	
	Lead			●	
	Mercury			●	

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
	Zinc			●	
PCBs	PCBs, total		●	●	●
PAHs	LPAH			●	
	HPAH			●	
Phthalates	Bis(2-ethylhexyl)phthalate		●	●	●
	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
LPAH = low molecular weight PAH
TPH = total petroleum hydrocarbons

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

4.3 Facility-Specific Source Control Actions

Port of Seattle Terminal 108 / Former Chiyoda Property

Current Operations	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.
Historical Operations	City/county wastewater treatment plant, with treatment lagoons (used for one-time PCB-contaminated sediment); dredge sediment filling; bulk cement terminal.
Address	4525 Diagonal Avenue S, Seattle
Facility/Site ID	2344 (Chevron Seattle Terminal 4097)
Chemicals of Concern	PCBs, PAHs, cadmium, lead, chromium, petroleum hydrocarbons
Media Affected	Groundwater, soil

In 2008, the Port of Seattle, in consultation with Ecology, prepared a *Source Control Strategy Work Plan* for Terminal 108 (Windward 2008a), which outlined an approach for evaluating and developing long-term source control actions at this property. In 2008, the Port prepared an *Environmental Conditions Report*; based on the findings in this report, the Port decided that different source control options were appropriate for the western (T108W) and eastern (T108E) parcels (Windward 2008b). The Port prepared a Source Control Strategy Plan for T108W in October 2009 (Windward 2009).

- In August 2011, the Port of Seattle submitted a Source Control Strategy Plan for the eastern parcel of Terminal 108 (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 (see below). The Strategy Plan identified stormwater discharge, groundwater transport and discharge, and soil and bank erosion as potentially complete pathways for transport of contaminants to the LDW. Data gaps were identified, including the need for additional information about the following: contaminant concentrations in stormwater discharges; drainage pathway for the wash pad at T106W; and quality of groundwater discharged from T106W and T108E.
- The Port of Seattle will conduct the following activities to address the identified data gaps:
    - Prepare a sampling and analysis plan for the collection of data needed to support source control engineering evaluations, and conduct sampling (planned for summer 2012).
    - Assess operational and structural best management practices (BMPs) at ConGlobal Industries.
    - Prepare a stormwater runoff model for T106W and T108E, to estimate contaminant loading from the property.
    - Conduct routine riverbank inspections.

- Collect groundwater chemistry, groundwater level fluctuation (seasonal and tidal), and soil property data to model the potential transport of contaminants to the LDW.

ConGlobal Industries (formerly Container Care International)

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

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 Duwamish/Diagonal CSO/SD and Nevada Street SD.

- In 2010, stormwater Level 3 corrective actions were triggered at ConGlobal Industries, requiring the installation of stormwater treatment by September 30, 2010. Ecology has identified numerous outstanding permit and stormwater quality compliance issues; follow-up is needed. This facility had been referred to EPA but reverted to Ecology oversight due to citizen lawsuit involvement.

Washington State Liquor Control Board

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

- In January 2011, Ecology completed a Summary of Existing Information report for the Washington State Liquor Control Board (WSLCB) site (Hart Crowser 2011a). This report builds on the 2009 EAA-1 Data Gaps Report (SAIC 2009c) and further evaluates and describes the current and historical land uses and their potential for contaminant releases to soil and/or groundwater. The 2011 report also discusses the environmental regulatory status of the site and its contamination history. Based on the information presented in this report, a reconnaissance plan and an upland investigation were recommended to determine if the WSLCB is a potential source of sediment recontamination.
- In July 2011, Ecology performed a reconnaissance-level investigation to evaluate and document the WSLCB site as a potential source of LDW sediment contamination. Potential contaminant sources include imported dredge or fill material, past and current housekeeping and material management practices, a fuel oil underground storage tank (UST), and past uses on the adjacent T-108 property. The findings presented in a Data Report for the WSLCB suggest that soil and groundwater pose a limited risk to LDW sediments. The data suggest that the elevated concentrations of PCBs in three catch

basins pose a potential risk for sediment recontamination from this site (Hart Crowser 2011d).

General Services Administration (GSA) Federal Center South

Current Operations	Government offices, artist workshops
Historical Operations	Automobile assembly plant, U.S. Army warehouses/depots/offices, motor pool
Address	4645 East Marginal Way S, Seattle; 4735 East Marginal Way S, Seattle
Facility/Site ID	10233917 (Federal Center South) 22526187 (U.S. DOI BIA) 84498157 (USAF Waterport Logistics Office)
Chemicals of Concern	Petroleum hydrocarbons
Media Affected	Soil, groundwater

The GSA Federal Center South facility is in the VCP (Project No. NW2177). Gasoline-, diesel-, and oil-range petroleum hydrocarbons and benzene, toluene, ethylbenzene, and xylenes (BTEX) were released to soil and groundwater near USTs T8 and T7 and near groundwater monitoring well FC9 (Ecology 2009l). These are located in the northwest portion of the property, within the EAA-1 source control area.

- In a letter dated May 31, 2011, Ecology responded to a request for an opinion on the independent cleanup of the GSA Federal Center South facility. In that letter, Ecology stated that further remedial action is necessary to clean up contamination at this site (Ecology 2011j). Ecology had previously sent a letter to the GSA requiring that cleanup levels for groundwater be established on the basis of protecting surface water (Ecology 2009l). According to Ecology's May 2011 opinion letter, these cleanup levels had not been established. Ecology recommended that the GSA prepare a new document containing a thorough evaluation of cleanup standards for this site, additional figures that Ecology had requested, and a re-evaluation of chemical data detections and detection limits compared against the revised cleanup levels (Ecology 2011j).

Rainier Commons / Former Rainier Brewery Property

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

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 (17.5 mg/kg DW at RCB37). 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. In general, the northern catch basins drain to the Diagonal Avenue S CSO/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 No. 2 CSO Outfall of the East Waterway).

Storm Drain and Combined Sewer System:

- On March 14, 2011, KCIW issued a wastewater discharge authorization to Rainier Commons. This authorization permits Rainier Commons to discharge limited amounts of industrial wastewater (stormwater runoff) into King County's sewer system (King County 2011b). This was an interim measure to prevent or minimize off-site movement of PCBs through the stormwater conveyance system. This authorization included monitoring, stormwater source control BMPs such as installation and maintenance of filter fabric in stormwater catch basins, and monitoring requirements. King County is currently evaluating Rainier Commons' annual monitoring data, which indicated the presence of PCBs in stormwater at or above the screening levels established by King County in its discharge authorization.

Building Material Sampling and Removal:

- In October 2010, EPA sampled dust and interior surfaces at Rainier Commons. Dust sample results in office spaces and residences ranged from 1.4 to 15.6 ppm. Good housekeeping practices are recommended to prevent children's PCB exposure. Based on these results, EPA does not believe that PCBs in dust pose a significant risk to current tenants of Rainier Commons.
- Rainier Commons completed a paint removal demonstration pilot project for the Building 6/22 6th floor stairwell area. This paint contained PCBs at some of the higher levels documented to date, and the project area is believed to be generally representative of both the substrates and paints to be encountered in exterior paint on various Rainier Commons buildings. Results of this testing indicated that PCB-bearing paint can be successfully removed from the brick and concrete substrates, with post-removal sampling results of the substrate material indicating levels of residual PCBs that do not warrant any subsequent remedial consideration. It was found that media blasting, using walnut shells, is effective on the relatively soft brick substrate, while traditional sand blasting is appropriate for the concrete substrate.
- EPA is drafting a Toxic Substances Control Act (TSCA)/PCB risk-based disposal approval for the Building 6 interior stairwell. This action will help provide data documenting the efficacy of the proposed paint removal from Rainier Commons. Characterization of remaining PCBs in the substrate will be used to evaluate any coating/encapsulation, monitoring, and maintenance requirements that may be necessary (Bartus 2011).
- EPA expects that Rainier Commons will begin exterior paint removal during the 2012 construction season, with completion during 2013. EPA also expects that Rainier Commons will complete paint removal from two additional interior spaces where existing characterization sampling has indicated the presence of PCB-bearing paint.

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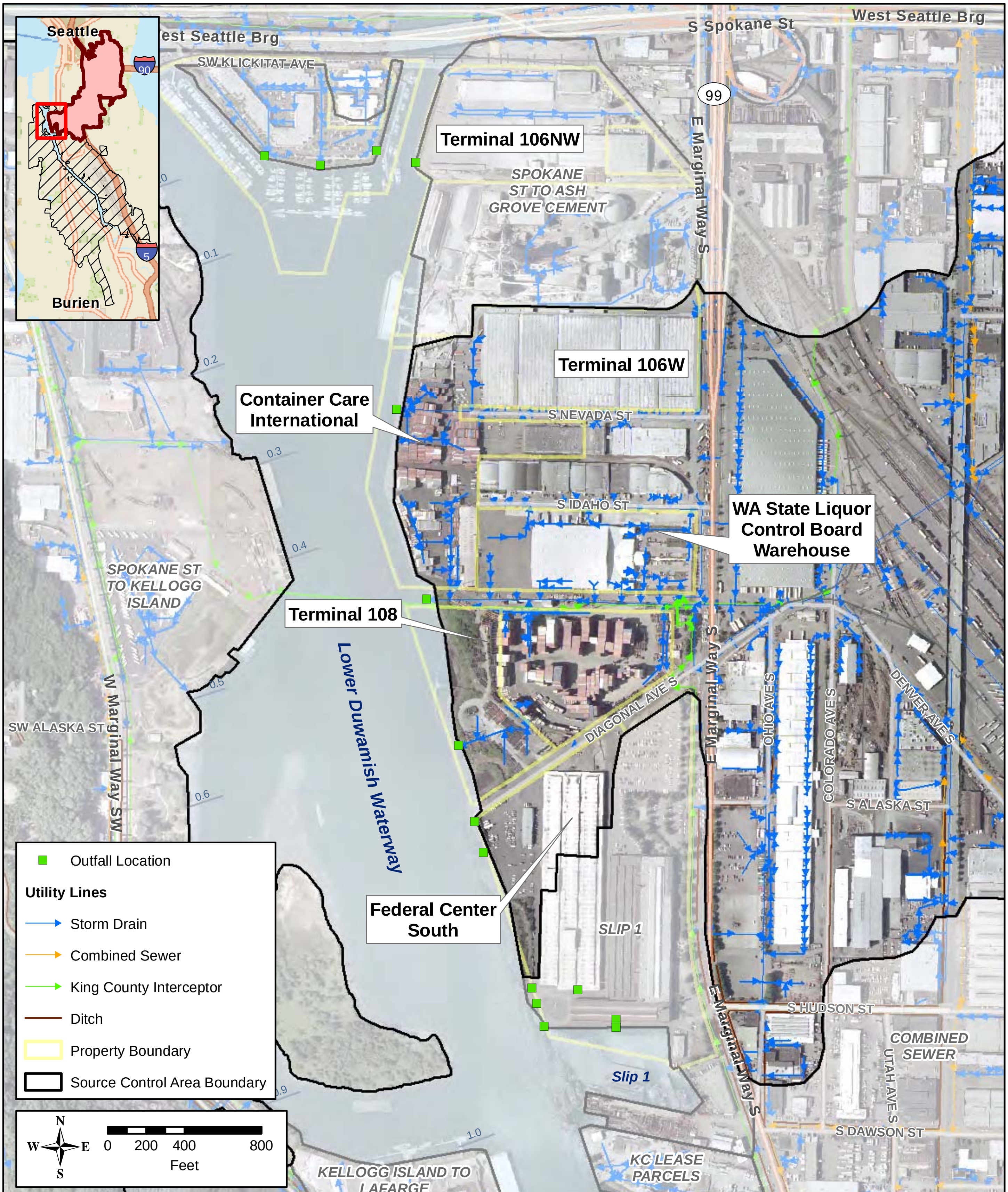
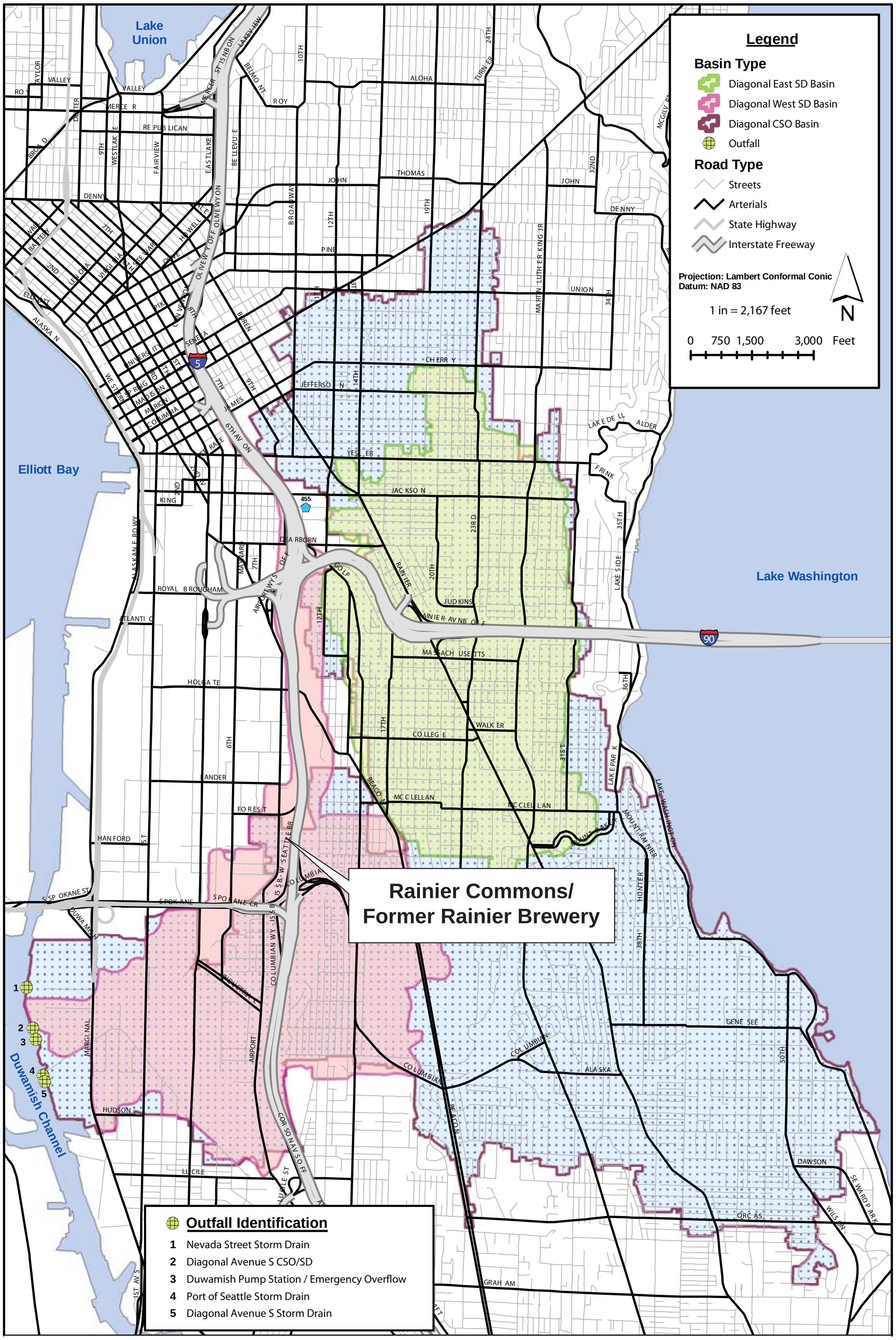


DEPARTMENT OF ECOLOGY State of Washington

Figure 4–1. Early Action Area 1: RM 0.1-0.9 East (Duwamish/Diagonal Way)

SAIC From Science to Solutions



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State of Washington

Figure 4–2. Duwamish/Diagonal CSO/SD Basin

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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 2nd Avenue S SD basin. Action items for this source control area are listed in Table 3-2.

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

5.1 Business Inspections

- SPU conducted a total of 14 inspections at seven facilities in the Trotsky Inlet source control area during the current reporting period, including five initial inspections and nine follow-up inspections (Appendix B). Jon's Recycling was identified by SPU as not in compliance as of the end of December 2011.
- Ecology conducted three inspections at two businesses within this source control area during the current reporting period (Appendix C). A warning letter was issued to United Iron Works.

5.2 Source Tracing

- SPU has collected three in-line solids samples, four onsite catch basin samples, and 16 right-of-way catch basin samples in the 2nd Avenue S SD basin. During the current reporting period, one in-line solids sample and one right-of-way catch basin sample were collected in this drainage basin.
- Chemicals detected at concentrations above storm drain screening levels are identified below; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. 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			

Chemical Class	Chemical	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
	HPAH			
Phthalates	Bis(2-ethylhexyl)phthalate	●		●
	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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

5.3 Facility-Specific Source Control Actions

Industrial Container Services / Trotsky Property / Former Northwest Cooperage

Current Operations	Steel drum reconditioning
Historical Operations	Same as above
Address	7152 1st Avenue S, Seattle 98108
Facility/Site ID	2154 (Industrial Container Services WA LLC)
Chemicals of Concern	PCBs, metals (arsenic, chromium, copper, lead, mercury, zinc), PAHs, phthalates, chlorinated benzenes, phenols, petroleum hydrocarbons, pesticides
Media Affected	Soil, groundwater, sediment

On May 18, 2010, Ecology entered into an Agreed Order (DE-6720) with Herman and Jacqualine 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).

- Ecology and the property owner/operator are negotiating the activities and requirements for an RI/FS Work Plan. Activities include sampling of surface sediments, deeper sediments, seeps, groundwater, the "lagoon" area, and stormwater. An analysis of groundwater flow will also be conducted (Dalton, Olmsted & Fuglevand 2011). Field work for the RI is anticipated to begin in spring 2012.

Douglas Management Company / Alaska Marine Lines

Current Operations	Shipping container storage
Historical Operations	Shipbuilding, metal and salvage, sand and gravel batch plant, marine cargo handling
Address	7100 2nd Avenue S, Seattle 98108
Facility/Site ID	97573251 (Douglas Management Dock)
Chemicals of Concern	Petroleum hydrocarbons, PCBs, metals (arsenic, chromium, copper, mercury, and zinc), volatile organic compounds (VOCs), SVOCs
Media Affected	Soil, groundwater

- On May 6, 2011, Ecology entered into an Agreed Order (DE-8258) with 7100 1st 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 2011h).
- The PLP prepared a draft Data Gaps Report in July 2011. Ecology's comments were incorporated into the draft RI/FS Work Plan, submitted for Ecology review on October 17, 2011 (GeoEngineers 2011). Proposed activities include characterizing the nature and extent of soil and groundwater contamination; assessing 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; identifying data gaps; and describing the proposed field investigations.

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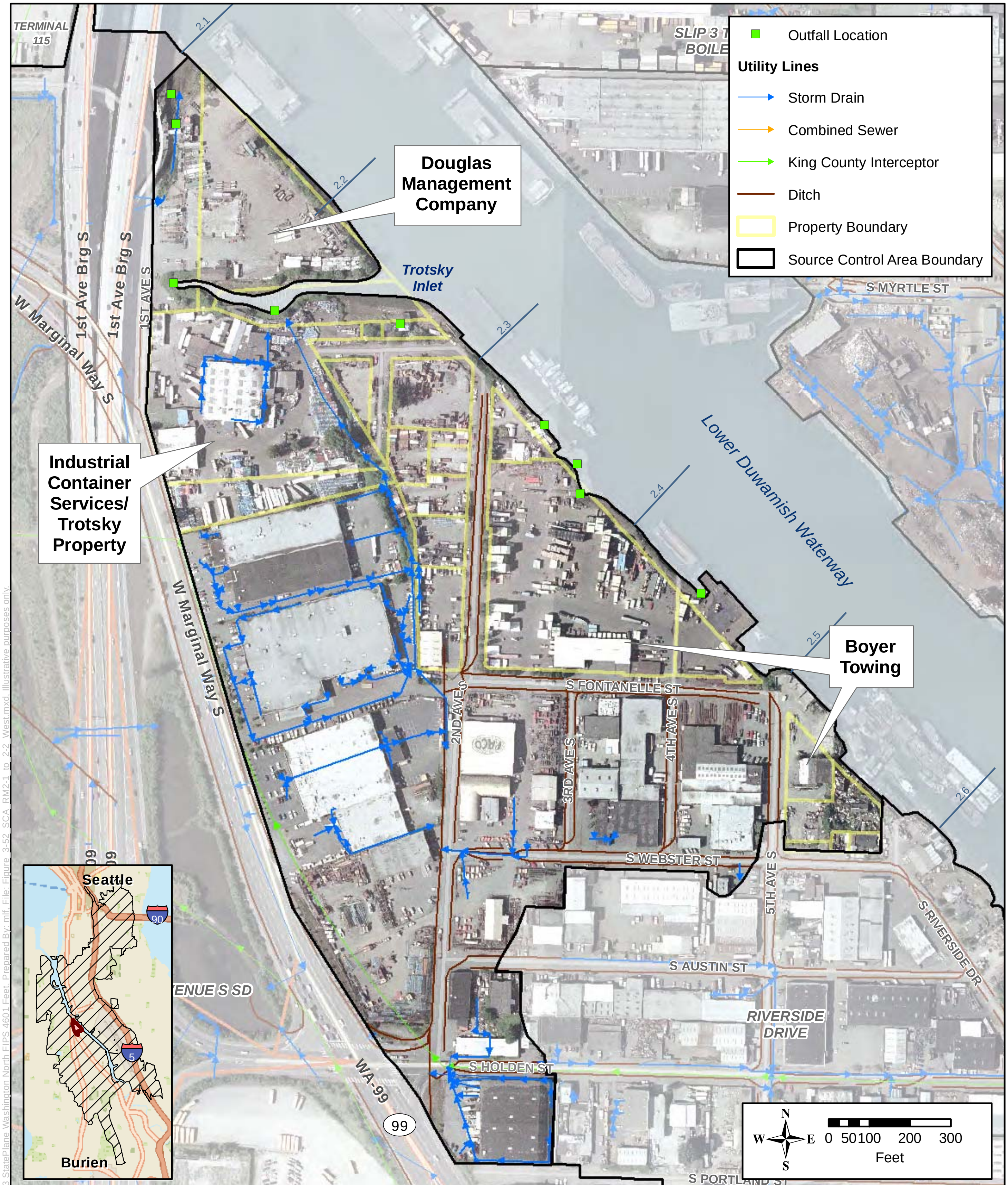

Figure 5–1. Early Action Area 2: RM 2.1-2.2 West (Trotsky Inlet)

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 I-5 SD, KCIA SD#3, and Georgetown Flume drainage basins. Action items for this source control area are listed in Table 3-2.

Location	RM 2.8 East
Chemicals of Concern	PCBs, phthalates, PAHs, metals
Data Gaps Evaluations	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) North Boeing Field/Georgetown Steam Plant: February 2007 (SAIC 2007c, SAIC 2009d)
SCAP	July 2006 (Ecology 2006); Slip 4 Status Report – February 2007 (SAIC 2007d); Slip 4 Interim Source Control Status Report – March 2011 (Ecology 2011d)

On October 3, 2011, the City of Seattle started cleaning up the contaminated sediments and banks of Slip 4. With EPA oversight, the city's contractor dredged and removed contaminated sediments, including the eroding banks, and placed engineered caps of clean sand and gravel over the remaining sediments. An aging pier was demolished, two beaches were created, and more shallow-water areas were created to improve habitat in Slip 4. This work is scheduled to be complete in mid-February 2012 (City of Seattle 2011).

6.1 Business Inspections

- SPU continued a total of five business inspections at three facilities in the Slip 4 basin during the current reporting period, including two initial inspections and three follow-up inspections (Appendix B). All facilities were in compliance as of December 2011.
- Ecology conducted 12 inspections at 10 facilities in the Slip 4 source control area during the current reporting period (Appendix C).
  - A complaint investigation of turbid water flowing from the KCIA lift station was conducted, but no source was identified.
  - Coverage under the ISGP was issued to First Student's 8th Avenue Terminals facility in March 2011.
  - Organic Fuel Processors, also located at the 8th Avenue Terminals property, is covered under the ISGP at the former Alaska Logistics site. Organic Fuel Processors has requested a time extension to install Level 3 stormwater treatment at this location.
- KCIA's ISGP was reissued to include the entire airport; it had previously covered only the King County Maintenance Facility. No permit compliance inspections have been conducted at KCIA since the permit was reissued. The facility had been referred to EPA, but it reverted to Ecology oversight due to citizen lawsuit involvement. Ecology

considers this facility a high priority to assess whether additional parameters should be monitored.

6.2 Source Tracing

- Boeing and SPU have been sampling sediment traps in the Slip 4 storm drains since 2005.[5] Boeing has collected 83 sediment trap samples from seven sediment traps located on Boeing-leased property at NBF, and SPU has collected 20 samples from two sediment traps located on the northern portion of KCIA and 10 samples from one sediment trap in the I-5 SD. During the current reporting period, samples were collected in April 2011.
- While generally decreasing over time, PCB concentrations in all sediment traps except T3A and T6 remain at concentrations above the LAET for impacts to sediment (0.13 mg/kg DW).

Sediment Trap Location	Range of All PCB Conc'ns (mg/kg DW)	Most Recent PCB Conc'n (mg/kg DW)
Sample Dates	2005–2010	April 2011
T1 (Downstream end of north and north-central lateral SD)	0.68 – 420	4.0
T2 (Downstream end of south lateral SD)	0.010 – 1.46	0.68
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	0.55
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	0.77
T4A (Upstream of NBF on the north-central lateral SD)	<0.011 – 5.60	0.15
T5 (Downstream end of north lateral SD)	2.1 – 800	4.0
T5A (Upstream of NBF on the north lateral SD)	0.086 – 0.67	0.33
T6 (I-5 SD)	<0.019 – 7.8	0.061*

*Most recent sample was collected in October 2009.

- To date, SPU has collected nine in-line solids samples and one onsite catch basin sample in the NBF/northern KCIA storm drain basin that discharges at KCIA SD#3/PS44 EOF. No samples were collected by SPU from this basin during the current reporting period.

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[5] 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.

- To date, SPU has collected one in-line solids sample, three onsite catch basin samples, and three right-of-way catch basin samples in the I-5 SD. No samples were 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 inspected the new GTSP storm drain in 2010, but there was not enough material present in the system to allow sampling.
- Chemicals detected at concentrations above storm drain screening levels during previous reporting periods are identified below in the shaded cells; no samples were collected during the current reporting period. 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	Bis(2-ethylhexyl)phthalate	●			
	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				

Chemical Class	Chemical	Sediment Traps (SPU and Boeing)	In-line Solids (SPU)	Onsite CB Solids (SPU)	Right-of-Way CB Solids (SPU)
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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

6.3 Facility-Specific Source Control Actions

Crowley Marine Services / 8th Avenue Terminals

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

Ecology and 8th 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 was effective on October 12, 2009 (Ecology 2009k).

- Crowley Marine Services submitted a draft final RI/FS Work Plan to Ecology in December 2010. Ecology and Crowley Marine Services are negotiating the content of the RI. Ecology expects to receive a final draft RI/FS Work Plan, Sampling and Analysis Plan, and Quality Assurance Project Plan in March 2012.
- While conducting work to address compliance issues, 8th Avenue Terminals determined that it may be necessary to install a new outfall line into the head of Slip 4. A collapsed line appears to exist in this area, which formerly drained the northern portion of the property. 8th Avenue Terminals is in discussions with the City of Seattle to determine if a new line can be installed, and to design it to fit within the Slip 4 sediment removal action. At this time, Crowley has not yet completed the new design for the system. The city required 8th Avenue Terminals to locate the former outfall line by July 1, 2011, and demonstrate that the old outfalls are isolated and there are no unpermitted connections. The final design will be required to meet Seattle and Washington State discharge requirements (Seattle City Attorney 2010).

King County International Airport

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

- KCIA updated its Stormwater Pollution Prevention Plan (SWPPP) to cover the industrial activity areas of the airport. This includes stormwater monitoring of four discharge points on East Marginal Way S. Stormwater monitoring at the four discharge points was initiated during the first quarter of 2011.
- On November 19, 2010, Ecology recommended that an environmental investigation be conducted at the northern area of KCIA. The purpose of the investigation would be to assess whether this area represents a source for the groundwater trichloroethylene (TCE) concentrations found in groundwater monitoring well GTSP-1 on the GTSP property. Ecology also recommended that the investigation provide an assessment of PCBs south of the southeastern corner of the GTSP (SAIC 2010c).
- KCIA submitted a *TCE Investigation Work Plan* to Ecology in February 2011 (URS 2011a). A soil and groundwater investigation was performed in March 2011. Three permanent groundwater monitoring wells were installed. A second round of groundwater monitoring was performed in June 2011. Soil and groundwater samples were analyzed for PCBs, PAHs, volatile organic compounds (VOCs), metals, and petroleum hydrocarbons (URS 2011b).
    - In soil, PAHs and arsenic concentrations exceeded MTCA Method A or B cleanup levels. PCBs, petroleum hydrocarbons, and other metals were detected at concentrations below MTCA Method A or B cleanup levels. VOCs were not detected.
    - In groundwater, TCE and tetrachloroethene (PCE) were detected in all three wells; TCE concentrations exceeded the MTCA Method B cleanup level in well KCIA-MW-3 during the March and June 2011 sampling events. Arsenic concentrations exceeded the MTCA Method B cleanup level in all three wells during June 2011; concentrations of barium, cadmium, chromium, and mercury were below MTCA cleanup levels. PAHs were detected in well KCIA-MW-1 during the March 2011 sampling event but were not detected in June 2011. PCBs and petroleum hydrocarbons were not detected.
- In June 2011, KCIA provided Ecology with a *2011 Source Control Report*. The report provided updates and results of source control and source tracing activities that occurred at KCIA since June 2006. A revision was provided to Ecology in October 2011 (KCIA 2011a). The source tracing and source control activities completed by KCIA included the following (KCIA 2011a):

- In November 2009, King County collected solids samples from five storm drain structures upstream of Vault 1541 and Vault 1680. Laboratory analyses indicated the presence of PCBs, HPAHs, LPAHs, metals, phthalates, and TPH.
- In November 2009, KCIA reviewed airport and tenant BMP implementation and found it to be adequate.
- In June 2010, KCIA cleaned catch basins, manholes, and other structures within the Slip 4 drainage basin due to high levels of HPAH, BEHP, copper, and zinc in some of the catch basin solids.
- In April 2011, KCIA sampled a soil stockpile at the KCIA Maintenance Shop and surrounding catch basins, one catch basin at the Washington Air National Guard site, and Vaults 1541 and 1640 for PCBs. PCBs were detected in the samples from the soil pile and the storm drain structures. In May, KCIA removed and properly disposed of the soil pile.

- In August 2011, KCIA performed cleaning and video inspection at the Airport's north drain line. Storm drains on the east side of the airport property appeared to be in good condition. Evidence of groundwater infiltration was observed in storm drains on the west side of the airport property, east of the GTSP. Some blocked or collapsed storm drains were found north of the GTSP (KCIA 2011b).

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.

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

Source control activities conducted at the NBF-GTSP site since publication of the August 2011 Source Control Status Report are listed below.

Dates	Activity	Description
September 2010	Short-Term Stormwater Treatment at NBF	Boeing completed construction and began operation of a short-term stormwater treatment system at NBF on September 15, 2010. The treatment system was designed to treat the majority of stormwater flows from the North Lateral Storm Drain for PCBs.
September – October 2010	North Lateral Storm Drain Video Inspection Summary	Boeing evaluated the results of the August 2010 video inspection of the North Lateral Storm Drain and prepared a summary report. The report identified storm drain lines in good condition and those in poor condition with fractures, holes, breaks, and evidence of soil or groundwater infiltration (Landau 2010a).
September 2010 – January 2011	Storm Drain System Video Inspection Summary	Boeing evaluated the results of video inspections of the North Central, South Central, South, Parking Lot Area, and Building 3-380 lateral drainage systems at NBF and prepared a summary report. The report identified storm drain lines in good condition and those in poor condition with fractures, holes, breaks, and evidence of soil or groundwater infiltration (Landau 2011a).
October 2010	PCB Paint Abatement Activities	Boeing performed PCB paint abatement activities at NBF during October 2010. Paint was sampled at 14 bollard structures and 1 equipment support structure. Paint was removed from 7 structures with PCB-contaminated paint (Landau 2010b).
October – November 2010	PCB Soil Excavation and Storm Drain Replacement Activities	Boeing excavated approximately 100 cubic yards of PCB-contaminated soil on the east side of Building 3-302. Storm drain replacement activities were conducted east, north, and west of Building 3-302 and north and west of Building 3-323. Two catch basins were decommissioned and replaced (Landau 2010c).
November 2010	TSCA Material Removal	Boeing removed PCB-contaminated window caulk from Building 3-326 and black foam squares from the base of Building 3-626 at NBF (Landau 2010d).
November 2010 – April 2011	NBF Stormwater Sampling	Ecology collected whole water and filtered solids samples during nine storm events and two base flow events. The data report will be available in 2012.
February 2011	Assessment of Infiltration and Inflow into the NBF Storm Drain System	Ecology completed an assessment of infiltration and inflow into the storm drain system at NBF. The report indicated that metals, PCBs, and other organic contaminants had been detected in storm drain solids in the lateral drainage systems at NBF. Potential sources of inflow included contaminated concrete joint materials (caulk), building materials, and surface debris. The report identified areas of potential infiltration as having contaminated soil or groundwater near areas of damaged storm drain lines (SAIC 2011a).
February 2011	Storm Drain System Video Inspection Summary	Boeing prepared an additional report regarding video inspection of the storm drain lines at NBF. This report added information about undocumented tap connections into the storm drain lines (Landau 2011b).

Dates	Activity	Description
March 2011	LDW Slip 4 interim Source Control Status Report	Ecology prepared the Lower Duwamish Waterway Slip 4 Interim Source Control Status Report. The report indicated that the potential for recontamination of Slip 4 following cleanup would be minimized by addressing remaining high priority source control actions, implementing long-term stormwater treatment, and addressing remaining uncertainties regarding potential contaminant sources and contaminants other than PCBs (Ecology 2011d).
March 2011	PEL Soil and Groundwater Investigation	Boeing issued a report on soil and groundwater investigations performed in September 2010 and January 2011 in the Propulsion Engineering Laboratory (PEL) area of NBF. Elevated concentrations of PCBs were found in soil and groundwater near Building 3-333 and the GTSP fence line (Landau 2011c).
April 2011	GTSP 2010 Site Characterization	The City of Seattle issued a data report on soil and groundwater sampling and testing at GTSP. Elevated concentrations of PCBs in soil and groundwater were found primarily in the southern portion of the property (Integral 2011a).
June 2011	GTSP Interim Action Work Plans	Boeing and the City of Seattle prepared work plans for excavation of contaminated soil in the southern area of the vicinity of the GTSP property and near the southeast and southwest fence lines. An estimated 7,000 cubic yards of soil were planned for excavation and disposal (Landau 2011d and Integral 2011b).
June 2011	Building 3-333 Interim Action Work Plan	Boeing prepared a work plan for excavation of contaminated soil near Building 3-333. An estimated 200 cubic yards of soil were planned for excavation and disposal (Landau 2011e).
March – June 2011	Bed Load Sampling and Analysis	Boeing prepared a report documenting bed load sampling and testing conducted from March to May 2011 in the NBF storm drain system. The results of this analysis indicated that sediment trap and filtered solids sampling is adequate to evaluate PCB concentrations in storm drain solids (Landau 2011f).
December 2010 and July 2011	Willow Street Substation Soil Removal	The City of Seattle issued a report documenting removal of contaminated soil at the Willow Street Substation in December 2010. Approximately 3 tons of PCB-contaminated soil were removed and disposed. Confirmation sampling indicated that some soils with PCB concentrations greater than 1 mg/kg remain on the substation property (Herrera 2011).
August – November 2011	NBF Paint Abatement Activities	Boeing conducted paint abatement activities at NBF for structures with paint containing concentrations of PCBs greater than or equal to 50 mg/kg and for structures with paint in poor condition that has PCB concentrations less than 50 mg/kg. Paint was removed from hydrants, bollards, engine compartment tanks, air tanks, support beams, and other structures. The report documenting these activities will be available in 2012.

Dates	Activity	Description
August – December 2011	GTSP Fence Line Interim Action	Boeing and the City of Seattle began work on the NBF-GTSP fence line interim action on August 25, 2011. Work involved excavation and disposal of approximately 8,000 cubic yards of soil contaminated with PCBs, petroleum hydrocarbons, and metals. Most of the excavation work was completed by the end of December 2011.
October 2011	NBF Building 3-333 Interim Action	In October 2011 Boeing excavated and disposed of PCB-contaminated soil adjacent to the 3-333 Building at NBF. Approximately 200 cubic yards of PCB-contaminated soil was excavated and disposed. The report detailing these activities will be available in 2012.
October – December 2011	Stormwater Sampling at NBF	Ecology began stormwater sampling at NBF for the 2011 wet season in October 2011. Stormwater sampling was limited to locations in the northern portion of the site because other monitoring stations had not yet been established.
October 2011	NBF Long-Term Stormwater Treatment	Boeing began operation of a long-term stormwater treatment system at NBF in late October 2011. The system is designed to treat PCBs in stormwater. The system is treating all of the stormwater from the North Storm Drain Lateral and most of the stormwater from the other storm drain laterals.
August – November 2011	NBF Concrete Joint Material Removal	Boeing issued a report documenting the removal of additional concrete joint material at NBF from August to September 2011. Removal efforts focused on joint material with PCB concentrations equal to or greater than 50 mg/kg. Approximately 5,725 linear feet of joint material was removed from the NBF Flight Line area (Landau 2011h).

- Additional activities in progress as of December 2011 include the following:
  - Stormwater monitoring at NBF will continue into spring 2012. Monitoring stations will be located in the northern portion of the site and at upstream and downstream locations on the NBF Flight Line.
  - The GTSP interim action area will be winterized in early 2012 to minimize erosion. The interim action will be completed in spring 2012 when seeding and landscaping activities occur.
  - Boeing will continue to sample and test paint and other building materials. PCB paint abatement activities will resume during the 2012 dry season.
  - Ecology will be issuing the draft work plan for the NBF-GTSP site RI/FS in spring 2012. The work plan will be finalized and fieldwork will begin in mid- to late 2012.

Other Sites:

Show Quality Metal Finishing

- Ecology and EPA were concerned that sheet flow from Show Metal Quality Finishing was entering a catch basin that drains to NBF. In April 2008, SPU inspected Show Quality Metal Finishing. The company did not have an NPDES permit. At that time, SPU found very high copper concentrations in the catch basin solids samples (5,660 and 6,320 mg/kg). PCB concentrations were relatively low (0.27 and 0.47 µg/kg DW). According to its website, Show Quality Metal Finishing moved to 9585 8th Avenue S in South Park in January 2010. In early 2011, Ecology and King County attempted to inspect Show Quality Metal Finishing at the 9585 9th Avenue S location but were denied access (Gray 2011).
- On June 2, 2011, SPU and Ecology went to 1115 S Elizabeth Street and confirmed that Show Quality Metals does not occupy space at that location. Ecology and/or SPU are planning to return to conduct a source control inspection at that location (Wright 2011).

Former Boeing Electronics Manufacturing Facility

- Boeing prepared a *Data Gaps Sampling Work Plan* for the Electronics Manufacturing Facility (EMF) site in September 2010 (Calibre 2010). The work plan described planned collection of data to address data gaps in historical site characterization. Planned activities included installation of geoprobe borings and collection of groundwater samples. Work was expected to be completed in 2011.

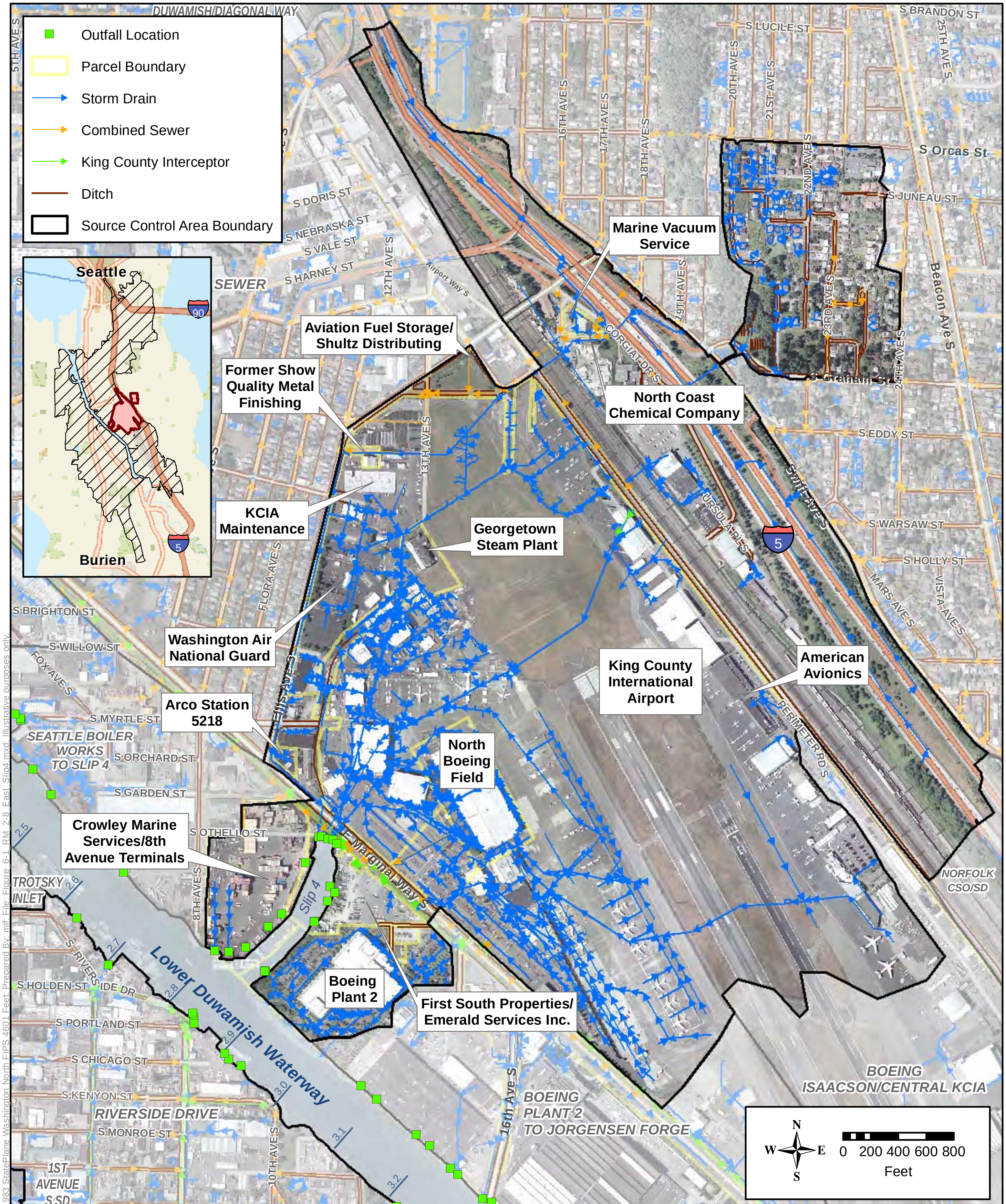

Figure 6–1. Early Action Area 3: RM 2.8 East (Slip 4)

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.

DEPARTMENT OF ECOLOGY State of Washington

SAIC From Science to Solutions

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, from the 16th Avenue S outfall, and from those portions of central KCIA that discharge through the KCIA-Jorgensen SD. Action items for this source control area are listed in Table 3-2.

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

7.1 Business Inspections

- Ecology conducted one inspection each at Airgas Norpac and Boeing Plant 2 during the current reporting period (Appendix C).

7.2 Source Tracing

- SPU has collected two sediment trap samples in the KCIA-Jorgensen SD line; these were analyzed for PCBs only because there was not enough material in the trap to analyze for other parameters. In addition, SPU has collected one in-line solids sample in this line. No samples were collected during the current reporting period.
- SPU has collected six in-line solids samples and two right-of-way catch basin samples (RCB207, RCB208) in the 16th Avenue S SD basin. No samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels during previous reporting periods are identified below in the shaded cells. 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	NA		
	Zinc	NA		
PCBs	PCBs, total			
Phthalates	Bis(2-ethylhexyl)phthalate	NA		
	Butylbenzylphthalate	NA		
	Dimethylphthalate	NA		
Other SVOCs	2-Methylphenol	NA		
	Benzoic acid	NA		

Chemical Class	Chemical	Sediment Traps	In-line Solids	Right-of-Way CB Solids
	Benzyl alcohol	NA		
	Phenol	NA		
TPH	TPH-oil	NA		

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2011).

NA = not analyzed.

7.3 Facility-Specific Source Control Actions

Boeing Plant 2

Current Operations	Airplane parts manufacturing
Historical Operations	Same
Address	7755 East Marginal Way S, Seattle 98108
Facility/Site ID	2100 (Boeing Plant 2)
Chemicals of Concern	VOCs, PCBs, PAHs, metals, petroleum hydrocarbons
Media Affected	Groundwater, stormwater, soil, air, sediment

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 September 2010, Boeing completed the removal of caulk materials containing PCBs at concentrations above 25 mg/kg in the concrete pavements in the 2-10 Area at the Plant 2 facility. The purpose of this interim measure was to determine and map the locations of concrete joint caulk materials containing PCB concentrations above 1 mg/kg, and to remove the caulk materials containing PCB concentrations above 25 mg/kg. The removal of materials containing PCB concentrations above 25 mg/kg was conducted as a source control measure to prevent the migration of these materials to the LDW. In August and September 2010, Boeing removed approximately 1,545 linear feet of caulk containing PCB concentrations above 25 mg/kg PCBs from the concrete joints in the 2-10 Area of Plant 2 (Golder Associates 2010a).

- In September 2010, EPA approved the Interim Measures Work Plan for the 2010 Soil and Stormwater Management Demolition of Buildings 2-44 and 2-49. Boeing modified the work plan to reflect the draft soil and groundwater target media cleanup levels developed by EPA. The modified work plan was approved by EPA in December 2010. In December 2010, Boeing also submitted an addendum to the approved Interim Measure work plan. Boeing intended to demolish and remove the 2-40s series buildings and the 2-60s/2-66 area concrete slabs at Plant 2 between December 2010 and December 2011. The demolition was planned as part of Boeing's overall redevelopment of the 2-40s and 2-60s/2-66 Areas of Plant 2. The Addendum to the Interim Measure Work Plan summarizes the management of concrete that Boeing will implement during the demolition of the buildings and foundations (Golder Associates 2010b).

- On April 27, 2011, EPA held a public meeting to explain the proposed sediment cleanup alternatives for the contaminated sediments adjacent to Boeing Plant 2, which were identified in the Sediments Statement of Basis (USEPA 2011a). At the meeting, EPA also solicited public comments (USEPA 2011b). After public review and comment, EPA will choose a sediment cleanup plan. EPA plans to propose cleanup alternatives for the upland soils and groundwater in the Uplands Statement of Basis in 2012 (USEPA 2011c).
- 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. EPA selected the following preferred alternatives described in the Statement of Basis: North 2 (N2) for the northern area, and South 4 (S4) for the southern area, along with the single alternatives developed for the other much smaller sediment areas. The public had an opportunity to comment on the proposed sediments corrective action in the Statement of Basis from March 28 through May 29, 2011. The comments and EPA responses are contained in the Final Decisions and Response to Comments for Boeing Plant 2 Sediments (USEPA 2011g).

Jorgensen Forge

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).

Current Operations	Manufacture of steel forgings and rolled aluminum rings; processing of nickel, titanium, and specialized alloys
Historical Operations	Manufacture of structural steel, tractors, and road equipment; prefabricated steel cutting and distribution
Address	8531 East Marginal Way S, Seattle 98108
Facility/Site ID	2382 (Jorgensen Forge Corp) 36575469 (Jorgensen Forge Area 3 Gasoline)
Chemicals of Concern	Metals, PCBs, petroleum hydrocarbons, non-halogenated solvents
Media Affected	Soil, groundwater

<u>Source Control</u>

- In October 2011, Ecology entered into negotiations with Jorgensen Forge Corporation for a new Agreed Order. The new order will provide for work not included in the previous Agreed Order, including stormwater source control and other activities, and will require a draft CAP (Ecology 2011s).
- On July 7, 2010, Ecology conducted a site visit to assess progress toward implementation of the numerous items noted in the November 5, 2009, compliance inspection report. Progress had been made implementing BMPs, including removal of a pressure wash station, covering of all bins and dumpsters, and moving scrap metals piles on the north side of the facility under cover. In August 2011, Ecology’s Water Quality Program issued Administrative Order No. 8682, requiring treatment to address benchmark exceedances. Treatment is scheduled to be installed by the end of 2012.

<u>Contaminated Sediments and Bank Soils</u>

- EPA issued an Action Memorandum for the Jorgensen Forge Outfall Site on September 30, 2010, to request and document approval of a selected Time-Critical Removal Action for the Jorgensen Forge Outfall Site. The removal action was conducted by Boeing and the Jorgensen Forge Corporation and consisted of cleaning and closure of existing 15- and 24-inch public lateral storm drain pipes. This removal action is documented in the *Source Control Action Completion Report* submitted to EPA in May 2011.
- A Final Engineering Evaluation/Cost Analysis (EE/CA) was submitted to EPA in March 2011 on behalf of Jorgensen Forge. On June 16, 2011, EPA held a public meeting to present the EE/CA for Jorgensen Forge, which described the cleanup options evaluated for the sediments and shoreline soils along 1.6 acres adjacent to Jorgensen Forge.
- A *Revised Final Engineering Evaluation/Cost Analysis* was submitted to EPA in October 2011 for a removal action of contaminated sediments and associated bank soils within the removal action boundary. A Biological Assessment and a Clean Water Act Evaluation were included in the EE/CA (Anchor QEA 2011a).
- In December 2011, EPA sent Jorgensen Forge a draft Administrative Settlement Agreement, Order on Consent, and Statement of Work for the Jorgensen Forge Early Action Area Non-Time Critical Removal Action Implementation (USEPA 2011h, USEPA 2011d).

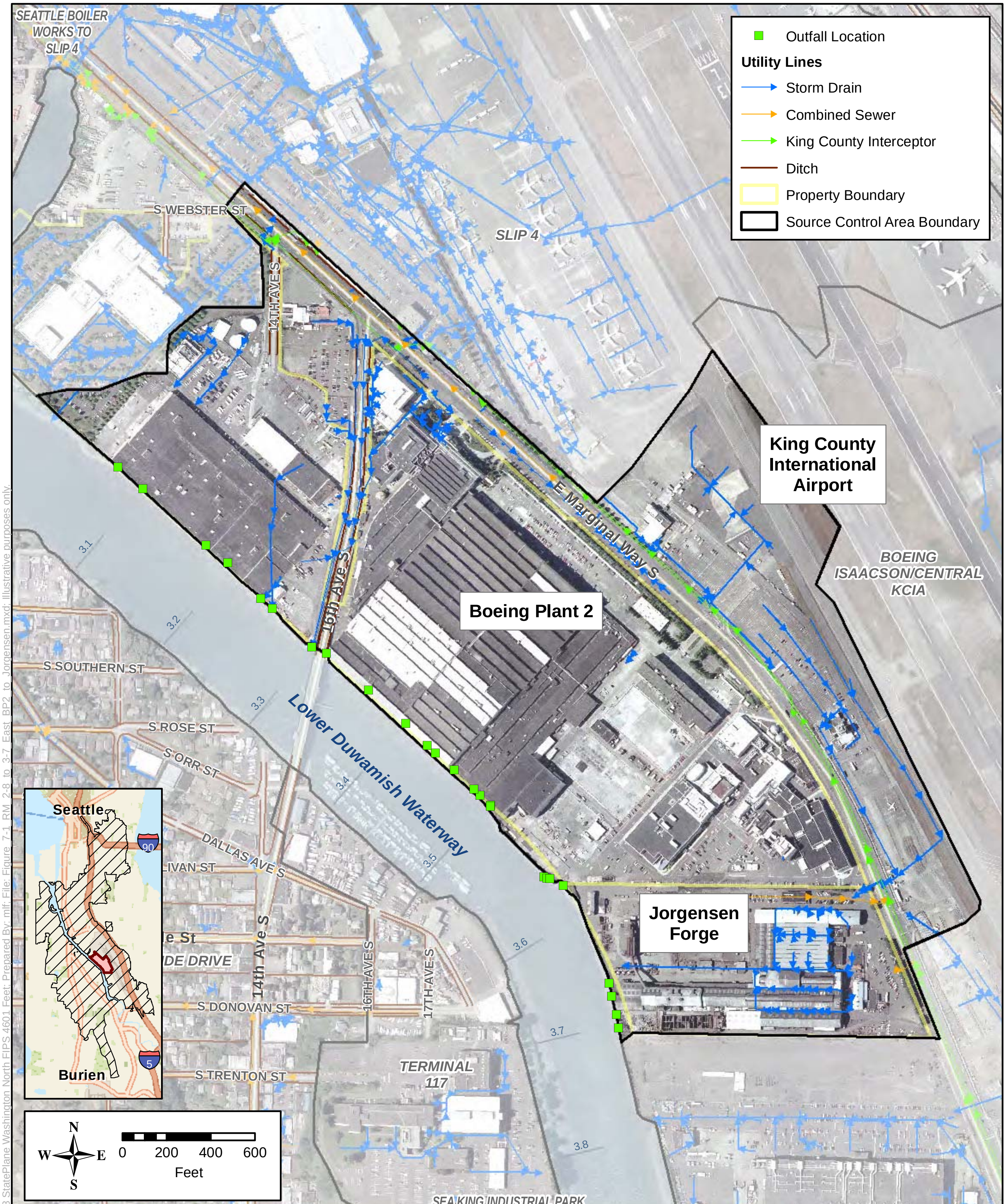

Figure 7–1. Early Action Area 4:
RM 2.8-3.7 East (Boeing Plant 2 to Jorgensen Forge)

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Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet; Prepared By: mlf; 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. Action items for this source control area are listed in Table 3-2.

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

8.1 Business Inspections

- Ecology conducted 10 source control business inspections at two facilities (Boeing South Park and South Park Bridge) during the current reporting period (Appendix C). A request by Boeing South Park to terminate coverage under the ISGP was denied in November 2010. Nine construction stormwater compliance inspections were conducted at the South Park Bridge between July 5 and December 20, 2011.

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) and nine right-of-way catch basin samples (two discharging to the separated storm drain system and seven discharging to the combined sewer system) within this source control area. No samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels during previous reporting periods are identified below. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Onsite CB Solids	Right-of-Way CB Solids
Metals	Lead		
	Mercury		
	Zinc		
PCBs	PCBs, total		
PAHs	LPAH		
	HPAH		
Phthalates	Bis(2-ethylhexyl)phthalate		
	Butylbenzylphthalate		
	Diethylphthalate		
	Dimethylphthalate		
Other SVOCs	2-Methylnaphthalene		

Chemical Class	Chemical	Onsite CB Solids	Right-of-Way CB Solids
	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 2011).

8.3 Facility-Specific Source Control Actions

Terminal 117 and Adjacent Streets

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

- In January 2011, the Port of Seattle submitted their semiannual Operations and Maintenance report for the period July through December 2010. This report meets the routine report requirements described in the Operations and Maintenance Plan for the Terminal 117 time-critical removal action (Sealaska Environmental Services 2011).
- On February 15, 2011, the Port of Seattle conducted targeted bulk sampling of the exterior of buildings and asphalt sealant at Terminal 117. The site was assessed for suspected PCB-containing building materials and asphalt sealants. The sampling included the North Building, Office/Carport, South Building, and asphalt sealants on the pavement and Ecology blocks. PCBs were detected in 11 of the 20 samples, with concentrations ranging from 0.95 to 34.5 mg/kg. Materials containing PCBs included wood fascia, shiplath siding, window frame caulking, caulking with residual asphaltic paper, paint, roofing materials, and asphalt sealants (Argus Pacific 2011).
- 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 2011f). 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 facility on terminal property, and 10 acres of soil in the nearby streets and residential area (USEPA 2011e).

- In June 2011, the Port of Seattle submitted a *Pre-Design Data Needs Work Plan* for Terminal 117 to EPA. Field work was scheduled to begin in July 2011 (Port of Seattle 2011).

Basin Oil

- On January 15, 2010, Basin Oil and Ecology entered into a Settlement Agreement in which Basin Oil agreed to pay $30,000 to resolve a penalty issued by Ecology on December 4, 2008. On July 5, 2011, Ecology received the final payment for the penalty from Basin Oil (Frare 2011).

Current Operations	Container (drum) storage
Historical Operations	Asphalt production; collection, transport, and marketing of used oil
Address	8661 Dallas Avenue S and 8617 17th Avenue S, Seattle 98108
Facility/Site ID	83476734 (Basin Oil Co Dallas Avenue) 8901731 (Basin Oil Drum Storage 17th Avenue S)
Chemicals of Concern	PCBs, PAHs, metals, petroleum hydrocarbons
Media Affected	Soil, groundwater, stormwater, sediment

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Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure_8-1_RM_3-4_3-8_West_T117.mxd. Illustrative purposes only.

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

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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 two 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. Relevant upland properties in the central KCIA drainage basin are shown in Figure 9-2. Action items for this source control area are listed in Table 3-2.

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

9.1 Business Inspections

- Ecology conducted one business inspection in this source control area (Boeing Thompson) during the current reporting period (Appendix C).

9.2 Source Tracing

- To date, SPU has collected three sediment trap samples, five 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, one sediment trap sample and one in-line solids sample were collected in this drainage basin.
- Sediment trap KCIA2-ST1 contained higher levels of HPAH (83.3 mg/kg DW) than the previous sample collected in 2009 (32.7 mg/kg DW). HPAHs were also high in the inline grab sample collected at this location (17.5 mg/kg DW) (SPU 2011).
- Chemicals detected at concentrations above storm drain screening levels are identified below; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. 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	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Mercury				
	Zinc		●		
PCBs	PCBs, total				
PAHs	LPAH				
	HPAH	●			
Phthalates	Bis(2-ethylhexyl)phthalate				

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
	Butylbenzylphthalate				
	Dimethylphthalate				
Other SVOCs	Dibenzofuran				
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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

9.3 Facility-Specific Source Control Actions

Boeing Isaacson/Thompson

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

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).

- In December 2010, Boeing provided results of sampling of Galbestos siding conducted in September 2010 (Ernst 2010). Samples were collected from one location at Building 14-01. PCBs were detected at 1.3 mg/kg; barium (2 mg/L) and lead (7 mg/L) were detected in TCLP samples.
- In September 2011, Ecology approved an RI/FS Work Plan for the site. The Work Plan summarizes previous environmental investigations and voluntary remedial actions; describes current environmental site conditions and data gaps; and lists proposed groundwater, soil, storm drain, and vapor investigations (Landau 2011g). The RI work started at the site in 2011.

King County International Airport

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

- KCIA completed quarterly compliance monitoring, and will provide a final report to Ecology in 2012. Preliminary results from four quarters of groundwater monitoring have shown no exceedances of MTCA standards for petroleum hydrocarbons.
- In 2010, King County started design/construction of improvements to Taxiway Alpha, which is located primarily within this source control area; a small portion of this project is located within the Slip 4 drainage area (EAA-3). The project included construction of a pump station and water quality vault that will provide basic water quality treatment for this portion of the airport (Bergam 2010). The project also included the repair and replacement of drainage lines. It is expected that these repairs will significantly reduce the infiltration of groundwater into the stormwater system. It is also expected that there will be a reduction of iron bacteria precipitate. Phase II of the project is scheduled to occur in summer 2012, starting with the construction of a water quality vault in April 2012.
- The Taxiway Alpha Rehabilitation Project impacted the scheduled cleaning of catch basins and manholes in the central portion of KCIA. During Phase I of the project, storm drain lines in the central portion were repaired. A resumption of repair and replacement of the storm drain system will occur during Phase II in the summer of 2012. Stormwater lines will be cleaned at the completion of this phase.
- In-line sediment traps were installed at the Airport's discharge point to the KCIA SD#2/PS45 EOF outfall in 2008. The sediment traps were sampled in March 2009 and October 2009, and were resampled in December 2010. Zinc (559 mg/kg), phenanthrene (3.2 mg/kg DW), various HPAH compounds (total HPAH at 32.7 mg/kg DW), and BEHP (3.7 mg/kg DW) were detected at concentrations above the SQS/LAET.
- Sediment trap samples collected in March 2009 indicated a total PCB concentration of 0.057 mg/kg; grab samples showed no detections of PCBs. Sediment trap samples collected in December 2010 indicated a total PCB concentration of 0.018 mg/kg; grab samples showed no detections of PCBs. Sediment samples collected to date have been below the SQS/LAET for PCBs.
- King County is planning to collect solids samples from the pump station primary cell in 2012.

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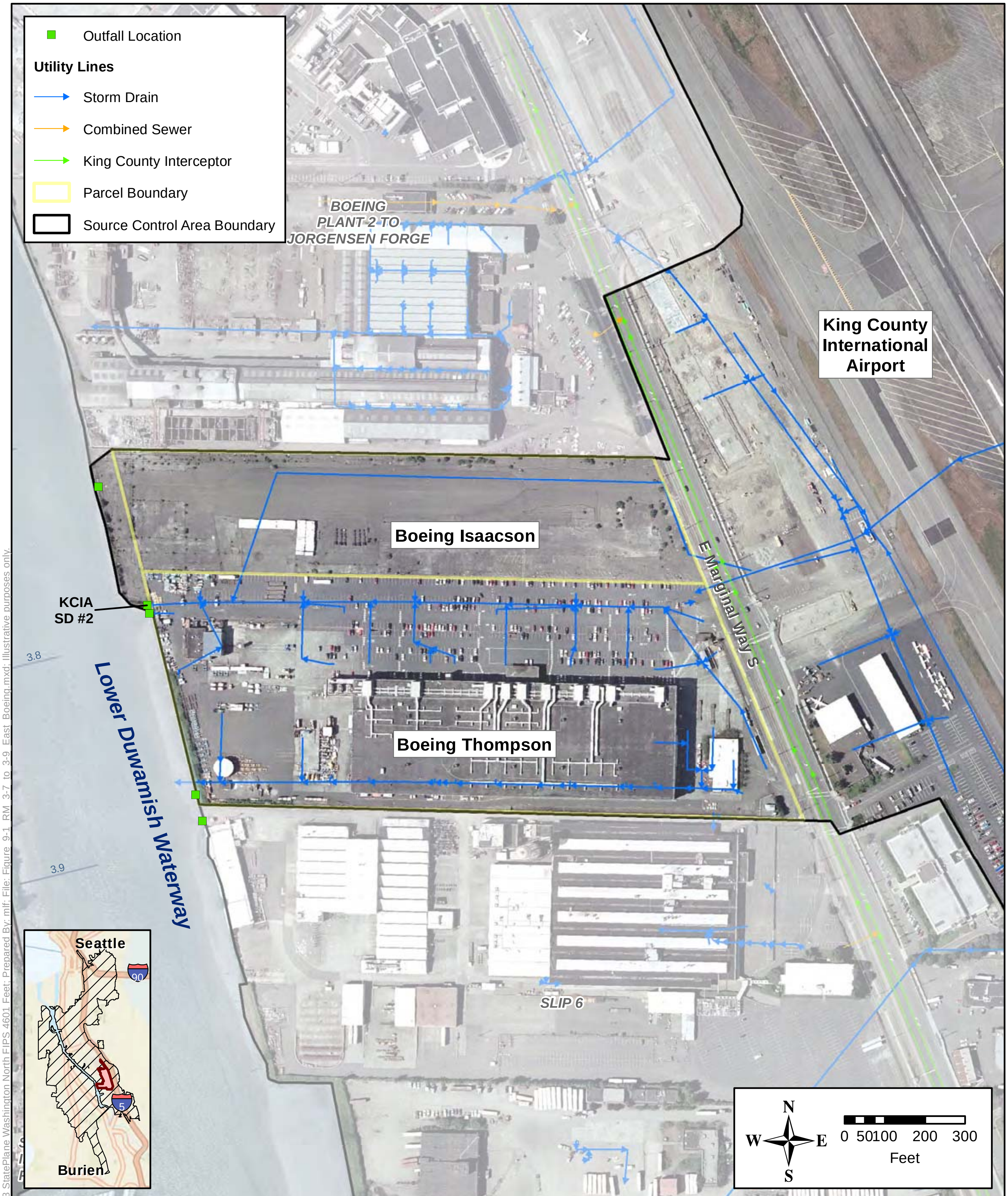

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Figure 9–1. Early Action Area 6: RM 3.7-3.9 East (Boeing Isaacson/Central KCIA) Boeing Thompson and Isaacson Properties

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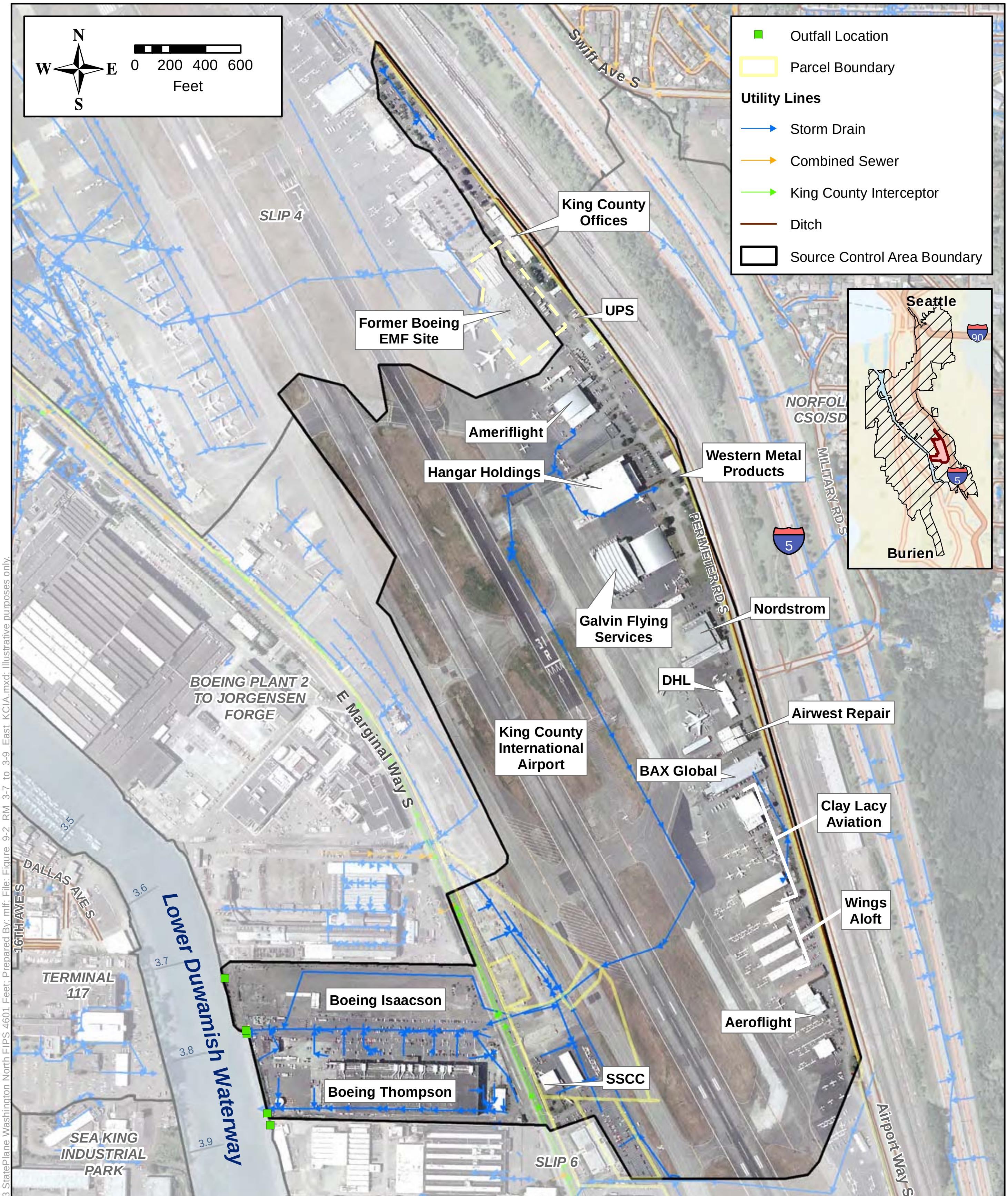

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet; Prepared By: mlf; File: Figure 9-2 RM 3-7 to 3-9 East KCIA.mxd; Illustrative purposes only.

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Figure 9–2. Early Action Area 6: Central KCIA

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10.0 Early Action Area 7 (Norfolk CSO/SD)

The RM 4.9 East (EAA-7; Norfolk CSO/SD) source control area is shown in Figure 10-1; the Norfolk CSO/SD basin is shown in Figure 10-2. Action items for this source control area are listed in Table 3-2.

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

10.1 Business Inspections

- SPU conducted a total of 33 inspections at 15 facilities in the Norfolk CSO/SD/EOF basin during the current reporting period, including three screening visits, 10 initial inspections, and 20 follow-up inspections (Appendix B). One facility (JCM U-Link, Joint Venture) was identified by SPU as not in compliance as of the end of December 2011.
- Ecology conducted a total of 24 inspections at 19 facilities during the current reporting period (Appendix C). Ecology inspectors identified four facilities that needed to apply for coverage under the ISGP. All of these subsequently applied for, and received, a permit: Nelson Trucking, Northwest Gourmet Foods, Special Asphalt Products, and Steeler, Inc.

10.2 Source Tracing

- To date, SPU has collected 20 sediment trap samples, 34 in-line solids samples, eight 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 in-line solids samples, two onsite catch basin samples, and five right-of-way catch basin samples were collected in this drainage basin (Appendix E).
- Chemicals detected at concentrations above storm drain screening levels are identified below; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. 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	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic				
	Copper				
	Lead				
	Zinc			●	
PCBs	PCBs, total		●	●	●
PAHs	LPAH		●	●	●

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
	HPAH		●	●	●
Phthalates	Bis(2-ethylhexyl)phthalate		●	●	●
	Butylbenzylphthalate		●	●	●
	Dimethylphthalate				
	Di-n-butylphthalate			●	
Other SVOCs	2-Methylnaphthalene				
	4-Methylphenol				●
	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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

10.3 Facility-Specific Source Control Actions

Boeing Developmental Center (South Portion)

The southern portion of the BDC is located in this source control area. The central portion of the BDC is discussed in Section 19.

Current Operations	Research and development
Historical Operations	Aircraft manufacturing
Address	9725 East Marginal Way S, Tukwila 98108
Facility/Site ID	4581384 (Boeing Development Center Norfolk) 2101 (Boeing A&M Developmental Center)
Chemicals of Concern	PCBs, metals, solvents, petroleum hydrocarbons, SVOCs
Media Affected	Soil, groundwater, stormwater, sediment

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.

- In 2011 Boeing conducted annual sampling in the south storm drain system at the BDC. The results of the 2011 Annual Sampling Report will be available in 2012.
- The next round of storm drain system sampling is scheduled for fall 2012. The Vortechnics 9000 unit servicing is scheduled to be performed during late summer or fall of 2012.

Boeing Military Flight Center

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

- In November, 2011, Boeing collected a solids sample from an oil/water separator at the Military Flight Center. The sampling results are expected in 2012.
- Boeing prepared a revised SWPPP and Spill Prevention Control and Countermeasures Plans for the Military Flight Center.

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

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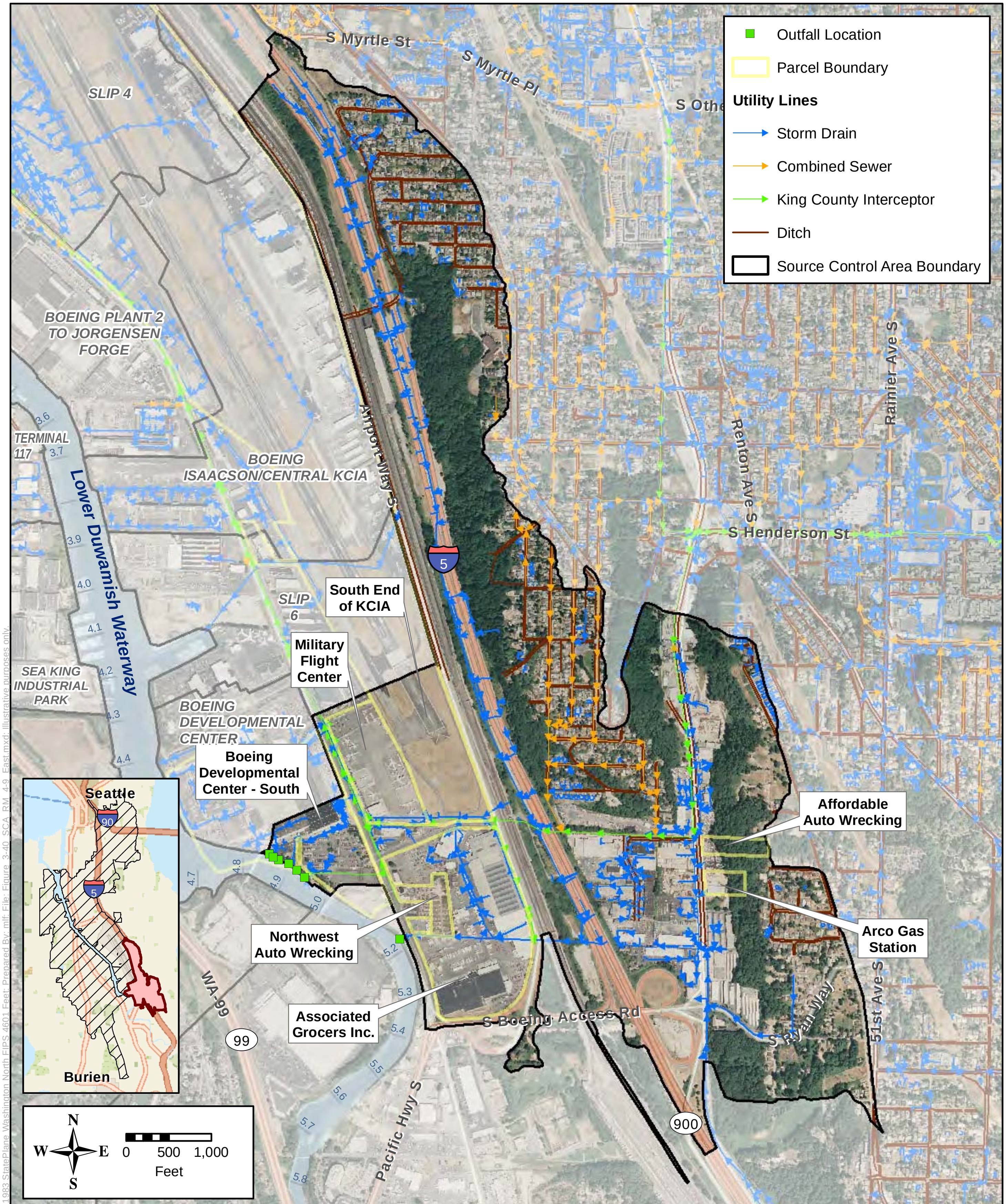

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Figure 10–2. Early Action Area 7: Norfolk CSO/SD

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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. Source control action items for this source control area are listed in Table 3-3.

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

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

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

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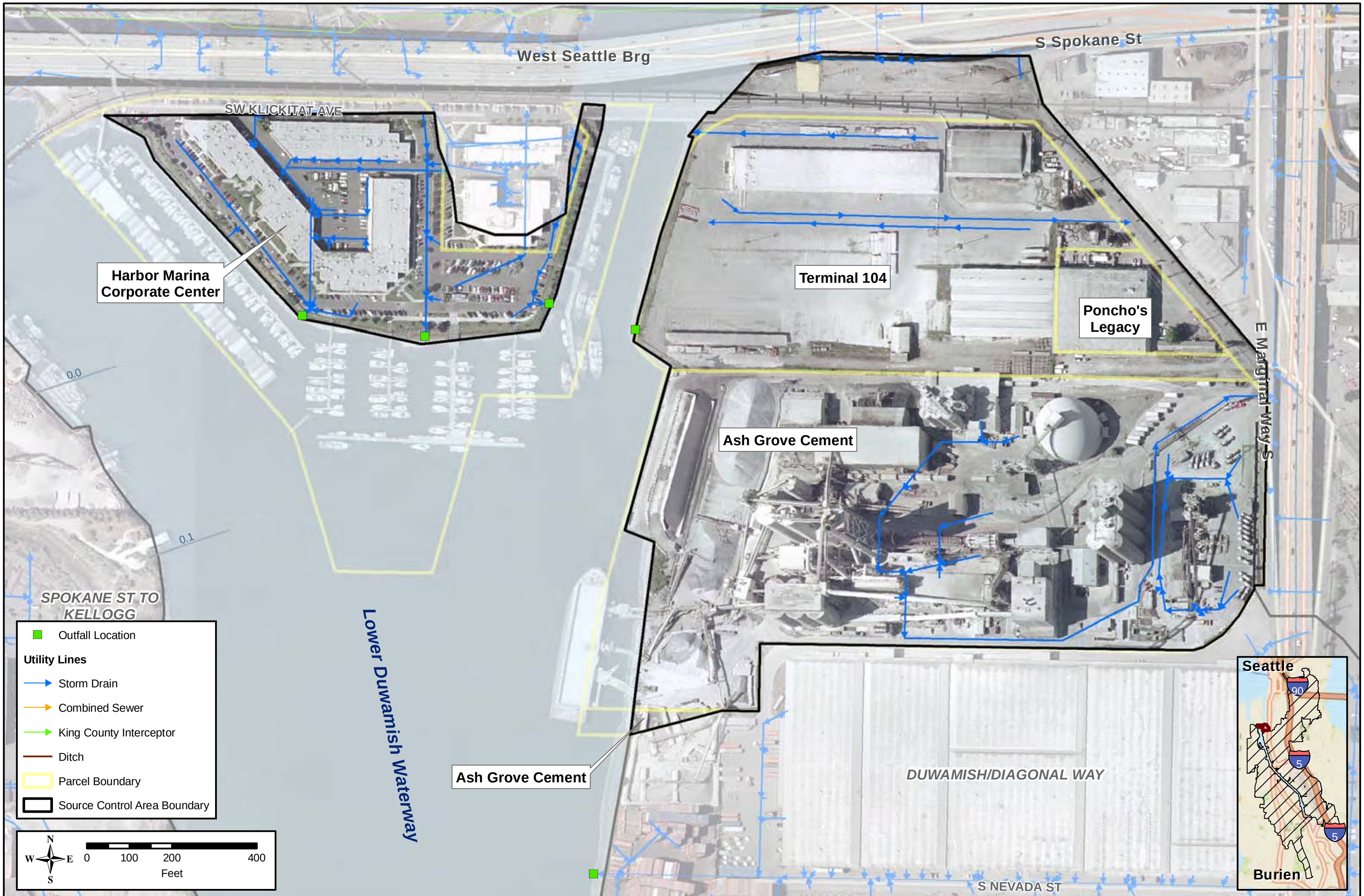

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Figure 11–1. RM 0.0-0.1 East: Spokane Street to Ash Grove Cement Source Control Area

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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. Source control action items for this source control area are listed in Table 3-3.

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

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

- Ecology prepared a *Summary of Existing Information Report* for the former Snopac Products site, located at the head of Slip 1, in January 2011 (Hart Crowser 2011b). The purpose of this report was to evaluate and summarize additional information, beyond that provided in the 2008 Data Gaps Report for the Slip 1 source control area, about current and historical land uses at this property and the potential for contaminant releases to soil and/or groundwater.

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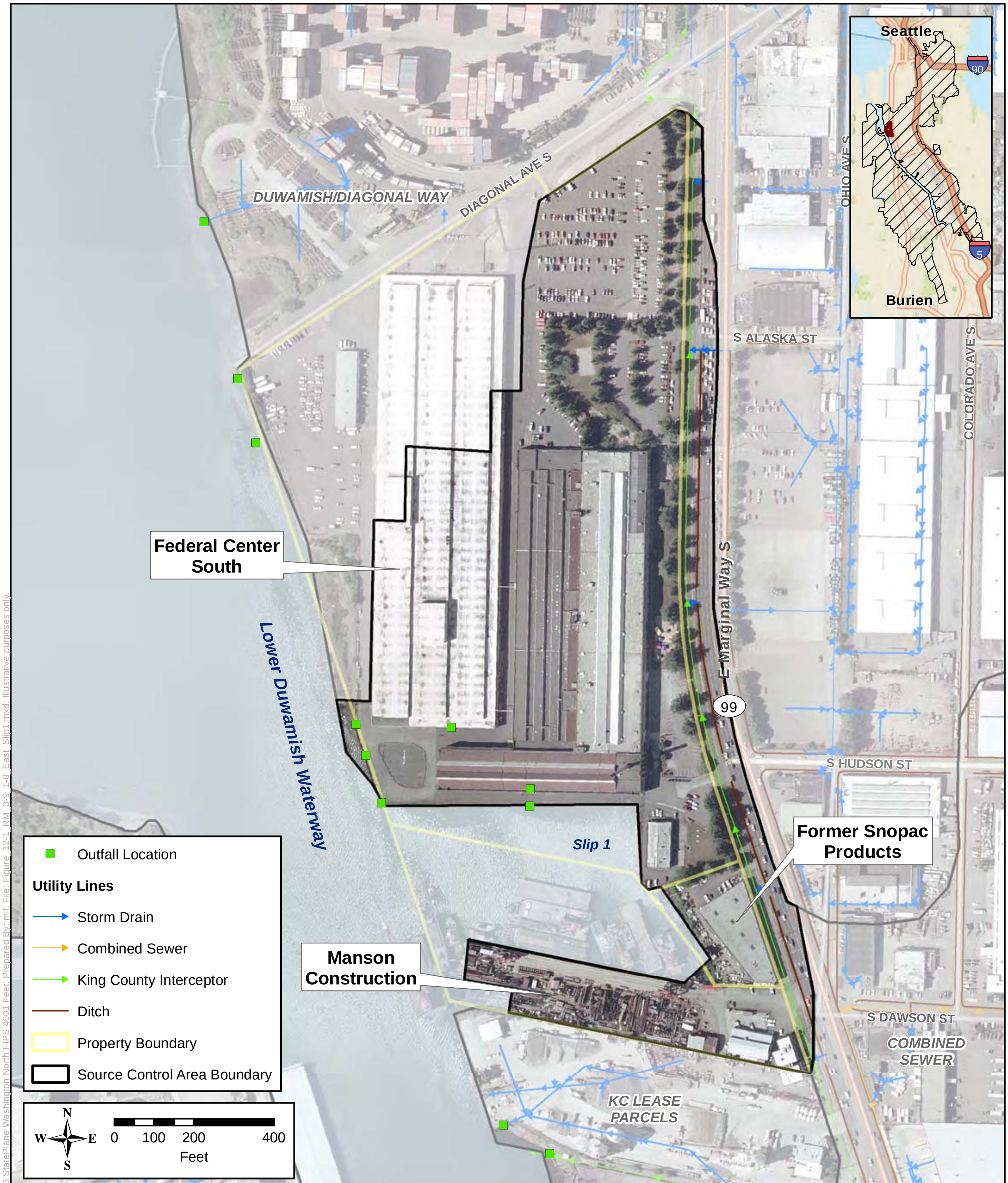

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet; Prepared By: mlf; File: Figure_12-1_RM_0.9_1.0_East_Slip1.mxd; Illustrative purposes only.

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

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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. This source control area includes discharges from the S Brandon Street CSO and stormwater from two other storm drain outfalls within RM 1.0-1.2 East. In addition to properties adjacent to the LDW, this source control area includes 128 facilities that are located within the S Brandon Street basin. A SCAP was finalized for this source control area in January 2011. Action items for the King County Lease Parcels source control area are listed in Table 3-3.

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

13.1 Business Inspections

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

13.2 Source Tracing

- SPU has collected one right-of-way catch basin sample within the S Brandon Street CSO basin. No samples were collected during the current reporting period. Chemicals detected at concentrations above storm drain screening levels during previous reporting periods are identified below in the shaded cells. 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	Bis(2-ethylhexyl)phthalate	
	Butylbenzylphthalate	
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 2011).

13.3 Facility-Specific Source Control Actions

General Electric Aviation

Current Operations	Warehouse, office space
Historical Operations	Manufacture and repair of aircraft parts
Address	220 S Dawson Street
Facility/Site ID	2522
Chemicals of Concern	VOCs
Media Affected	Groundwater, soil, air

From 1959 to 1994, General Electric manufactured and repaired aircraft parts at this property. This facility is located within the S Brandon Street CSO basin.

- Ecology entered into negotiations for a consent decree with the General Electric Company on November 2, 2011. The consent decree will provide for site cleanup and post-cleanup monitoring of groundwater, soil, and indoor air due to releases of contaminants to the environment, and will help prevent future potential migration of contaminants to the LDW (Ecology 2011s).

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf, File: Figure_13-1_RM_1-0_to_1-2_East_KC_Lease.mxd. Illustrative purposes only.

DEPARTMENT OF ECOLOGY State of Washington

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

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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. Source control action items for this source control area are listed in Table 3-3.

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

14.1 Business Inspections

- SPU conducted a total of four business inspections at two facilities with direct stormwater drainage to the LDW (Appendix B), including one initial inspection and three follow-up inspections. Both facilities were in compliance as of December 31, 2011.

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 Street CSO basin; the other upland facilities discussed below are in the S Brandon Street CSO basin.

14.3 Facility-Specific Source Control Actions

CertainTeed Gypsum

Current Operations	Manufacture and recycling of wallboard
Historical Operations	Same as current
Address	5931 East Marginal Way S
Facility/Site ID	2253
Chemicals of Concern	None identified
Media Affected	NA

- On April 9, 2011, a spill of approximately 1 ton of gypsum into the LDW occurred at this property (CertainTeed Gypsum 2011). The spill occurred during a ship unload of gypsum rock when one of the ship's boom skirting panels broke free over the river. The rock line was shut down until the ship's crew repaired the broken section of spill containment on the boom. Actions were identified to prevent this type of incident from occurring in the future.

Burlington Environmental / PSC Environmental Services

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

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 USTs, 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 4th Avenue S, is discussed below. The area west of 4th Avenue S is being investigated by three other PLPs (Art Brass Plating, Blaser Die Casting, and Capital Industries) under separate RI Orders.

The CAP and Agreed Order (DE-7347) for Burlington Environmental were finalized and became effective in May 2010. 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. Activities conducted during the current reporting period are summarized below.

- Burlington Environmental submitted a draft *Engineering Design Report* to Ecology on October 15, 2010. After several revisions, Burlington Environmental submitted the “final full version” of the report to Ecology on September 14, 2011.
- Burlington Environmental submitted a *Fourth Quarter 2010 Progress Report* to Ecology on February 15, 2011. Appendix H of the report presented the company’s analysis of groundwater 1,4-dioxane trends, specifically at monitoring well 122-60.
- Burlington Environmental submitted a draft *Phase II Investigation Report* to Ecology on March 21, 2011. The report presented the findings of Phase II work at the 637 S Lucile Street property. During Phase II, PSC collected groundwater, soil, and soil vapor samples at the property to assess subsurface hazardous substance concentrations in areas where historical practices may have led to releases.
- Burlington Environmental submitted a *2010 HCIM Performance Monitoring Annual Report* for the Georgetown site to Ecology on March 23, 2011. The report contained information regarding the performance of the subsurface barrier wall system over the past year.

- Burlington Environmental prepared a revised *Long-term Groundwater Monitoring Plan* for the PSC Georgetown site, and submitted it to Ecology on July 29, 2011. The revised plan was submitted to address Ecology's comments on Appendix E of the Engineering Design Report related to 1,4-dioxane.
- Burlington Environmental submitted revisions to the 1,4-dioxane planning document to Ecology on September 1 and November 17, 2011.

Art Brass Plating

Current Operations	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
Historical Operations	Manufacturing of builders' hardware; nickel, cadmium, zinc, silver, copper, chromium, brass, and bronze plating
Address	5516 3rd Avenue S
Facility/Site ID	88531932
Chemicals of Concern	Chlorinated solvents, arsenic, cadmium, copper, nickel, zinc
Media Affected	Soil, groundwater, surface water

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 soil vapor extraction (SVE) interim action beneath the property, which extends across 3rd Avenue S, north of S Findlay Street (Ecology 2009h).

- Art Brass Plating prepared a groundwater monitoring plan in January 2011 (Aspect 2011a). The plan described work to be conducting during 2011 in support of the RI. Activities to be conducted in 2011 included well condition inspection, routine water level monitoring, and groundwater quality sampling.
- Art Brass Plating submitted a draft RI report to Ecology in July 2011. In September 2011, Ecology provided review comments and requested a revision of the report (Ecology 2011o).
- On February 3, 2011, Art Brass Plating submitted a revised *Sediment Porewater Sampling Work Plan* (Aspect and Anchor QEA 2011a). Ecology subsequently approved the work plan.
- In March 2011, Art Brass Plating prepared a *Sediment Porewater Sampling Phase 1 Technical Memorandum*, which provided the results of an investigation of sediment salinity and grain size in the presumed area of groundwater discharge near S Fidalgo Street (Aspect and Anchor QEA 2011b). Ecology and Art Brass Plating agreed on Phase 2 porewater sampling locations on April 13, 2011.
- On November 28, 2011, Art Brass Plating submitted a *Draft Duwamish Waterway Porewater Risk Assessment* to Ecology (Aspect 2011b). The risk assessment discussed elevated levels of vinyl chloride detected in sediment porewater. Ecology was reviewing this document as of the end of the current reporting period.

Blaser Die Casting

Current Operations	Die casting
Historical Operations	Die casting (since 1962); residential or unoccupied prior to 1962
Address	5700 3rd Avenue S
Facility/Site ID	7118747
Chemicals of Concern	Chlorinated solvents
Media Affected	Soil, groundwater

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).

- In December 2010, Blaser Die Casting submitted an addendum to the groundwater monitoring work plan; the addendum summarized activities to be conducted through 2011 (PGG 2010).

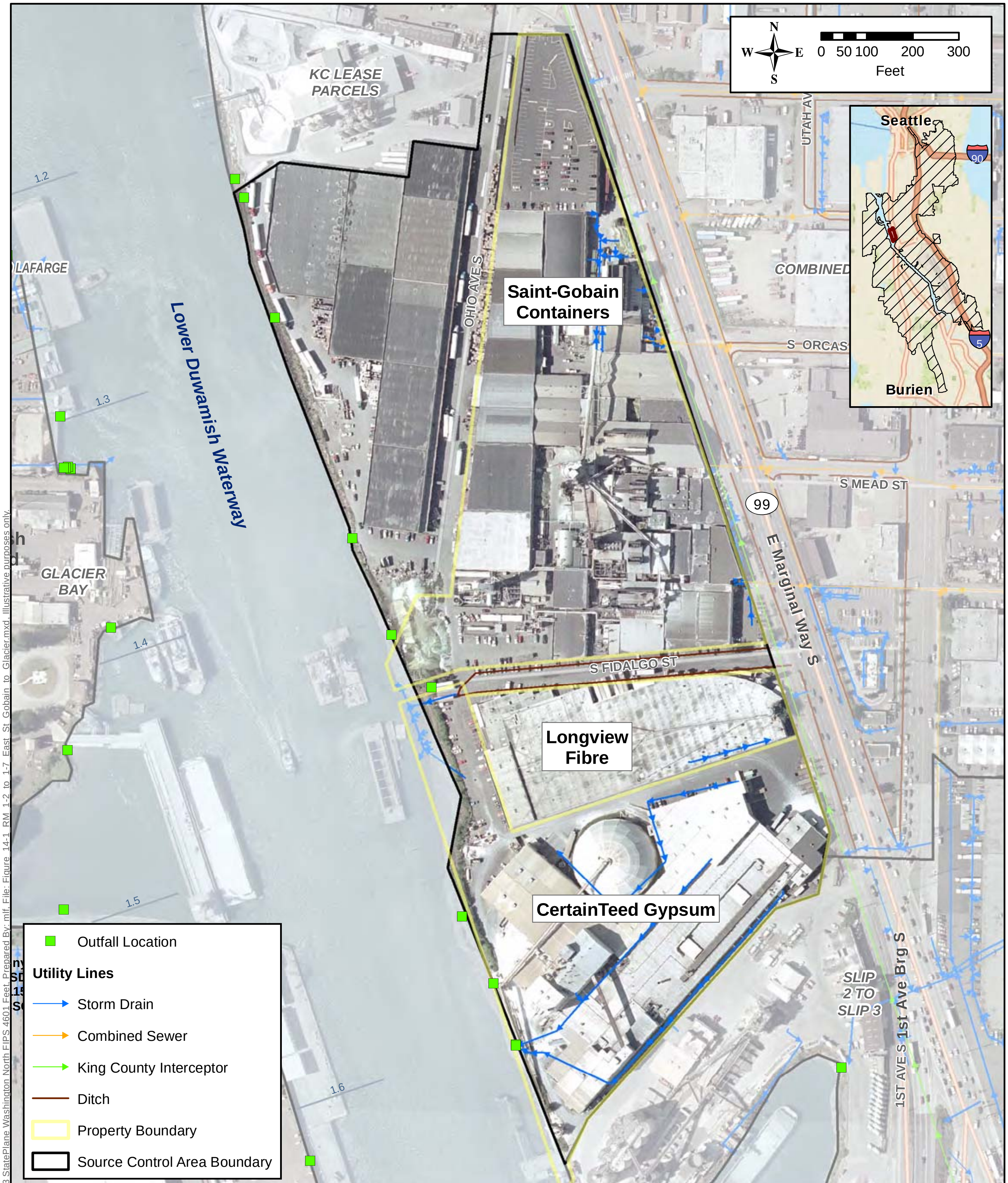
- On July 15, 2011, Blaser Die Casting submitted a draft RI Report to Ecology (PGG 2011a). In September 2011, Ecology provided review comments and requested a revised report (Ecology 2011n).

Capital Industries Inc.

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

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

- On March 8, 2011, Capital Industries submitted a revised *Groundwater Monitoring Plan Addendum* to Ecology. Groundwater monitoring wells were sampled in 2011.
- On April 25, 2011, Capital Industries submitted a draft *Post-Remedial Investigation Groundwater Monitoring Work Plan* to Ecology.
- 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 2011p).



Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure 14-1 RM 1-2 to 1-7 East St Gobain to Glacier.mxd. Illustrative purposes only.

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

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Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure 14-2 RM 1-2 to 1-7 East.mxd. Illustrative purposes only.

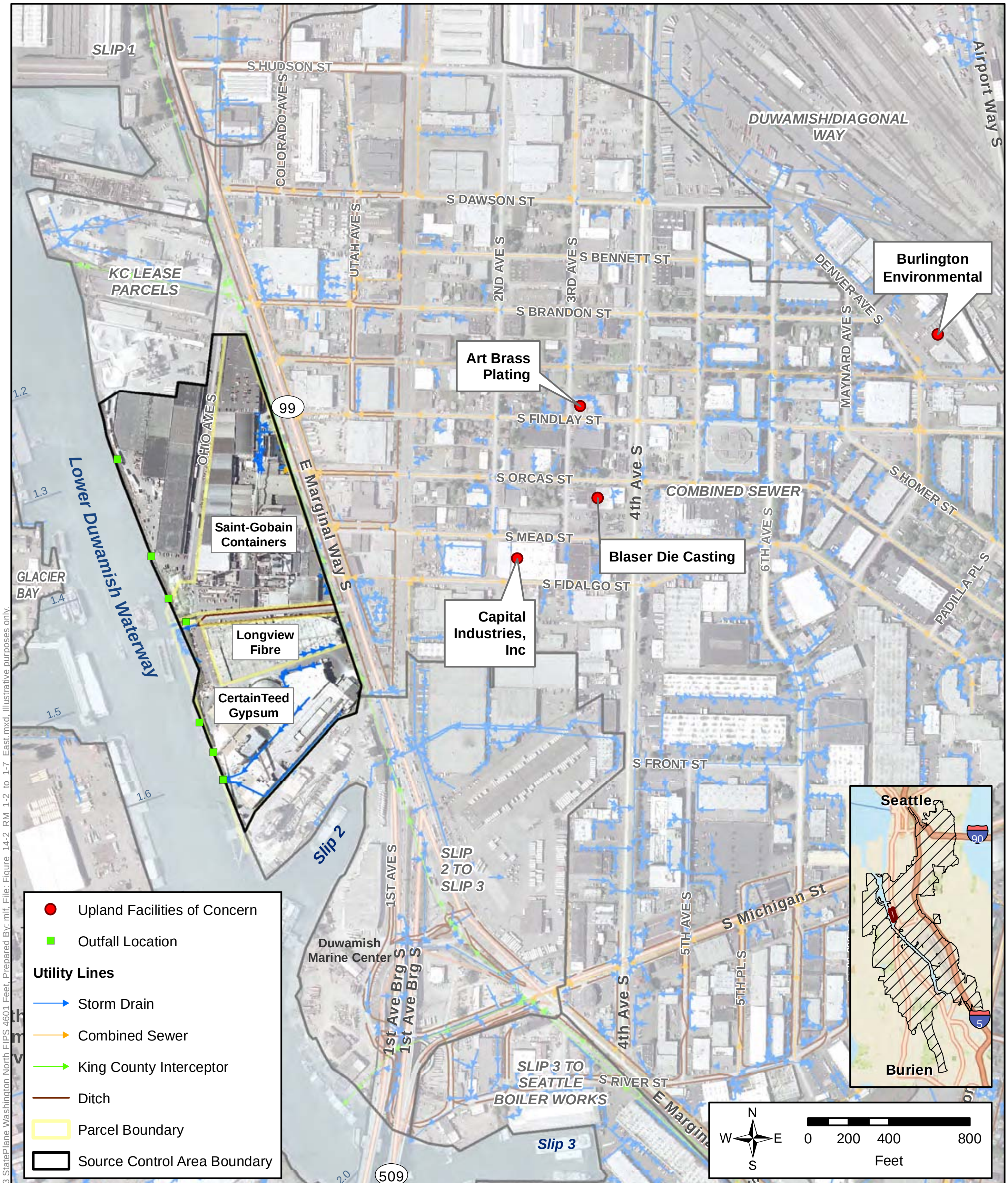

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Figure 14–2. RM 1.2-1.7 East (St. Gobain to Glacier Northwest): Upland Facilities of Concern

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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 (1st Avenue S Bridge SD), the Michigan Street CSO, and several private outfalls discharge to the LDW within RM 1.7-2.0 East. The Michigan Street CSO Basin is shown in Figure 15-2. Source control action items for this source control area are listed in Table 3-3.

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

15.1 Business Inspections

- SPU conducted one initial inspection and a follow-up inspection at one facility (Whole Foods Markets Select Fish) discharging to the Slip 2 Outfall during the current reporting period (Appendix B). This facility was in compliance at the follow-up inspection on June 9, 2011.
- Ecology conducted five inspections at three facilities (Duwamish Metal Fabrication, General Biodiesel, Samson Tug & Barge Seattle Facility) in the Slip 2 to Slip 3 source control area during the current reporting period (Appendix C).
    - A warning letter was issued to General Biodiesel in April 2011 for an update to its SWPPP.
    - A permit determination inspection of Duwamish Metal Fabrication determined that coverage under the ISGP was required; permit coverage was granted on October 28, 2011.
    - Installation of a truck wheelwash system was discussed with Samson Tug & Barge on November 9, 2010.

15.2 Source Tracing

- SPU has collected eight right-of-way catch basin samples within the Michigan Street CSO basin. Two samples were collected during the current reporting period. Chemicals detected at concentrations above storm drain screening levels are identified below. 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. Sample location is identified as “Georgetown Study Area” in Appendix E.

Chemical Class	Chemical	Right-of-Way CB Solids
Metals	Zinc	●
PCBs	PCBs, total	●

Chemical Class	Chemical	Right-of-Way CB Solids
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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

15.3 Facility-Specific Source Control Actions

Duwamish Marine Center

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

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 contain PCBs and PAHs (Ecology 2011s).

- Ecology issued a draft Agreed Order and Public Participation Plan for public review in August 2011 (Ecology 2011s).
- Ecology and the property owner entered into Agreed Order No. DE-8072 on September 2, 2011. 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 2011m).
- A draft RI/FS Work Plan was submitted for Ecology review on December 1, 2011. The RI/FS Work Plan will be completed in 2012.

Scougal Rubber Corporation

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

According to Ecology's June 30, 2010 Site Register, Ecology received an Interim Action Work Plan and Final Cleanup Report for Scougal Rubber Corporation (Facility/Site ID 93637295), located at 6239 Corson Avenue (Figure 15-2). Soil and groundwater at the 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.

- In September 2011, Scougal Rubber Corporation submitted a technical memorandum to Ecology that summarizes the remedial actions conducted at Scougal Rubber from January 2009 through August 2011. Remedial action at the site focused on reduction of chlorinated solvent concentrations in soil and groundwater (PGG 2011b). VOC concentrations in all identified soil hot spots have been reduced to non-detect, with reporting limits at or below MTCA Method A cleanup levels, and no additional soil remediation is anticipated. PGG has initiated a year of quarterly confirmation groundwater sampling at wells MW-11, MW-12, and MW-14. Results for the September 2011 monitoring event were pending as of the end of the current reporting period (December 2011).

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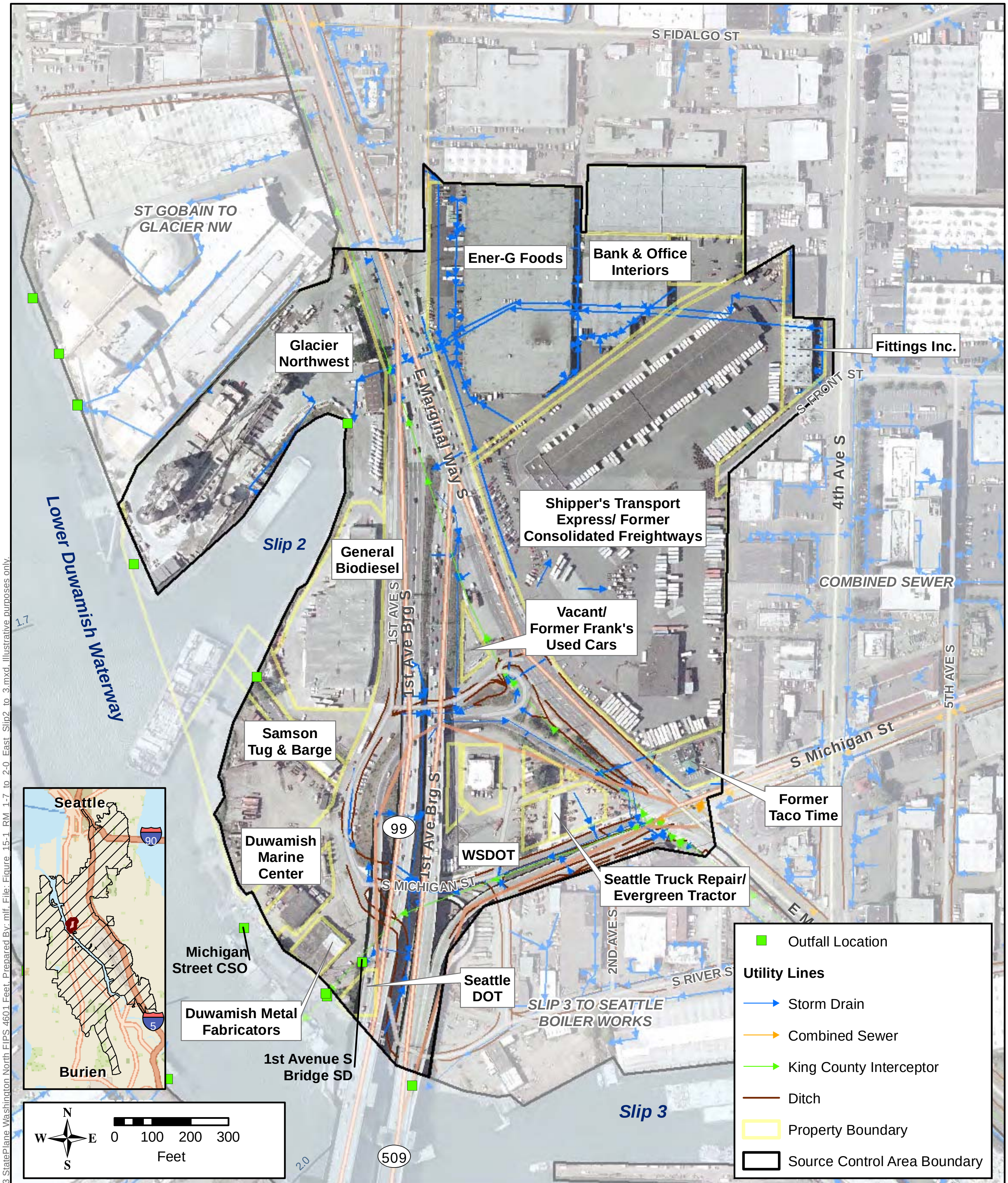

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf, File: Figure 15-1 RM 1-7 to 2-0 East Slip2 to 3.mxd. Illustrative purposes only.

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

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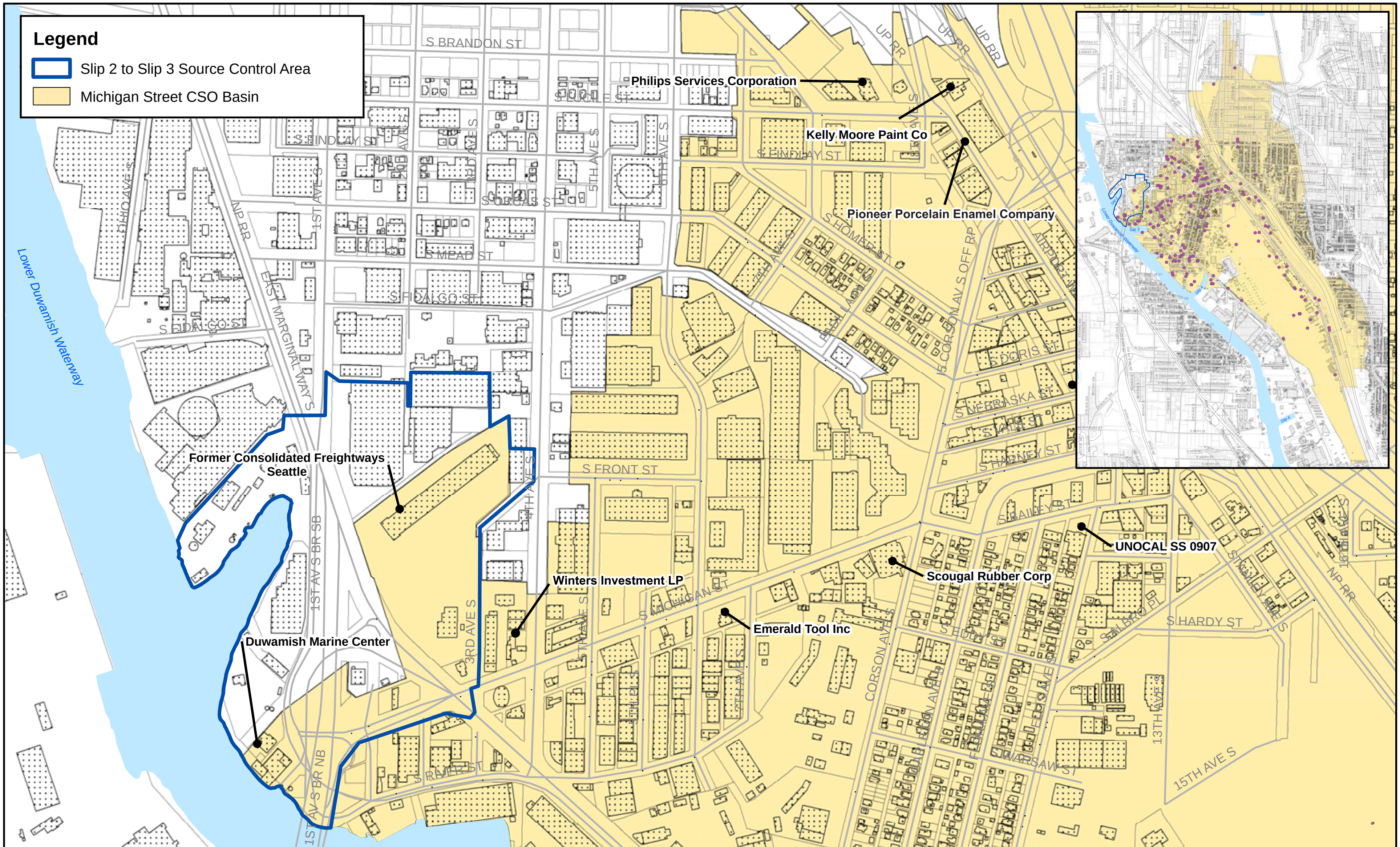

Figure 15–2. Potential Sources Within the Michigan Street CSO Basin

N

0 250 500 1,000 1,500 2,000 Feet

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SAIC From Science to Solutions

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 CSO/SD basins. Source control action items are listed in Table 3-3.

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

16.1 Business Inspections

- SPU conducted inspections in the S Brighton Street and S River Street SD basins during the current reporting period (Appendix B).
    - Four inspections were conducted at two facilities in the S Brighton Street SD basin, including two initial inspections and two follow-up inspections. One facility, Gentle Giant Moving Company LLC, was identified by SPU as not in compliance as of the end of December 2011.
    - Two inspections were conducted at one facility in the S River Street SD basin, including one initial inspection and one follow-up inspection. This facility, Seattle Cabinet & Design LLC, was identified by SPU as not in compliance as of the end of December 2011.

16.2 Source Tracing

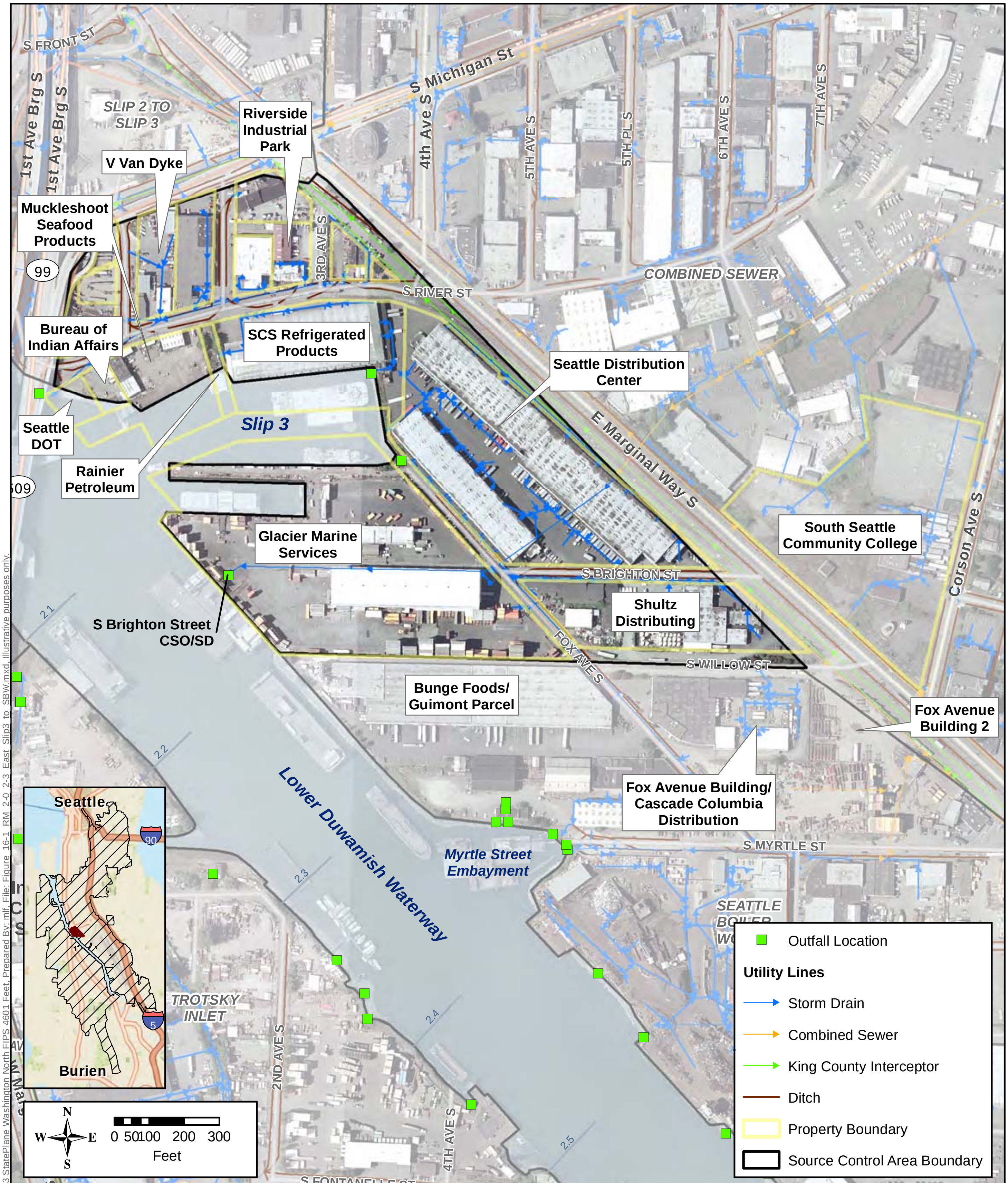
- To date, SPU has collected four in-line solids samples and two right-of-way catch basin samples in the S River Street SD basin. No samples were collected during the current reporting period.
- To date, SPU has collected 12 in-line solids samples, one onsite catch basin sample, and six right-of-way catch basin samples in the S Brighton Street CSO/SD basin. During the current reporting period, one in-line solids sample was collected in this drainage basin.
- Chemicals detected at concentrations above storm drain screening levels during previous reporting periods are identified below in the shaded cells; no chemicals were detected at concentrations above storm drain screening levels during the current reporting period. 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	Arsenic			
	Copper			
	Lead			
	Mercury			
	Zinc			
PCBs	PCBs, total			
PAHs	LPAH			
	HPAH			
Phthalates	Bis(2-ethylhexyl)phthalate			
	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 2011).

16.3 Facility-Specific Source Control Actions

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



Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure_16-1_RM_2-0_2-3_East_Slip3_to_SBW.mxd. Illustrative purposes only.

DEPARTMENT OF ECOLOGY State of Washington

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

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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. Source control action items are listed in Table 3-3.

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

Source control actions for the Crowley Marine Services / 8th 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 a total of five inspections at one facility in the S Garden Street SD basin (United Rentals) during the current reporting period. Inspections included one initial inspection and four follow-up inspections (Appendix B). United Rentals was identified by SPU as being out of compliance as of the end of December 2011.
- Ecology conducted three inspections at one facility within this source control area (Seattle Iron & Metals, 601 S Myrtle Street facility) during the current reporting period (Appendix C). Track-out onto Myrtle Street was documented during the September 14, 2011, Urban Waters Inspection.

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. During the current reporting period, two onsite catch basin samples and two right-of-way catch basin samples were collected in this drainage basin.
- 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. No samples were collected during the current reporting period.
- SPU found elevated levels of copper (860 mg/kg), lead (724 mg/kg), mercury (1.53 mg/kg), and PCBs (8.23 mg/kg DW) in catch basin RCB225, located on the south side of S Myrtle Street, just east of the Seattle Iron & Metals entrance. This catch basin was cleaned by SPU in late 2009 and again in November 2010 by Seattle Iron & Metals. As part of a voluntary compliance agreement with SPU, Seattle Iron & Metals has agreed to install a media filter-type treatment system at this location to control metals discharged to the city storm drain system (SPU 2011).
- Chemicals detected at concentrations above storm drain screening levels are identified below; bullets indicate that chemical concentrations above storm drain screening levels

were detected during the current reporting period. 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	Arsenic			
	Copper		●	●
	Lead			●
	Mercury			●
	Zinc		●	●
PCBs	PCBs, total		●	●
Dioxins/Furans	Dioxins/Furans, total TEQ			●
PAHs	LPAH		●	●
	HPAH			●
Phthalates	Bis(2-ethylhexyl)phthalate		●	●
	Butylbenzylphthalate		●	●
	Diethylphthalate			
	Dimethylphthalate		●	●
	Di-n-butylphthalate			●
	Di-n-octylphthalate			
Other SVOCs	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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

TEQ = Toxic equivalency

17.3 Facility-Specific Source Control Actions

Seattle Iron & Metals

Current Operations	Metals recycling
Historical Operations	Dangerous waste transport, construction, machine shop
Address	601 S Myrtle Street, Seattle 98108
Facility/Site ID	94727791 (Seattle Iron Metals Corp)
Chemicals of Concern	Metals (copper, zinc), petroleum hydrocarbons
Media Affected	Soil, groundwater, stormwater

- Ecology is in the process of modifying the NPDES permit and treatment requirements for Seattle Iron & Metals. The company submitted a new permit application and Ecology expects to issue the new permit in 2012. The new permit will consider runoff from the main yard and will require treatment for roof and employee parking area runoff. To respond to EPA's concerns regarding atmospheric deposition, Ecology will ask Seattle Iron & Metals to use treated stormwater and/or tap water for dust suppression.
- In June 2011, Seattle Iron & Metals submitted a revised draft *Dredging and Dock Replacement Sampling and Analysis Plan* (SAP) and Appendix E (Bioassay Test Methods Plan) to EPA and the U.S. Army Corps of Engineers. A memorandum clarifying the sequencing of pier demolition/reconstruction relative to dredging was also submitted (Harbor Consulting 2011).

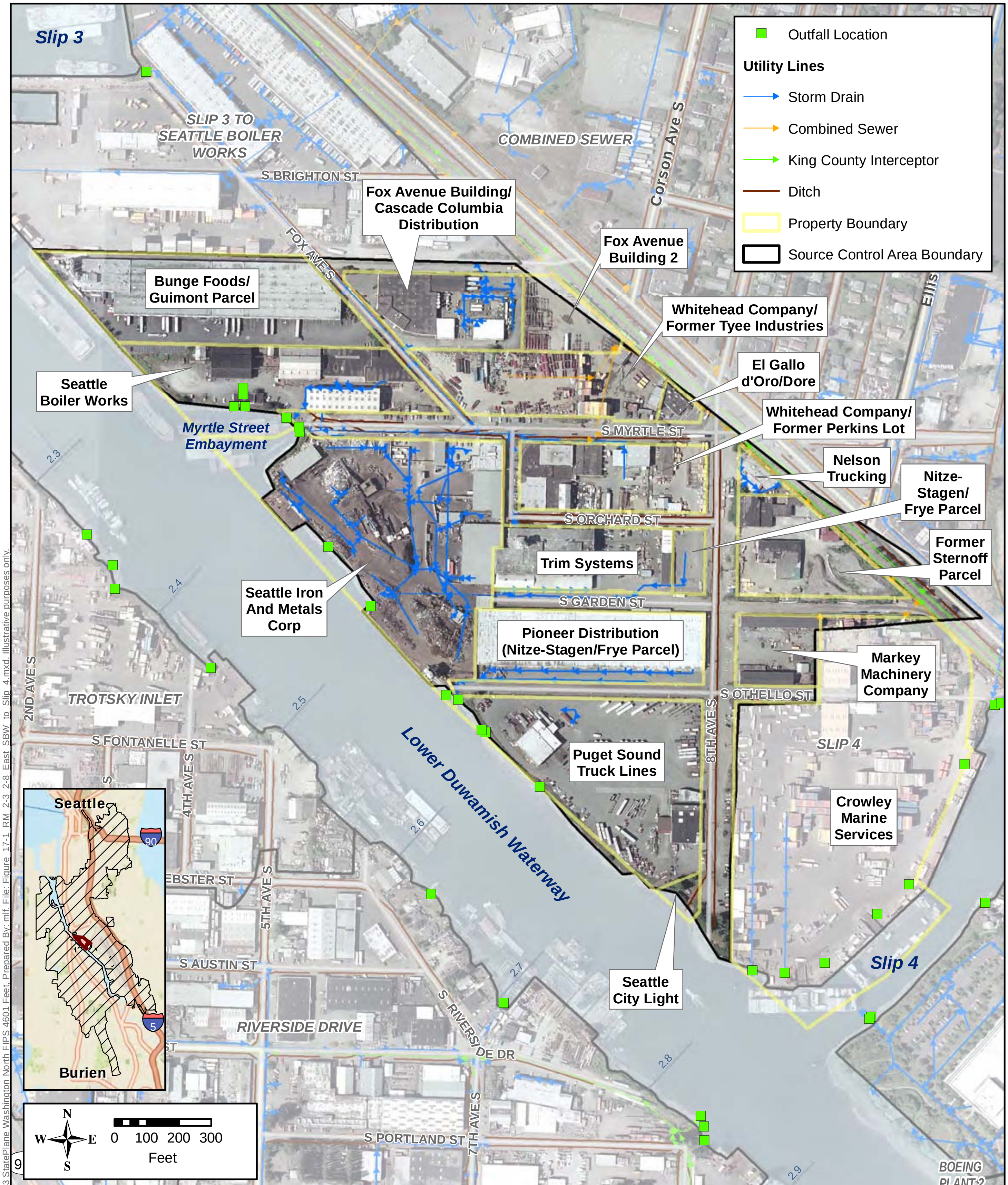
Puget Sound Truck Lines

Current Operations	Garbage truck parking and dumpster storage
Historical Operations	Motor freight transportation terminal and maintenance; automobile painting and body repair; paint manufacturing; drum reconditioning; concrete pipe manufacturing
Address	7303 to 7401 8th Avenue S
Facility/Site ID	41684823 (Cleanscapes Inc) 26468911 (Phil's Finishing Touch)
Chemicals of Concern	Petroleum hydrocarbons
Media Affected	Soil, groundwater

Cleanscapes, which provides garbage, recycling, and food and yard waste collection in many Seattle neighborhoods, currently operates at this location. Cleanscapes also provides construction debris recycling, street maintenance, and other activities for businesses and municipalities.

- In early 2011, Ecology prepared a report summarizing existing information about the Puget Sound Truck Lines property (Hart Crowser 2011c). This report expanded on the information presented in the RM 2.3-2.8 East (Seattle Boiler Works to Slip 4) Data Gaps Report. Additional investigation was recommended to assess potential contamination associated with past industrial uses, past and current housekeeping and material management practices, and underground and aboveground storage tanks.

- In July 2011, Ecology prepared a SAP/Quality Assurance Project Plan (QAPP) to conduct a reconnaissance-level investigation for the Puget Sound Truck Lines property (Hart Crowser 2011e). The study is intended to collect data on concentrations of contaminants in soil, groundwater, catch basins, and seeps to assess the potential for sediment recontamination associated with current and historical activities at the property. Due to staffing and budget constraints, an access agreement to conduct sampling at this property had not been negotiated as of the end of the current reporting period.
- In response to an action item identified in the RM 2.3-2.8 East SCAP, Ecology located records of soil cleanup activities associated with the removal of four underground storage tanks (USTs) at this property in October 1990 (AGI 1991). These records are summarized below.
    - The USTs were of single-wall steel construction; one 30,000- and one 10,000-gallon tank had stored diesel fuel; one 2,000-gallon tank had stored gasoline, and one 1,000-gallon tank had stored used oil. The tanks had no observable holes and appeared to be in good condition. Petroleum-contaminated soil was observed adjacent to the tanks; soil was removed and stockpiled. Composite soil samples were collected from beneath each UST, excavation sides, and from stockpiled soil.
    - Benzene was not detected in soil; however, the laboratory detection limit of 0.05 mg/kg was above the current MTCA Method A soil cleanup level of 0.03 mg/kg. Concentrations of petroleum hydrocarbons in samples collected from the excavation sides and base, and from the used oil tank excavation stockpile, were below cleanup standards. Soil from the used oil tank excavation stockpile was used to backfill the used oil tank excavation. A groundwater sample was collected and analyzed for total fuel hydrocarbons and benzene, ethylbenzene, toluene, and xylenes; analytes were not detected.
    - Approximately 250 cubic yards of soil with petroleum hydrocarbon concentrations above Ecology cleanup levels were treated onsite; a soil treatment pad was constructed in the northern portion of the site. Clean sand was used to build runoff-control berms around the perimeter of the area (approximately 100 feet by 25 feet), and plastic sheeting was placed across the pad and berms. Hydrocarbon-contaminated soil was treated in three 9-inch thick layers, or lifts. Nutrients were added to the uppermost lift and the soil was periodically tilled. Composite soil samples were collected and analyzed during treatment, until soil concentrations were below cleanup levels. Approximately 200 cubic yards of remediated soil was transported to Coal Creek landfill for disposal in February 1991. The remaining treated soil was placed in a berm on the western portion of the site and was seeded with grass.



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.

DEPARTMENT OF ECOLOGY
State of Washington

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

SAIC
From Science to Solutions

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 Boeing Developmental Center (BDC). Source control action items for this source control area are listed in Table 3-3.

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

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 two sediment trap samples, two in-line solids samples, and one onsite catch basin sample in the KCIA SD#1 basin. One sediment trap sample and one in-line solids samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. 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 Trap	In-line Solids	Onsite CB Solids
Metals	Copper	●		
	Zinc	●	●	
PAHs	LPAH	●	●	
	HPAH	●	●	
Phthalates	Bis(2-ethylhexyl)phthalate	●		
	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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

18.3 Facility-Specific Source Control Actions

8801 Site (Former Kenworth Truck/PACCAR)

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

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.

- PACCAR and Merrill Creek Holdings completed a draft Remedial Investigation Report on September 30, 2010. The report provides detail on historical environmental investigations and remedial actions from 1986 to the present, the history of surrounding properties, and potential pathways of contaminant exposure (AMEC 2010). Ecology determined that there were data gaps that needed to be filled before the RI could be finalized.
- In July 2011, PACCAR submitted a final Data Gaps Work Plan (AMEC 2011b). Ecology approved this work plan. PACCAR's contractor completed the investigations described in the work plan, and Ecology expects to receive a final RI report in early 2012.
- On May 20, 2011, Insurance Auto Auctions (IAA), the current tenant at the site, submitted a Stormwater System Investigation report to Ecology. The report documents the results of storm drain solids sampling conducted during October 2009, May 2010, August 2010, and March 2011 (Windward 2011).

Former Rhone-Poulenc East Marginal Way Facility

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

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.

- AMEC Geomatrix prepared a shoreline and sediment investigation work plan for Container Properties, LLC in June 2011 (AMEC 2011a). The work plan includes collection of soil and/or groundwater samples along the LDW shoreline, between the barrier wall and top of the bank. In addition, LDW surface and subsurface sediment samples will be collected offshore of the site.

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet, Prepared By: mlf, File: Figure_15-1_RM_1-7_to_2-0_East_Slip2_to_3.mxd, Illustrative purposes only.

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

SAIC From Science to Solutions

19.0 RM 4.3-4.9 East (Boeing Developmental Center)

The RM 4.3-4.9 East (Boeing Developmental Center) source control area is shown in Figure 19-1. This source control area includes 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 actions items for this source control area are listed in Table 3-3.

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

A SCAP was finalized for this source control area in December 2010 (Ecology 2010f). The BDC has18 private outfalls, 10 of which drainage into this source control area. The remaining 8 private outfalls discharge to the Slip 6 source control area (Section 18) or the EAA-7 (Norfolk CSO/SD) source control area (Section 10).

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)

Current Operations	Research and development
Historical Operations	Aircraft manufacturing
Address	9725 East Marginal Way S, Tukwila 98108
Facility/Site ID	4581384 (Boeing Development Center Norfolk) 2101 (Boeing A&M Developmental Center)
Chemicals of Concern	PCBs, metals, solvents, petroleum hydrocarbons, SVOCs
Media Affected	Soil, groundwater, stormwater, sediment

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 CSO/SD source control area).

- Whole water and filtered solids samples were collected from a storm drain line connected to Outfall 2088 at the BDC as part of the Stormwater Lateral Loading study (SAIC and NewFields 2011c). The storm drain line to Outfall 2088 receives runoff from a central portion of the BDC with a 13-acre drainage basin consisting of buildings, parking lots, and a green belt. This study was conducted to measure contaminant concentrations associated with stormwater discharges and to estimate lateral contaminant loadings from stormwater outfalls within the LDW drainage basin. Additional information regarding the study is presented in Section 3.2.8.
    - In whole water samples, low levels of PCB Aroclor 1254 were detected. All detected total PCB concentrations were below the water quality criteria.
    - In filtered solids samples, total PCB concentrations of 0.21 to 0.82 mg/kg DW were detected in three of the five samples collected, which exceeded the LAET for PCBs. PCBs were reported as nondetect in the two remaining samples.
- Ecology tasked SAIC with updating an outfall inventory and conducting a sediment sampling study to better understand the relationship between storm drain and combined sewer outfalls and surface sediment contamination in the LDW (SAIC 2011d). The 2011 sampling included collection of 21 surface sediment samples near 14 BDC storm drain outfalls in March 2011.
    - The sampling results for locations near the BDC outfalls indicate low concentrations of metals and total PCBs that are consistent with prior sediment sampling near the BDC. All concentrations of metals, PCBs, PAHs, phenols, and phthalates in the sediment samples were less than SMS criteria for these analytes. Benzyl alcohol was detected at concentrations exceeding the SQS.

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

DEPARTMENT OF ECOLOGY State of Washington

SAIC From Science to Solutions

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. Preparation of a Data Gaps Report for the RM Spokane Street to Kellogg Island source control area is currently in progress; the Data Gaps Report and SCAP are expected to be completed in 2012.

20.1 Business Inspections

- During the current reporting period, SPU completed a total of six inspections at two facilities (Penthouse Drapery and South Seattle Community College) in the SW Idaho Street SD basin, including one initial inspection and five follow-up inspections (Appendix B). Both facilities were in compliance as of December 31, 2011.
- Ecology conducted two business inspections at facilities within this source control area during the current reporting period (Bob's Boat Shop and General Recycling) (Appendix C).
    - A CNE was denied to Bob's Boat Shop on January 24, 2011, because this facility technically discharges to the West Waterway.
    - General Recycling was required to update its SWPPP to include the expansion area, oily metals handling and municipal waste storage areas, and to submit an engineering report for a proposed treatment system.

20.2 Source Tracing

- To date, SPU has collected five sediment trap samples, seven in-line solids samples, and five right-of-way catch basin samples in the SW Idaho Street SD basin. Two sediment trap samples, two in-line solids samples, and two right-of-way catch basin samples were collected during the current reporting period.
- 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.
- Sediment trap ID-ST1 contained elevated levels of HPAH (88.6 mg/kg DW). This is consistent with the previous sample collected in 2009 (108.8 mg/kg DW). The drainage area at this location is primarily residential; South Seattle Community College is the largest single non-residential landowner in the basin. SPU recently inspected the property, but no sources of HPAH were identified (SPU 2011).
- Chemicals detected at concentrations above storm drain screening levels are identified below; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. 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	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Zinc	●			
PCBs	PCBs, total	●	●		
PAHs	LPAH	●			
	HPAH	●	●		
Phthalates	Bis(2-ethylhexyl)phthalate	●	●		●
	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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

20.3 Facility-Specific Source Control Actions

General Recycling of Washington, LLC

General Recycling of Washington, LLC is a subsidiary of Nucor Steel. This facility accepts scrap metals by truck, rail, and barge, which are then transported to the Nucor steel mill by rail.

- Ecology conducted a stormwater compliance inspection in April 2011. General Recycling recycled all stormwater during the second and third quarters of 2010. Copper and zinc concentrations in stormwater discharges exceeded the ISGP benchmarks during the fourth quarter of 2010 and the first quarter of 2011. Representatives of General Recycling expressed interest in installing a chemical treatment system that would reduce metals concentrations in the facility's discharges. Ecology requested that General Recycling submit an engineering report and request approval for the chemical treatment system. In addition, Ecology requested that the facility update its SWPPP to include the oily metals area and municipal waste storage areas and prepare a Level 2 Response report (Ecology 2011f, Ecology 2011i).
- In June 2011, General Recycling requested an extension for completing the Level 2 corrective actions. The company had decided to upgrade the stormwater treatment system to include chemical treatment. Additional time was needed to perform bench-scale and whole effluent toxicity testing, evaluate the results to select appropriate chemical

treatment, and finally implement the selected treatment and install a sand filter system, which would require a retrofit of the existing stormwater treatment system (General Recycling 2011). In November 2011, Ecology granted the request under Administrative Order 8888. Level 2 corrective actions are to be completed by September 30, 2012 (Ecology 2011r).

Port of Seattle Terminal 107

- In June 2011, the Port of Seattle completed a draft Environmental Conditions Report for the Terminal 107 property. The purpose of the report was to perform an independent review and evaluation of current and historical spills and releases, land development activities, and operations on and immediately adjacent to Terminal 107. The report also evaluated the pathways that could allow for the migration of potential and confirmed releases to the LDW. The Port of Seattle will use these findings to identify issues of environmental concern that could affect the environmental quality of soil, groundwater, surface water, or sediment at Terminal 107 (SoundEarth Strategies 2011b).

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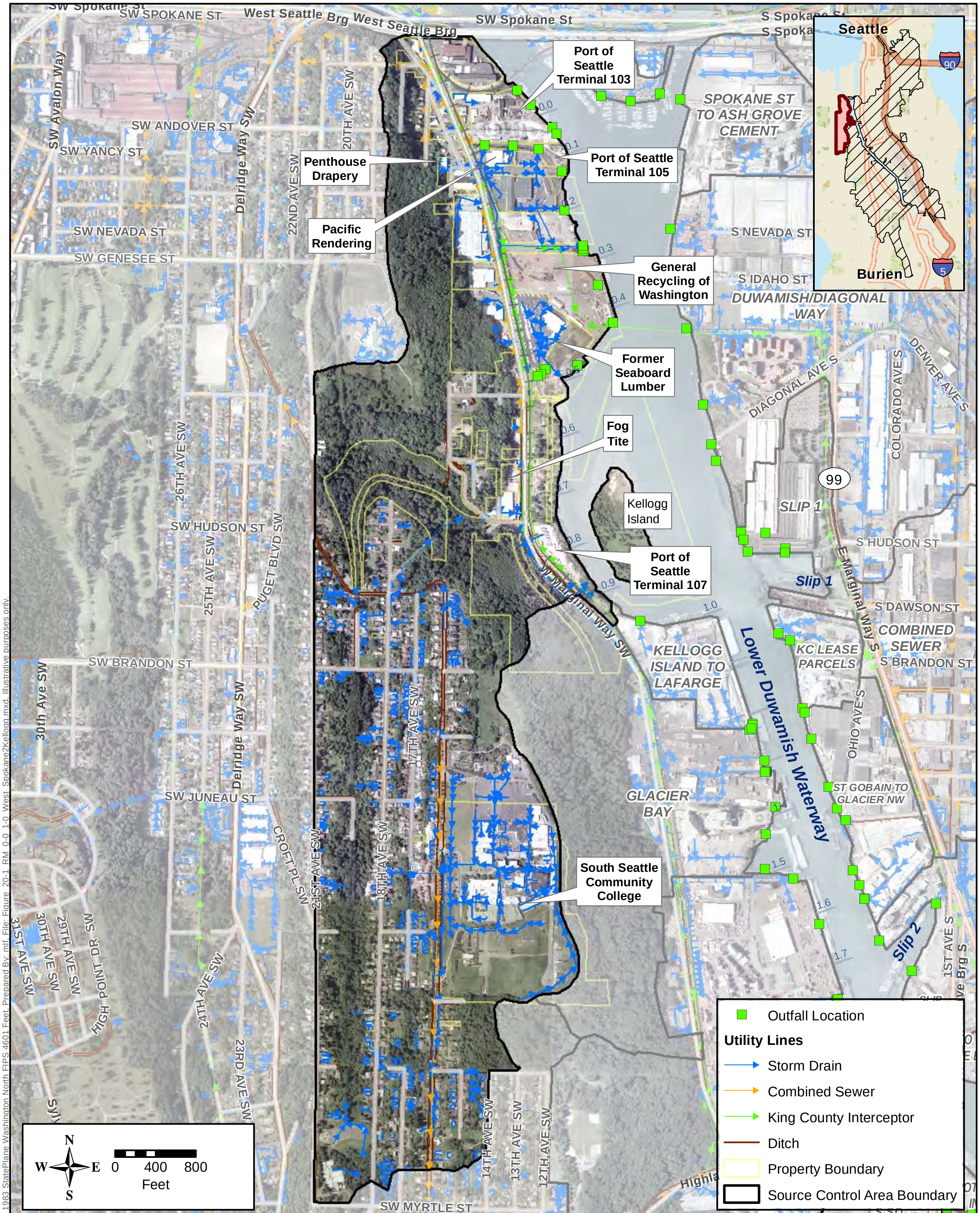

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet, Prepared By: mlf, File: Figure_20-1_RM_0-0_1-0_West_Spokane2Kellogg.mxd, Illustrative purposes only.

Figure 20–1. RM 0.0-1.0 West: Spokane Street to Kellogg Island Source Control Area

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SAIC From Science to Solutions

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. A Data Gaps Report for the source control area was completed in April 2011 (SAIC 2011b). A SCAP was published in June 2011 (Ecology 2011k). There are no public storm drains that discharge to the LDW within this source control area. Source control action items for this source control area are listed in Table 3-3.

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

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 during previous reporting periods are identified below in the shaded cells. 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	Bis(2-ethylhexyl)phthalate	
	Butylbenzylphthalate	
	Dimethylphthalate	
Other SVOCs	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 2011).

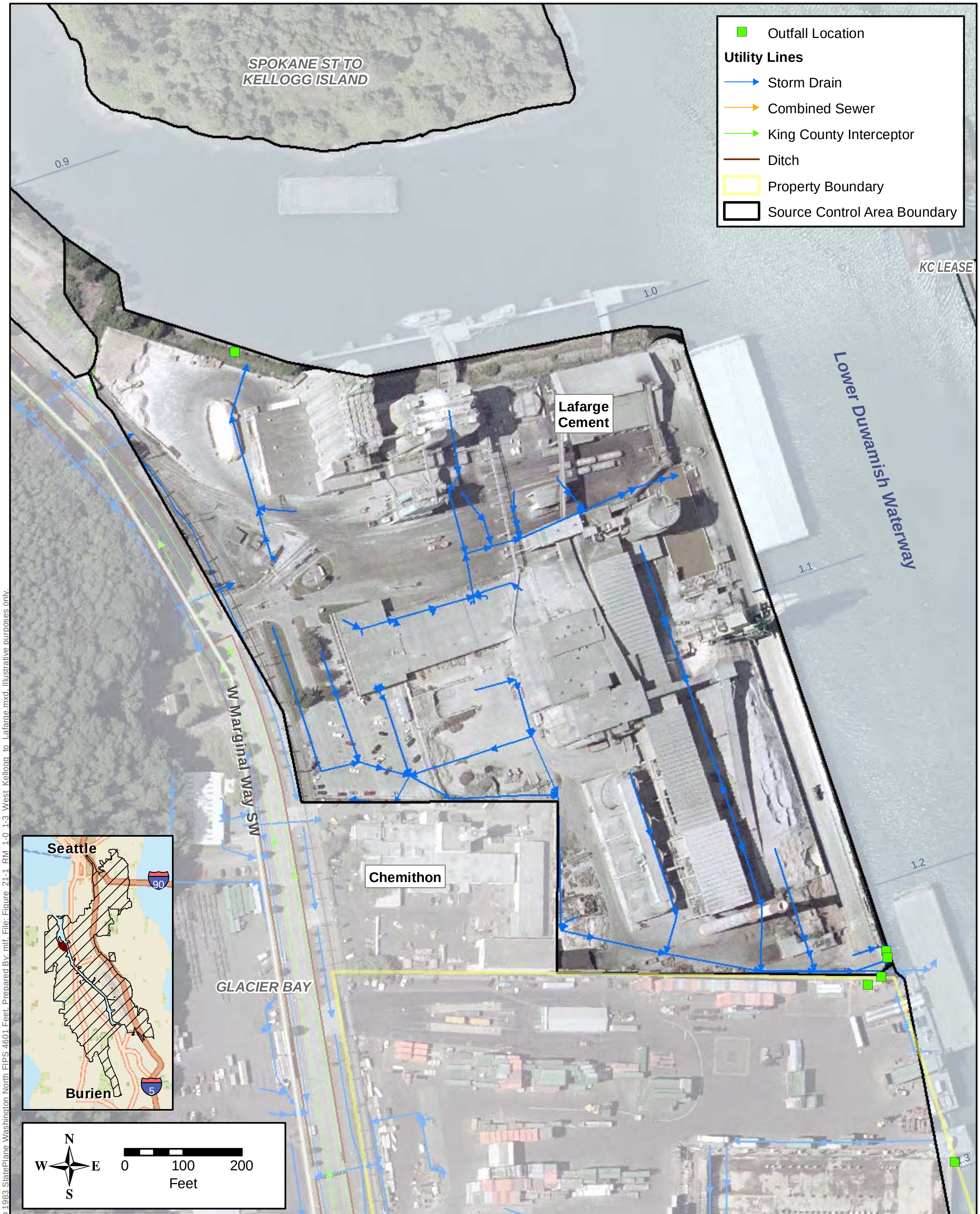
21.3 Facility-Specific Source Control Actions

Lafarge Cement

On January 21, 2010, the U.S. Department of Justice announced a Clean Air Act settlement with the Lafarge Company. Lafarge announced in April 2010 that the company would cease clinker production at the Seattle plant at the end of 2010. At that time, the facility would be transitioned from a clinker/cement manufacturing operation to a cement grinding, blending and shipping operation (Lafarge 2010).

Current Operations	Cement grinding, blending, and shipping
Historical Operations	Drum reclamation, wet kiln cement manufacturing
Address	5400 West Marginal Way SW
Facility/Site ID	2132
Chemicals of Concern	PCBs, PAHs, phthalates, dioxins/furans, organotin compounds
Media Affected	Stormwater

- Ecology reviewed draft NPDES Permit WA-000223-2, which covers three outfall discharges from the Lafarge facility to the LDW. The frequency and volume of stormwater discharge was expected to increase in 2010, when the cement manufacturing process (which recycled much of the facility's stormwater) was discontinued. The permit was issued on December 30, 2010.
- Subsequent to issuance of the new permit, Lafarge began transloading various materials such as lignin and dredged materials from sites around the LDW. Lafarge modified its SWPPP to address these new activities.
- On November 18, 2010, the Seattle Department of Planning and Development approved a substantial development permit for Lafarge Cement. The permit allowed Lafarge to install 320 linear feet of rooftop piping to connect old and new silos (Seattle DPD 2010).



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.

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

SAIC From Science to Solutions

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 properties adjacent to the LDW, this source control area includes some facilities that are located within 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. Action items for the Glacier Bay source control area are listed in Table 3-3.

Location	RM 1.3-1.6 West
Chemicals of Concern	Metals (arsenic, mercury, zinc, copper, lead, antimony, tin), dioxins/furans, PCBs, phthalates, PAHs, 1,2-dichlorobenzene, pentachlorophenol, benzyl alcohol, organo-tin compounds
Data Gaps Evaluation	June 2007 (SAIC 2007f)
SCAP	December 2007 (Ecology 2007e)

22.1 Business Inspections

- SPU conducted one business inspection at one facility (Chemithon) in the Glacier Bay source control area during the current reporting period (Appendix B). SPU determined that Chemithon was in compliance during its initial inspection on November 22, 2010.
- Ecology conducted an inspection at Alaska Marine Lines Seattle Terminal on October 26, 2010 (Appendix C). Ecology determined the facility's SWPPP was not adequate and an update was required.

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 10 onsite catch basin samples within the Glacier Bay source control area; these are located at the Chemithon facility. No solids samples were collected in this source control area during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels during previous reporting periods are identified below in the shaded cells. 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	

Chemical Class	Chemical	Onsite CB Solids
PAHs	LPAH	
	HPAH	
Phthalates	Bis(2-ethylhexyl)phthalate	
	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 2011).

22.3 Facility-Specific Source Control Actions

Duwamish Shipyard

Current Operations	Equipment and container storage
Historical Operations	Repair and maintenance of floating vessels and equipment
Address	5658 West Marginal Way SW, Seattle 98106
Facility/Site ID	2071 (Duwamish Shipyard Inc)
Chemicals of Concern	Metals (arsenic, lead, mercury, cadmium, copper, zinc), PAHs, VOCs, petroleum hydrocarbons, phthalates, PCBs
Media Affected	Soil, groundwater, stormwater, sediment

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

- In September 2011, Ecology received a Phase 1 Remedial Investigation Data Memo from Duwamish Shipyard (Anchor QEA 2011b). This document described the investigations completed as part of the Phase 1 RI for upland and aquatic media on and adjacent to the Duwamish Shipyard property, including upland sampling and testing performed in 2009 and sediment testing performed in spring 2011.
- In October and November 2011, Ecology met with Duwamish Shipyard representatives to discuss remaining data gaps. Duwamish Shipyard agreed to prepare a supplemental RI Work Plan for submittal to Ecology in spring 2012.

Glacier Northwest, Inc. / Former Reichhold Site

Current Operations	Cement terminal
Historical Operations	Lumber mill, chemical manufacturing, cement production
Address	5900-5902 West Marginal Way SW, Seattle 98106
Facility/Site ID	23881883 (Glacier Northwest Seattle Terminal) 67234947 (Glacier Northwest Marginal Way Truck Shop) 89139472 (Glacier NW Reichhold MTCA)
Chemicals of Concern	Metals (arsenic, zinc), phthalates, PCBs, dioxins/furans, chlorophenols
Media Affected	Soil, groundwater, surface water, sediment

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, Ecology 2009i).

- In September 2011, Glacier Northwest submitted a final RI/FS Work Plan. Ecology did not approve this Work Plan.
- On November 9, 2011, Glacier Northwest submitted results of independent groundwater sampling conducted in spring 2011 to Ecology.
- In November and December 2011, Glacier Northwest performed additional independent soil and groundwater sampling. Ecology had not approved work plans for this sampling event.
- In November and December 2011, Ecology and Glacier/Reichhold participated in several meetings to discuss conflicts within the RI/FS Work Plan. Following these meetings, Glacier/Reichhold submitted a sampling and analysis plan for a Revised RI/FS Work Plan to Ecology on December 21, 2011. The Revised RI/FS Work Plan was an update to the September 2011 submittal.

N Terminal 115 (Former MRI Corporation)

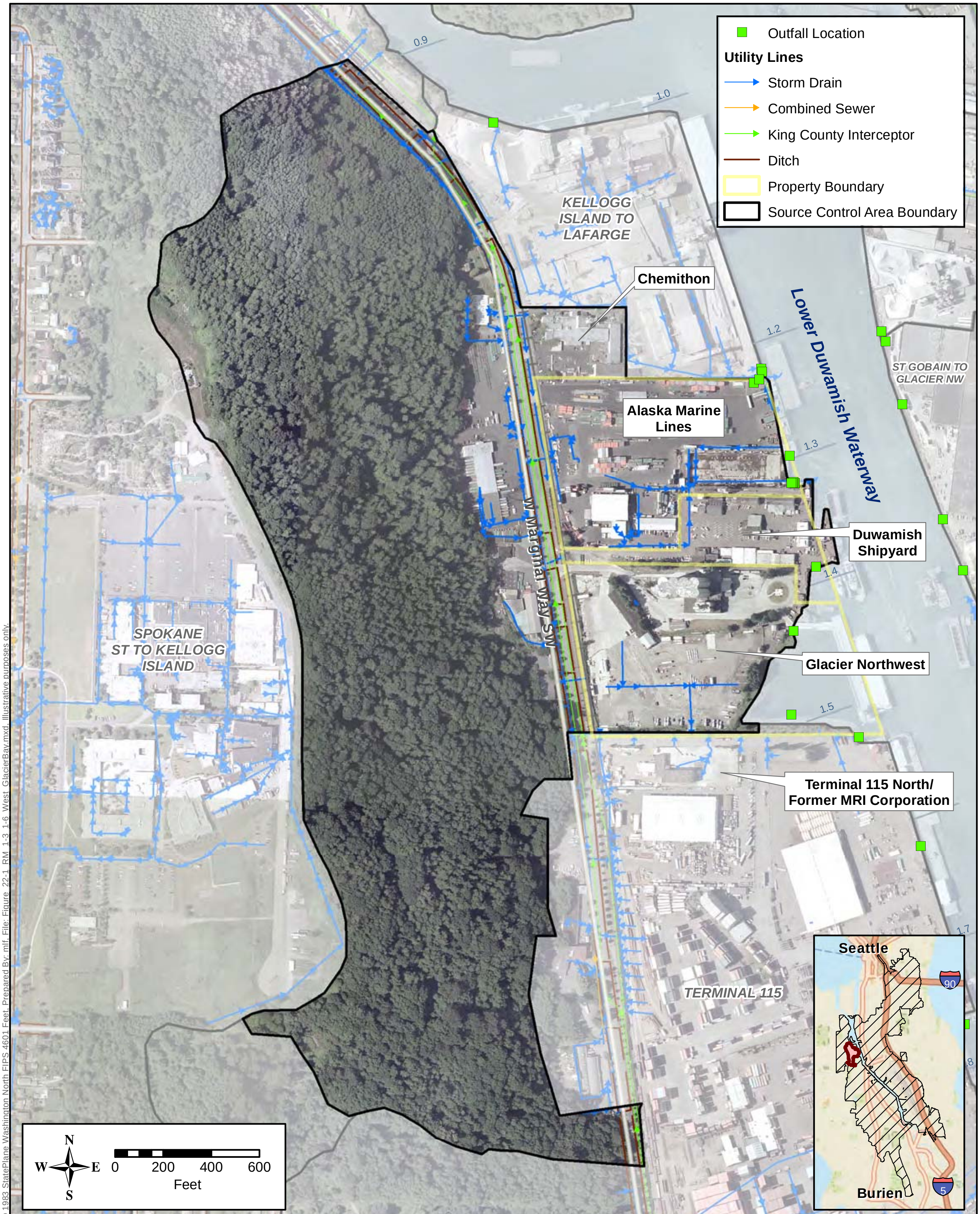
Current Operations	Leased to Gene Summy Lumber (lumber distribution)
Historical Operations	Tin reclamation; construction material supply; industrial lumber sales
Address	6000 West Marginal Way SW, Seattle 98106
Facility/Site ID	2177
Chemicals of Concern	Metals (arsenic, zinc, lead)
Media Affected	Soil, groundwater

- Ecology issued a draft Agreed Order and Public Participation Plan for public review. The review period was from January 31, 2011, to February 14, 2011 (Ecology 2011s).
- 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).
- In April 2011, the Port of Seattle submitted a draft RI/FS Work Plan to Ecology. Ecology met with PLP representatives in November 2011 to discuss Ecology comments on the Draft Work Plan. Ecology expects to receive a revised RI/FS Work Plan from the Port of Seattle in early 2012.

Alaska Marine Lines

Current Operations	Barge loading, transportation/storage of containerized freight cargo
Historical Operations	Graving dock
Address	5600-5610 West Marginal Way SW, Seattle 98106
Facility/Site ID	17126 (Alaska Marine Lines) 19450 (Alaska Marine Lines Seattle Terminal) 68994778 (Alaska Marine Lines Seattle)
Chemicals of Concern	PAHs, petroleum hydrocarbons
Media Affected	Soil, groundwater, stormwater

- The Puget Soundkeeper Alliance filed a complaint in district court against Alaska Marine Lines. The complaint claimed that Alaska Marine Lines violated the Clean Water Act by discharging stormwater from its facility into the LDW.
- The Puget Soundkeeper Alliance and Alaska Marine Lines entered into a Consent Decree that was filed with the EPA (Smith & Lowney 2010). Under the Consent Decree, Alaska Marine Lines agreed to fully comply with all conditions of its NPDES permit, conduct a Level 3 corrective action if any three of the next eight stormwater sampling results from Outfall 2 exceed the permit benchmark for zinc, collect and analyze monthly stormwater samples from Outfall 1 and conduct a Level 3 corrective action if any three of the next eight samples exceed any permit parameter, and conduct a Level 3 corrective action for the Outfall D discharge point.



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.

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

SAIC From Science to Solutions

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 Figure 23-1 and Figure 23-2. This area includes the Highland Park Way SW SD basin, the Terminal 115 CSO basin, and 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.

The Data Gaps report for this source control area was completed in June 2011 (SAIC 2011c). A SCAP for the Terminal 115 source control area was published October 2011 (Ecology 2011q). Action items for the Terminal 115 source control area are listed in Table 3-3.

Location	RM 1.6-2.1 West
Chemicals of Concern	Metals (arsenic, mercury, zinc, copper, lead, antimony, tin), dioxins/furans, PCBs, phthalates, PAHs, 1,2-dichlorobenzene, pentachlorophenol, benzyl alcohol, organo-tin compounds
Data Gaps Evaluation	June 2011 (SAIC 2011c)
SCAP	October 2011 (Ecology 2011q)

23.1 Business Inspections

- SPU conducted an initial inspection and a follow-up inspection at one facility (Versatile Drilling) in the Highland Park Way SW SD basin during the current reporting period (Appendix B). This facility was identified by SPU as being in compliance as of the end of December 2011.
- Ecology conducted source control inspections at five facilities during the current reporting period (Appendix C).
  - A CNE was granted to Northwest Seafood Processors in July, 2011.
  - An ISGP compliance inspection on January 26, 2011, indicated an update of the Northwest Container Services SWPPP was required and the facility needed to implement Level 3 corrective actions. The facility operator indicated that they are planning to move to a different location.
  - Icicle Seafoods was inspected on October 7, 2010; the facility later moved to a different location and the permit was terminated on March 4, 2011.
  - Northland Services prepared an updated SWPPP in December 2010 (Anchor QEA 2010). Ecology conducted a site visit to Northland Services on January 6, 2011, to discuss Level 3 treatment of stormwater at the facility.

23.2 Source Tracing

- SPU has collected four sediment trap samples, four 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, one in-line solids sample, and two right-of-way catch basin samples were collected during the current reporting period.

- In addition, SPU has collected two sediment trap samples, four 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 (Appendix E).
- SPU collected a catch basin sample (CB91) and an in-line solids sample (CB165) from the Port drainage system on Terminal 115; the in-line solids sample was collected during the current reporting period.
- The Port of Seattle collected sediment trap samples from storm drain lines that discharge directly to the LDW in April 2010. Additional samples were collected in October 2010 and March 2011. Results are described in Section 23.3 below.
- Chemicals detected at concentrations above storm drain screening levels are identified below; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. 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	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic				
	Copper		●		
	Lead				
	Mercury				
	Zinc	●	●		
PCBs	PCBs, total	●	●		
PAHs	LPAH		●		
	HPAH	●	●		
Phthalates	Bis(2-ethylhexyl)phthalate	●	●		●
	Butylbenzylphthalate	●	●		●
	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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

23.3 Facility-Specific Source Control Actions

Port of Seattle Terminal 115

Current Operations	Bulk cargo operations; shipping container maintenance and repair; vessel outfitting and repair; refueling; seafood processing
Historical Operations	Boatyard; Boeing Plant 1; refinery; aluminum smelter; cement/concrete mixing plant; tin reclamation; asphalt batch plant; lumber products; auto salvage
Address	6000 to 6720 West Marginal Way SW, Seattle 98106
Facility/Site ID	2177 (Port of Seattle North Terminal 115) 15700 (Port of Seattle Terminal 115 Berth 1) 4040072 (Seattle Port Terminal 115) 98422914 (Terminal 115/Crowley Marine Services) 71289955 (Samson Tug & Barge Co Inc)
Chemicals of Concern	Metals, PAHs, phthalates, over SVOCs, petroleum hydrocarbons, VOCs
Media Affected	Soil, groundwater, storm drain solids

Terminal 115 requires maintenance dredging to re-establish adequate depth to accommodate barge loading and unloading.

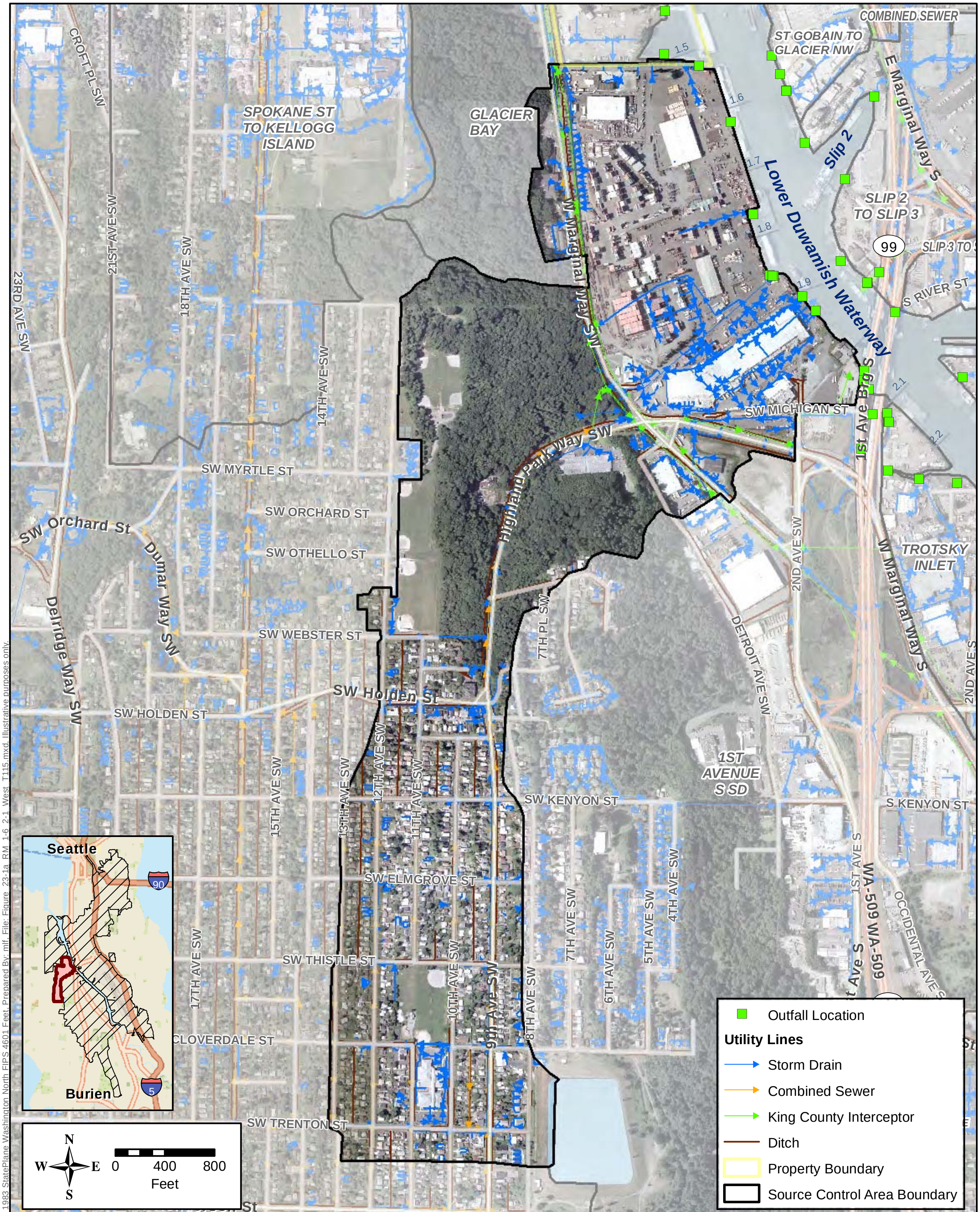
- In November 2010, the Port of Seattle's contractor completed a *Post-dredge Subsurface Sediment Characterization and Sand Cover Monitoring Report* (SEE 2010). The monitoring report documents the methods and results of bathymetric surveys, sediment sampling, and sediment analysis conducted for the Terminal 115 Berth 1 maintenance dredging and pier replacement project.
- In April 2011, the Port of Seattle's contractor completed an *Environmental Conditions Report* for Terminal 115 (SoundEarth Strategies 2011a). The purpose of the report was to perform an independent review and evaluation of current and historical spills and releases, land development activities, and operations on and immediately adjacent to Terminal 115. The report also evaluated the pathways that could allow for the migration of potential and confirmed releases to the LDW. The Port of Seattle will use these findings to identify issues of environmental concern that could affect the environmental quality of soil, groundwater, surface water, or sediment at Terminal 115.
- The Port of Seattle collected sediment trap samples from storm drain lines that discharge directly to the LDW in April and October 2010, and in March 2011. The sediment traps were installed in the lines connected to Outfalls 2123 (POS 6161), 2124 (POS 6163), 2125 (POS 6162), and 2220 (POS 6153). The Port pulled the traps in May 2011 and planned to prepare a Data Report by July 2011 (Kuroiwa 2011).
- The Port of Seattle prepared a *Year 1 Sand Cover Monitoring and Recontamination Study Report* in November 2011, as part of the Berth 1 maintenance dredging and pier replacement project (SEE & TEC 2011). Studies included a bathymetric survey to assess the stability of the placed sand cover over the T-115 maintenance dredging completed in February 2010; chemical analysis of sediment collected from the area of the sand cover; and chemical monitoring of the adjacent upland stormwater catch basins to address the potential for recontamination of the sand cover due to stormwater discharges.

- o Sediment traps were deployed at five drainage systems within the T-115 facility; sediment trap samples and grab samples were collected in April and October 2010 at each of the five sampling locations. Samples were analyzed for PAHs, semivolatile organic compounds (SVOCs), TOC, grain size, and metals.
- o Results of the recontamination study indicate that the sand cover has been recontaminated, but not to the pre-dredge and cover levels or at levels that exceed the SMS. All measured PAHs were higher than previous post-cover measures, but are still low and below the corresponding SQS values.
- o Outfall sediment may be contributing to the chemical loading to the sand cover area; both sediment and storm drain solids have relatively higher concentrations of HPAHs, fluoranthene, pyrene, and phenanthrene. For dioxins/furans, the same penta- and hexa-chlorinated dioxin congeners have elevated concentrations in both inline storm drain solids samples and cover area sediments.
- o Other sources may also be contributing to the physical and chemical loading to the T-115 Berth 1 cover area (SEE & TEC 2011).

Northwest Container Services

Current Operations	Intermodal rail container loading, storage, maintenance, and cargo container repair
Historical Operations	Gravel mining and mixing, cement and concrete mixing plant, shipping terminal
Address	6110 West Marginal Way SW, Seattle 98106
Facility/Site ID	84427474
Chemicals of Concern	Metals (zinc, lead)
Media Affected	Stormwater

- Ecology conducted a compliance inspection at Northwest Container Services on January 26, 2011. Northwest Container Services was not in compliance with its ISGP at that time.
- On April 19, 2011, Ecology sent a warning letter to Northwest Container Services stating that, within 30 days, the company must submit a SWPPP that complies with all permit conditions (Ecology 2011g).



Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure 23-1a RM 1.6 2-1 West T115.mxd. Illustrative purposes only.

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Figure 23–1. RM 1.6-2.1 West: Terminal 115 Source Control Area
Terminal 115 and Vicinity

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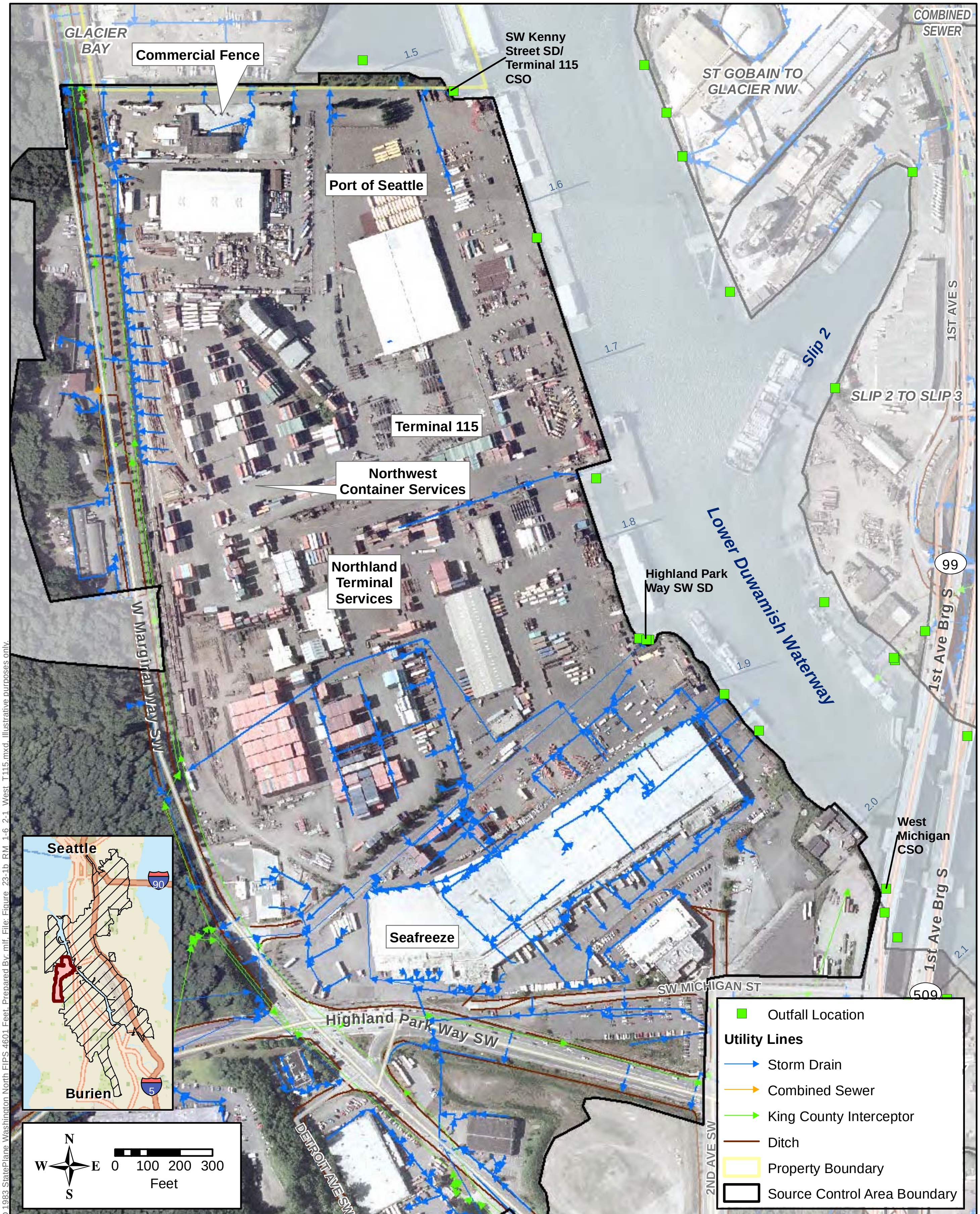

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet. Prepared By: mlf. File: Figure_23-1b_RM_1-6_2-1_West_T115.mxd. Illustrative purposes only.

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Figure 23–2. RM 1.6-2.1 West: Terminal 115 Source Control Area

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24.0 RM 2.1 West (1st Avenue S SD)

The RM 2.1 West (1st Avenue S SD) source control area includes the 1st Avenue S SD basin and is shown in Figure 24-1. Preparation of a Data Gaps Report for this source control area is currently in progress. The Data Gaps Report is expected to be completed in 2012.

24.1 Business Inspections

- SPU completed a total of 22 inspections at 11 facilities in the 1st Avenue S SD basin during the current reporting period, including nine initial inspections and 13 follow-up inspections (Appendix B). All but the following two facilities were identified by SPU as being in compliance as of the end of December 2011:
  - International Construction Equipment;
  - WM - Healthcare Solutions, Inc.
- Ecology conducted five inspections at four facilities in this source control area during the current reporting period (Appendix C).
  - An Urban Waters compliance inspection conducted on April 6, 2011, at SeaPort Fuels indicated that this facility needs to improve source control or may need coverage under ISGP as a significant contributor.
  - Track-out control was deemed problematic during a November 9, 2010, inspection of Samson Tug & Barge Detroit Avenue.

24.2 Source Tracing

- SPU has collected eight sediment trap samples, 17 in-line solids samples, and one onsite catch basin sample in the 1st Avenue S SD basin. During the current reporting period, four sediment trap samples and four in-line solids samples were collected from this drainage basin.
- Sediment trap 1st-ST7 contained higher levels of HPAH (24.5 mg/kg DW) than the previous sample collected in 2009. Additional source tracing may be warranted in this sub-basin (SPU 2011).
- Chemicals detected at concentrations above storm drain screening levels are identified below; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. 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	In-line Solids	Onsite CB Solids
Metals	Mercury			
	Zinc	●	●	
PCBs	PCBs, total	●		
PAHs	LPAH	●		

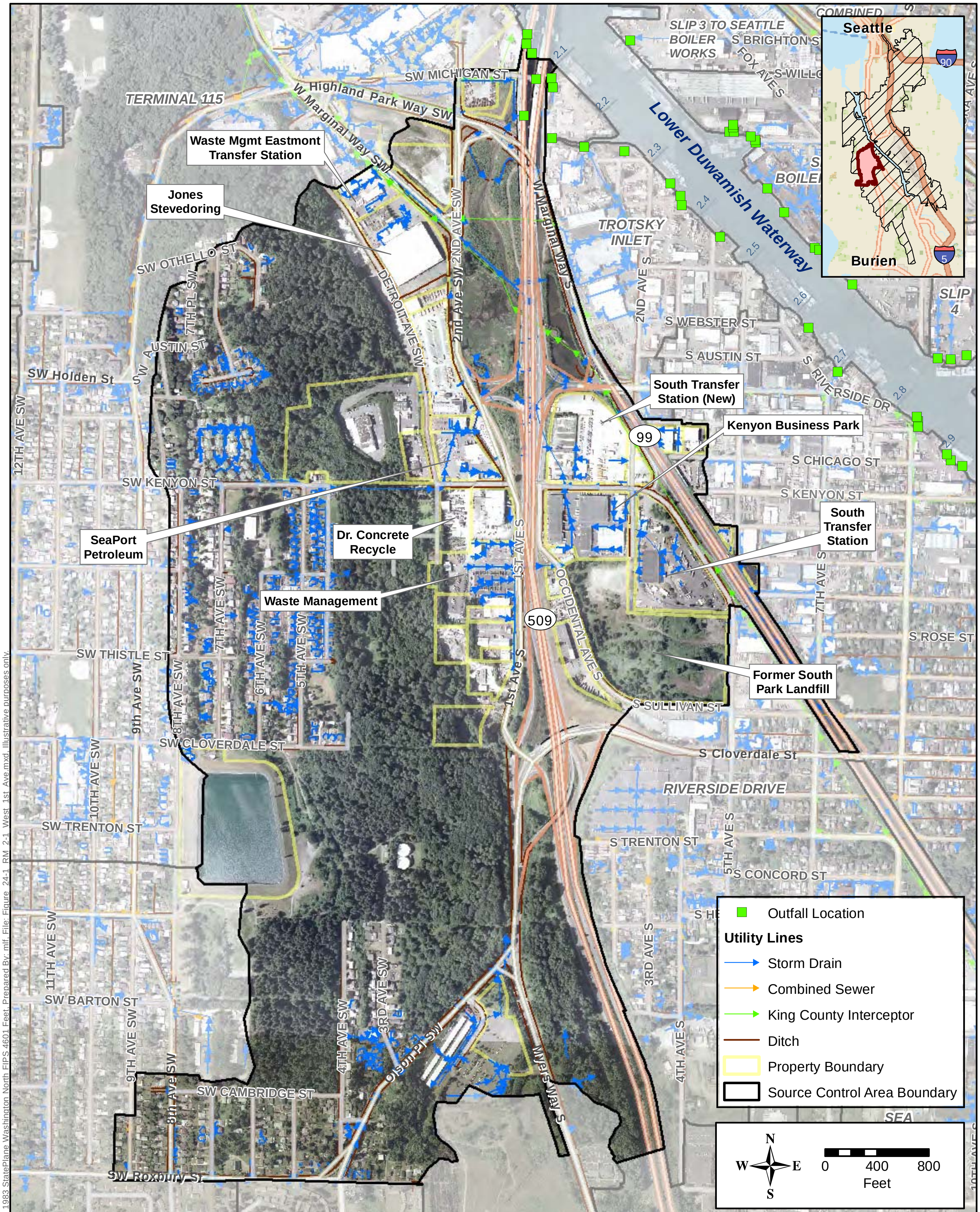
Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids
	HPAH	●		
Phthalates	Bis(2-ethylhexyl)phthalate	●	●	
	Butylbenzylphthalate	●	●	
	Dimethylphthalate			
	Di-n-butylphthalate			
Other SVOCs	2-Methylphenol			
	4-Methylphenol			
	Benzoic acid	●		
	Phenol			
TPH	TPH-diesel		●	
	TPH-oil	●	●	

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through December 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

24.3 Facility-Specific Source Control Actions

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



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.

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Figure 24–1. RM 2.1 West: 1st Avenue S SD Source Control Area

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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 7th Avenue S SD basin and the 8th Avenue S CSO basin. During the current reporting period, Ecology began preparation of a Data Gaps Report for this source control area. The Data Gaps Report and SCAP will be completed in 2012.

25.1 Business Inspections

SPU, Ecology, and King County conducted business inspections in the Riverside Drive source control area during the current reporting period; these are listed in Appendix B, C, and D, respectively.

- SPU conducted a total of 10 business inspections at five facilities during the current reporting period.
  - SPU conducted two initial inspections and six follow-up inspections in the 7th Avenue S SD basin. Marine Lumber Services was identified by SPU as not in compliance as of the end of December 2011.
  - In addition, SPU conducted two inspections at two facilities in the 8th Avenue S CSO basin, including one initial inspection and one follow-up inspection. Both facilities were identified by SPU as being in compliance as of the end of December 2011.
- Ecology conducted 11 inspections at 10 facilities in this source control area during the current reporting period.
  - Formal enforcement requiring control or treatment of copper, arsenic and zinc discharges from the South Yard was issued to Marine Lumber Services as a result of a NPDES ISGP compliance inspection on September 28, 2011.
  - A warning letter was issued to Independent Metals requiring them to update the facility SWPPP.
  - Northwest Grating Products failed to properly monitor and report during a May 25, 2011, inspection.
- King County conducted a total of four business inspections during the current reporting period; all four businesses were found to be in compliance with county stormwater regulations.

25.2 Source Tracing

- To date, SPU has collected six sediment trap samples, 16 in-line solids samples, three onsite catch basin samples, and 20 right-of-way catch basin samples in the 7th Avenue S SD basin. During the current reporting period, three sediment trap samples, three in-line solids samples, and 11 right-of-way catch basin samples were collected in this drainage basin (Appendix E).

- In addition, SPU collected two right-of-way catch basin samples in the 8th Avenue S CSO basin, and one onsite catch basin sample in an area of the source control area that discharges directly to the LDW (CB206).
- SPU collected soil samples at three locations along the north edge of S Monroe Street, near Marine Lumber Service. Previous sampling by SPU identified elevated levels of arsenic (710 mg/kg) in dust samples collected from the pavement at Marine Lumber Service; runoff from the pavement flows to the right-of-way along S Monroe Street. Soil sample results indicate that arsenic (260 mg/kg) and copper (2,110 mg/kg) are elevated at 1 foot below the ground surface in the vicinity of the facility's gate on S Monroe Street (SPU 2011).
- Chemicals detected at concentrations above storm drain screening levels are identified below; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. 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	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic				
	Copper			●	●
	Lead				●
	Mercury			●	●
	Zinc	●	●	●	●
PCBs	PCBs, total	●	●	●	●
PAHs	LPAH			●	●
	HPAH	●	●	●	●
Phthalates	Bis(2-ethylhexyl)phthalate	●	●	●	●
	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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

25.3 Facility-Specific Source Control Actions

Independent Metals Plants 1 and 2

- Ecology, EPA, King County, and the City of Seattle conducted source control investigation and sampling in the vicinity of Independent Metals Plants 1 and 2 to determine where runoff from these facilities is discharged. SPU and Ecology inspected Plant 1 and identified one or more PCB sources to the city storm drain system (7^{th} Avenue S SD). The PCB levels have declined since Independent Metals made 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).

640 S Riverside Drive

SPU is planning to construct a new stormwater pump station/water quality treatment facility at this site. This facility will be the first of its kind on the LDW, and Ecology is very supportive of SPU's efforts to design and build the plant. SPU is also planning to clean up most of the contaminated soil and groundwater at this site.

- On January 24, 2011, Ecology issued an opinion letter on the proposed independent cleanup of this Voluntary Cleanup Program (VCP) site. Ecology accepted the proposed interim action approach, with a few modifications, and determined that the interim action proposed for this site would accomplish a significant amount of cleanup, but would not be a final cleanup action. Ecology determined that, upon completion of the proposed cleanup, further remedial action will likely be necessary to remediate contamination at the site (Ecology 2011b).
- SPU is working closely with Ecology to ensure that appropriate cleanup levels are established with regard to soil and groundwater contamination at the property. Ecology has directed SPU to develop property-specific cleanup levels that will be protective of LDW sediments. Final cleanup levels will not be established for the 640 S Riverside Drive property until cleanup levels specific to the LDW have been established (Ecology 2011e).

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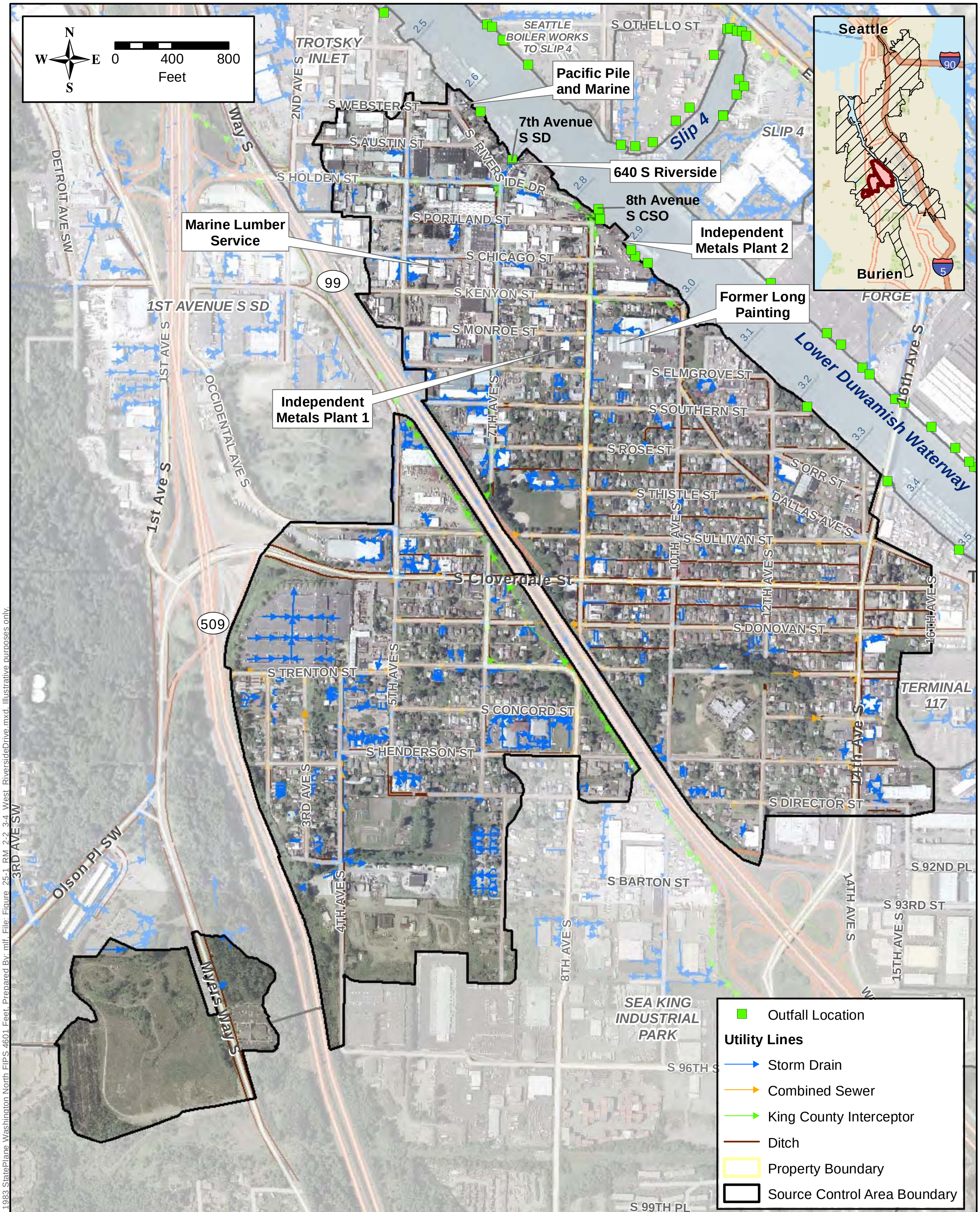

Figure 25–1. RM 2.2-3.4 West: Riverside Drive Source Control Area

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.

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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 includes the S 96th Street SD basin. Ecology will begin preparing a Data Gaps Report for this source control area in 2012.

26.1 Business Inspections

SPU, Ecology, and King County conducted business inspections in the Sea King Industrial Park source control area during the current reporting period; these are listed in Appendix B, C, and D, respectively.

- SPU conducted 11 inspections at eight facilities in the S 96th Street SD basin, including two screening visits, three initial inspections, and six follow-up inspections. One of these eight facilities (Keithly Electrical Co.) was identified by SPU as being out of compliance as of the end of December 2011.
- Ecology conducted 25 compliance inspections at 18 facilities in the Sea King Industrial Park source control area during the current reporting period.
  - Notice of Correction for poor control of track-out was issued to ICON Materials and Western Ports Containers.
  - Two facilities that require stormwater permits were identified in October 2011. Both facilities (Pacific Industrial Supply and Security Contractor Services) applied for and were granted permit coverage in January 2012.
- King County conducted 28 inspections at 22 businesses in this source control area, including 22 initial inspections and six follow-up inspections. Western Ports (9618 8th Avenue S) was inspected jointly with Ecology to address problems with stormwater drainage and track-out of sediments onto S 96th Street.

26.2 Source Tracing

- SPU has collected six sediment trap samples, 11 in-line solids samples, and eight right-of-way catch basin samples in the S 96th Street SD basin. Three sediment trap samples, four in-line solids samples, and six right-of-way catch basin samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below. 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	In-line Solids	Right-of-Way CB Solids
Metals	Zinc	●	●	●
PCBs	PCBs, total			
PAHs	LPAH			

Chemical Class	Chemical	Sediment Traps	In-line Solids	Right-of-Way CB Solids
	HPAH	●	●	●
Phthalates	Bis(2-ethylhexyl)phthalate	●		●
	Butylbenzylphthalate	●	●	●
	Dimethylphthalate	●		
Other SVOCs	2-Methylphenol			●
	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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

26.3 Facility-Specific Source Control Actions

- King County worked with Western Ports to bring their stormwater drainage facility into compliance through repair and maintenance and to improve the exit to limit vehicle track-out (Hickey 2012).

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 will begin preparing a Data Gaps Report for this source control area in 2012.

27.1 Business Inspections

- King County conducted seven business inspections at five facilities in the Restoration Areas source control area during the current reporting period, including two follow-up inspections (Appendix D). Particular effort was made to bring the Park Des Moines Apartments (10002 Des Moines Memorial Drive S) into compliance by addressing debris and solid waste storage problems (Hickey 2012).

27.2 Source Tracing

- SPU has collected two 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, one in-line solids sample, and one right-of-way catch basin sample were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below. 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 Trap	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Zinc				
HPAH	Fluoranthene				
Phthalates	Bis(2-ethylhexyl)phthalate				●
	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 2011).

● = Exceedance of screening level was observed during the current reporting period (October 2010 through December 2011).

27.3 Facility-Specific Source Control Actions

- No facility-specific source control actions have been conducted to date.

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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 May 2012. 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.
- Four full-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 at 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 (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:
  - Jorgensen Forge Uplands (EAA-4: Boeing Plant 2 to Jorgensen Forge). This site may be included in the future.
  - Fox Avenue Building (RM 2.0-2.3 East: Slip 3 to Seattle Boiler Works)
  - South Park Landfill (RM 2.1 West: 1st Avenue S SD)

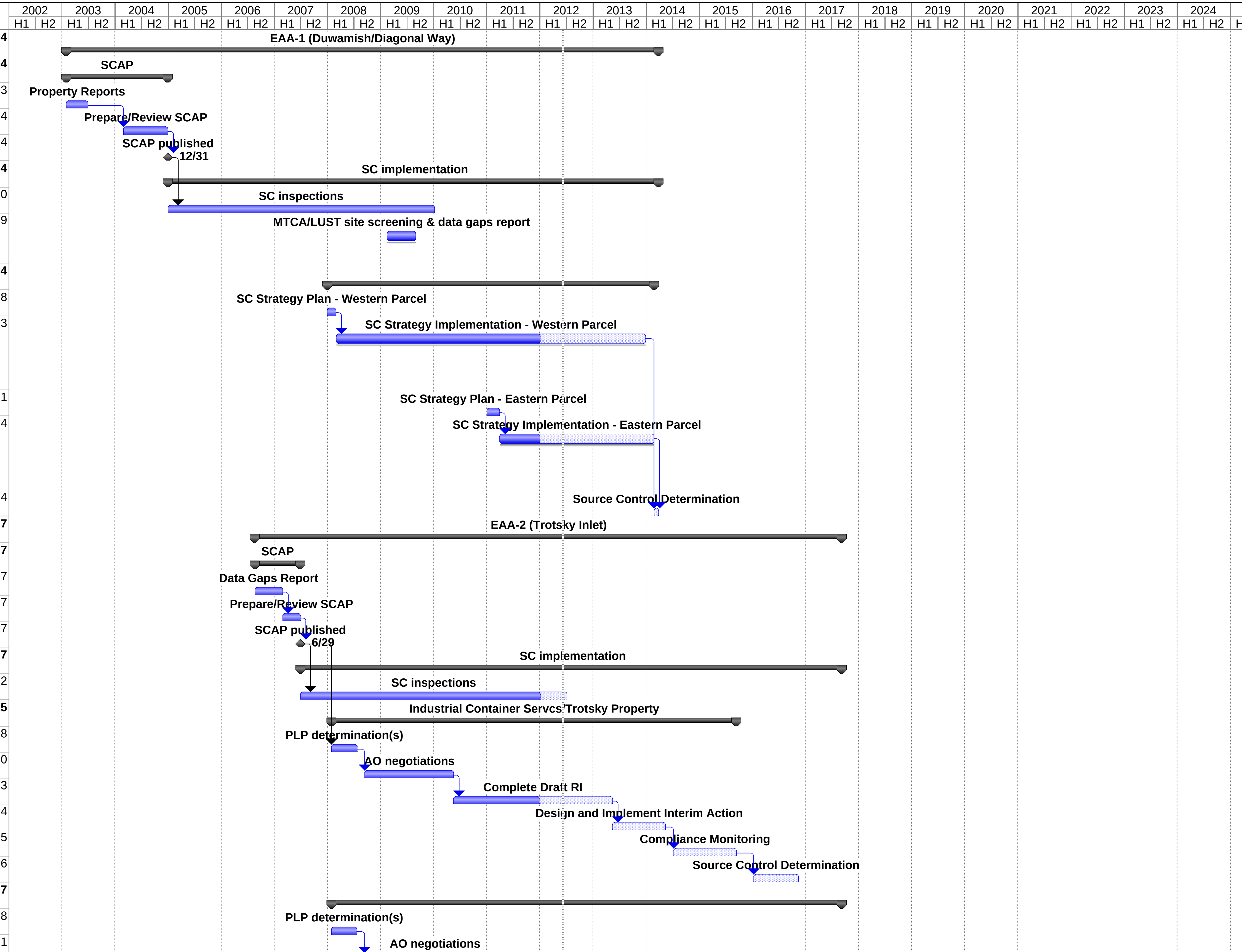
- Work has started at the following Ecology-lead sites (with 4 full-time site managers):
  - North Boeing Field/Georgetown Steam Plant (EAA-3: Slip 4)
  - Crowley Marine Services (EAA-3: Slip 4)
  - Trotsky Property (EAA-2: Trotsky Inlet)
  - Boeing Isaacson/Thompson (EAA-6: Boeing Isaacson/Central KCIA)
  - 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)

- 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.

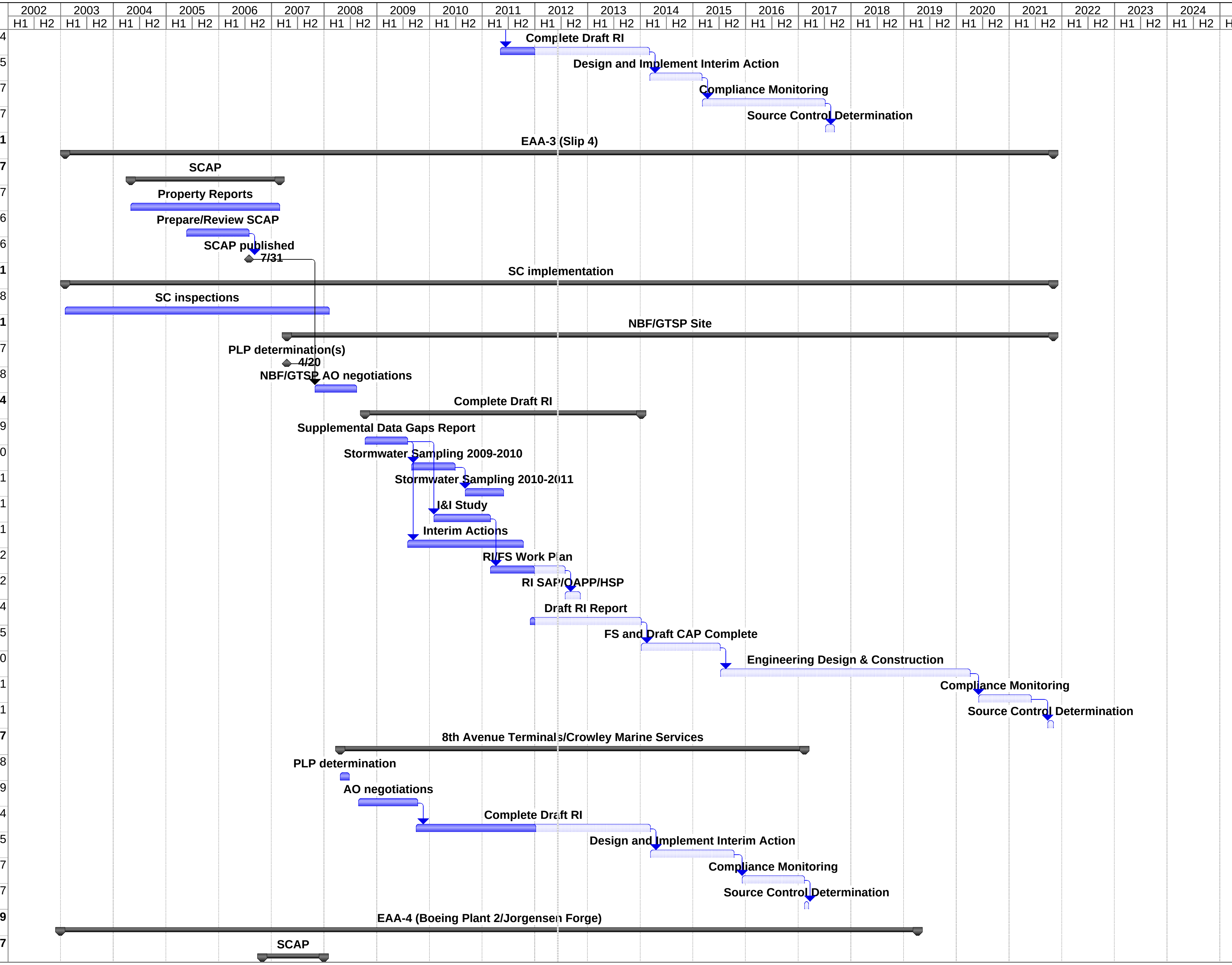
ID	Task Name	Start	Finish
1	**EAA-1 (Duwamish/Diagonal Way)**	**2/1/03**	**3/28/14**
2	**SCAP**	**2/1/03**	**12/31/04**
3	Property Reports	2/1/03	6/30/03
4	Prepare/Review SCAP	3/1/04	12/31/04
5	SCAP published	12/31/04	12/31/04
6	**SC implementation**	**1/1/05**	**3/28/14**
7	SC inspections	1/1/05	1/7/10
8	MTCA/LUST site screening & data gaps report	2/16/09	8/31/09
9	**Terminal 108**	**1/1/08**	**2/26/14**
10	SC Strategy Plan - Western Parcel	1/1/08	2/29/08
11	SC Strategy Implementation - Western Parcel	3/3/08	12/30/13
12	SC Strategy Plan - Eastern Parcel	1/3/11	3/31/11
13	SC Strategy Implementation - Eastern Parcel	3/31/11	2/26/14
14	Source Control Determination	2/26/14	3/28/14
15	**EAA-2 (Trotsky Inlet)**	**8/21/06**	**9/8/17**
16	**SCAP**	**8/21/06**	**6/29/07**
17	Data Gaps Report	8/21/06	2/28/07
18	Prepare/Review SCAP	3/1/07	6/29/07
19	SCAP published	6/29/07	6/29/07
20	**SC implementation**	**7/2/07**	**9/8/17**
21	SC inspections	7/2/07	7/6/12
22	**Industrial Container Servcs/Trotsky Property**	**1/31/08**	**9/14/15**
23	PLP determination(s)	1/31/08	7/24/08
24	AO negotiations	9/15/08	5/18/10
25	Complete Draft RI	5/19/10	5/15/13
26	Design and Implement Interim Action	5/16/13	5/15/14
27	Compliance Monitoring	7/11/14	9/14/15
28	Source Control Determination	1/12/16	11/15/16
29	**Douglas Mgmt Company**	**1/31/08**	**9/8/17**
30	PLP determination(s)	1/31/08	7/22/08
31	AO negotiations	9/15/08	5/6/11



Project: LDW SC functional level
Date: 6/6/12

Task	Progress	Summary	External Tasks	Split	
Split	Milestone	Project Summary	External MileTask		

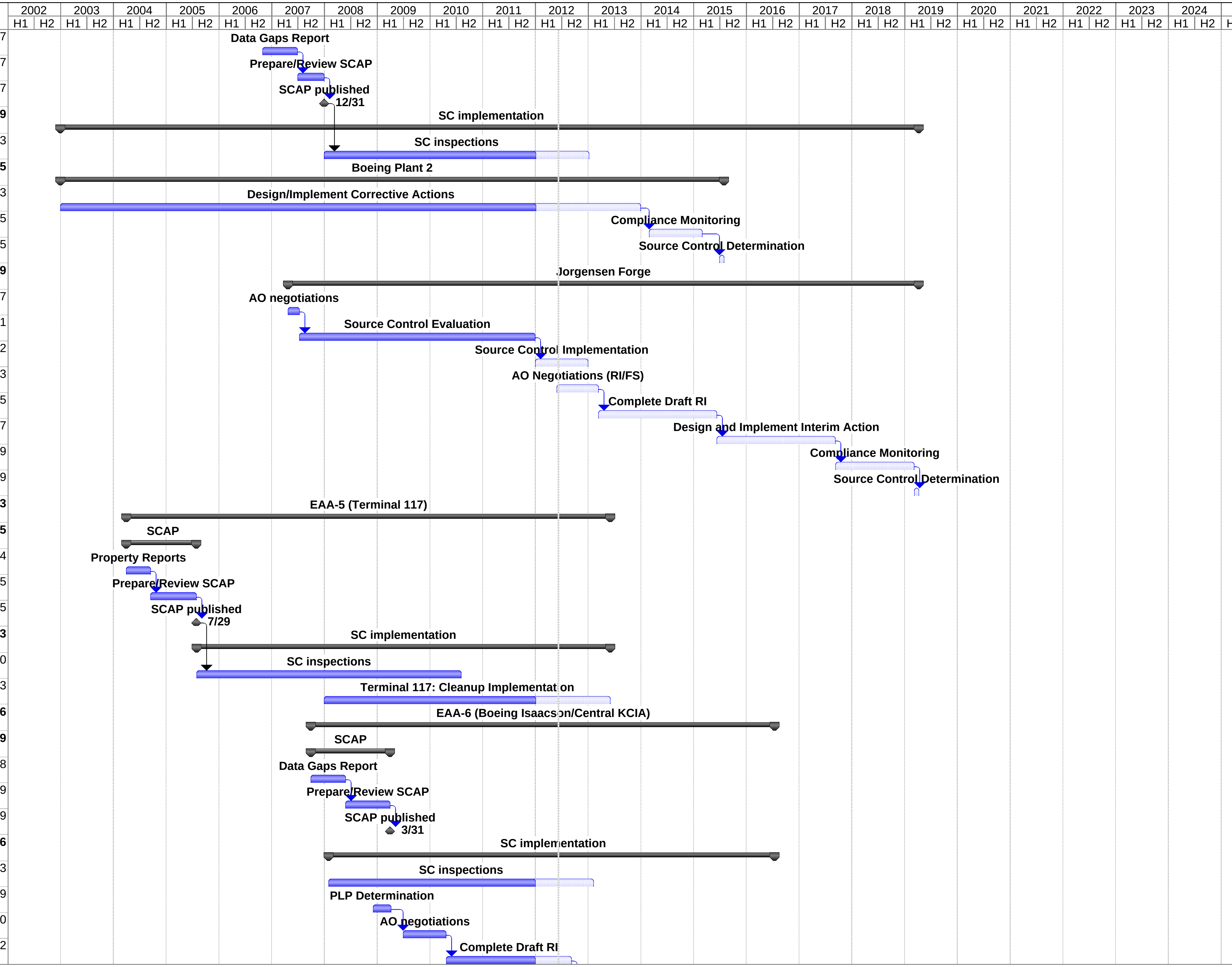
ID	Task Name	Start	Finish
32	Complete Draft RI	5/9/11	3/7/14
33	Design and Implement Interim Action	3/10/14	3/6/15
34	Compliance Monitoring	3/9/15	7/7/17
35	Source Control Determination	7/10/17	9/8/17
36	**EAA-3 (Slip 4)**	**2/3/03**	**11/5/21**
37	**SCAP**	**5/3/04**	**2/28/07**
38	Property Reports	5/3/04	2/28/07
39	Prepare/Review SCAP	5/25/05	7/31/06
40	SCAP published	7/31/06	7/31/06
41	**SC implementation**	**2/3/03**	**11/5/21**
42	SC inspections	2/3/03	2/7/08
43	**NBF/GTSP Site**	**4/20/07**	**11/5/21**
44	PLP determination(s)	4/20/07	4/20/07
45	NBF/GTSP AO negotiations	11/1/07	8/14/08
46	**Complete Draft RI**	**10/13/08**	**1/9/14**
47	Supplemental Data Gaps Report	10/13/08	8/3/09
48	Stormwater Sampling 2009-2010	9/1/09	6/28/10
49	Stormwater Sampling 2010-2011	9/7/10	5/30/11
50	I&I Study	2/2/10	2/28/11
51	Interim Actions	8/4/09	10/14/11
52	RI/FS Work Plan	3/1/11	7/30/12
53	RI SAP/QAPP/HSP	7/31/12	11/12/12
54	Draft RI Report	12/2/11	1/9/14
55	FS and Draft CAP Complete	1/10/14	7/10/15
56	Engineering Design & Construction	7/13/15	4/7/20
57	Compliance Monitoring	6/5/20	6/4/21
58	Source Control Determination	9/27/21	11/5/21
59	**8th Avenue Terminals/Crowley Marine Services**	**4/24/08**	**2/13/17**
60	PLP determination	4/24/08	6/25/08
61	AO negotiations	8/29/08	10/12/09
62	Complete Draft RI	10/2/09	3/13/14
63	Design and Implement Interim Action	3/14/14	10/14/15
64	Compliance Monitoring	12/10/15	2/13/17
65	Source Control Determination	2/14/17	3/14/17
66	**EAA-4 (Boeing Plant 2/Jorgensen Forge)**	**1/1/03**	**4/9/19**
67	**SCAP**	**11/1/06**	**12/31/07**



Project: LDW SC functional level
Date: 6/6/12

Task		Progress		Summary		External Tasks		Split	
Split		Milestone		Project Summary		External MileTask			

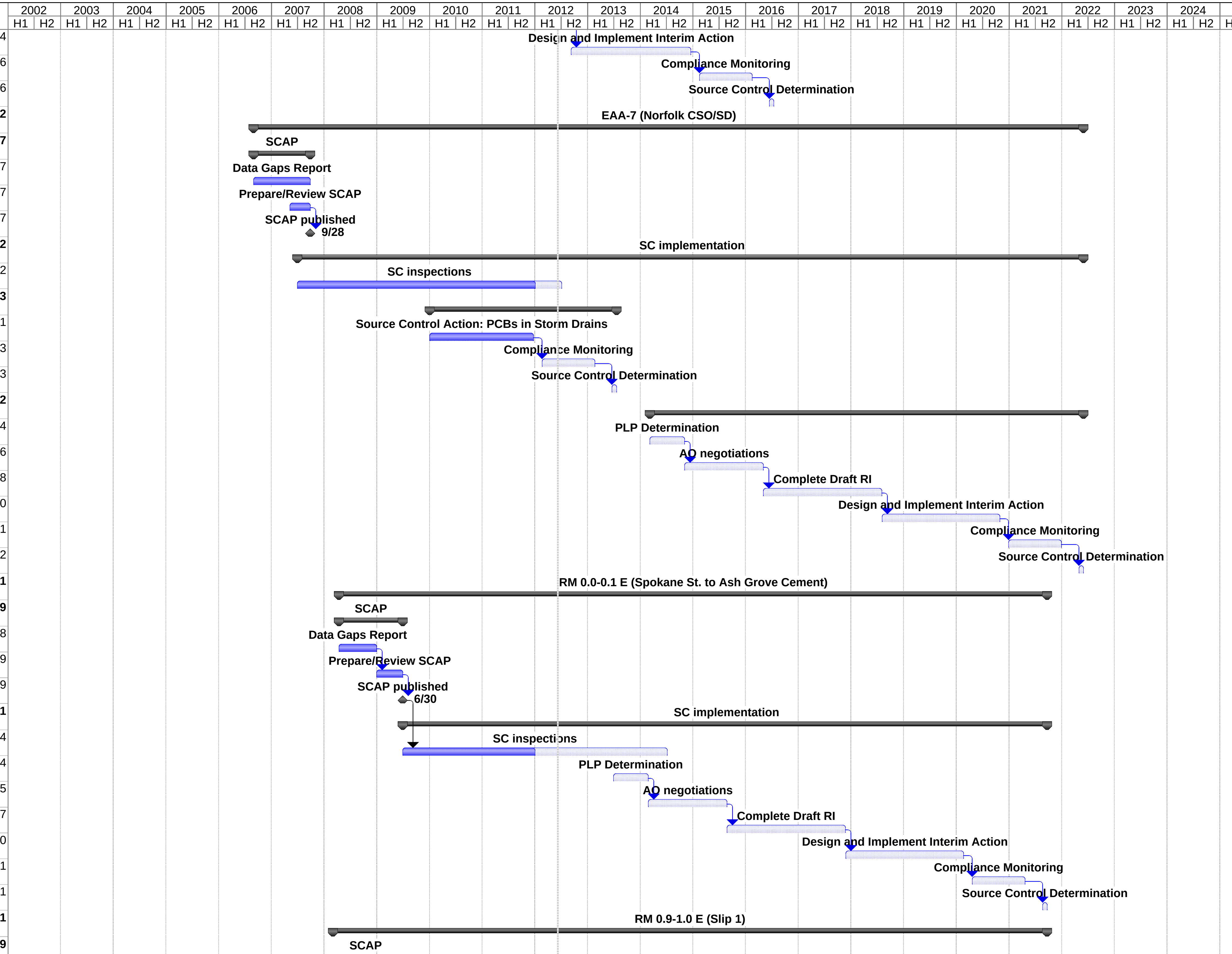
ID	Task Name	Start	Finish
68	Data Gaps Report	11/1/06	6/29/07
69	Prepare/Review SCAP	7/2/07	12/31/07
70	SCAP published	12/31/07	12/31/07
71	**SC implementation**	**1/1/03**	**4/9/19**
72	SC inspections	1/1/08	1/7/13
73	**Boeing Plant 2**	**1/1/03**	**7/31/15**
74	Design/Implement Corrective Actions	1/1/03	12/31/13
75	Compliance Monitoring	2/28/14	3/2/15
76	Source Control Determination	6/30/15	7/31/15
77	**Jorgensen Forge**	**4/26/07**	**4/9/19**
78	AO negotiations	4/26/07	7/12/07
79	Source Control Evaluation	7/13/07	12/30/11
80	Source Control Implementation	1/2/12	12/31/12
81	AO Negotiations (RI/FS)	5/30/12	3/13/13
82	Complete Draft RI	3/14/13	6/11/15
83	Design and Implement Interim Action	6/12/15	9/8/17
84	Compliance Monitoring	9/11/17	3/8/19
85	Source Control Determination	3/11/19	4/9/19
86	**EAA-5 (Terminal 117)**	**4/1/04**	**6/3/13**
87	**SCAP**	**4/1/04**	**7/29/05**
88	Property Reports	4/1/04	9/15/04
89	Prepare/Review SCAP	9/16/04	7/29/05
90	SCAP published	7/29/05	7/29/05
91	**SC implementation**	**8/1/05**	**6/3/13**
92	SC inspections	8/1/05	8/6/10
93	Terminal 117: Cleanup Implementation	1/1/08	6/3/13
94	**EAA-6 (Boeing Isaacson/Central KCIA)**	**10/1/07**	**7/15/16**
95	**SCAP**	**10/1/07**	**3/31/09**
96	Data Gaps Report	10/1/07	5/27/08
97	Prepare/Review SCAP	5/28/08	3/31/09
98	SCAP published	3/31/09	3/31/09
99	**SC implementation**	**2/1/08**	**7/15/16**
100	SC inspections	2/1/08	2/7/13
101	PLP Determination	12/5/08	4/7/09
102	AO negotiations	7/1/09	4/23/10
103	Complete Draft RI	4/26/10	9/7/12



Project: LDW SC functional level
Date: 6/6/12

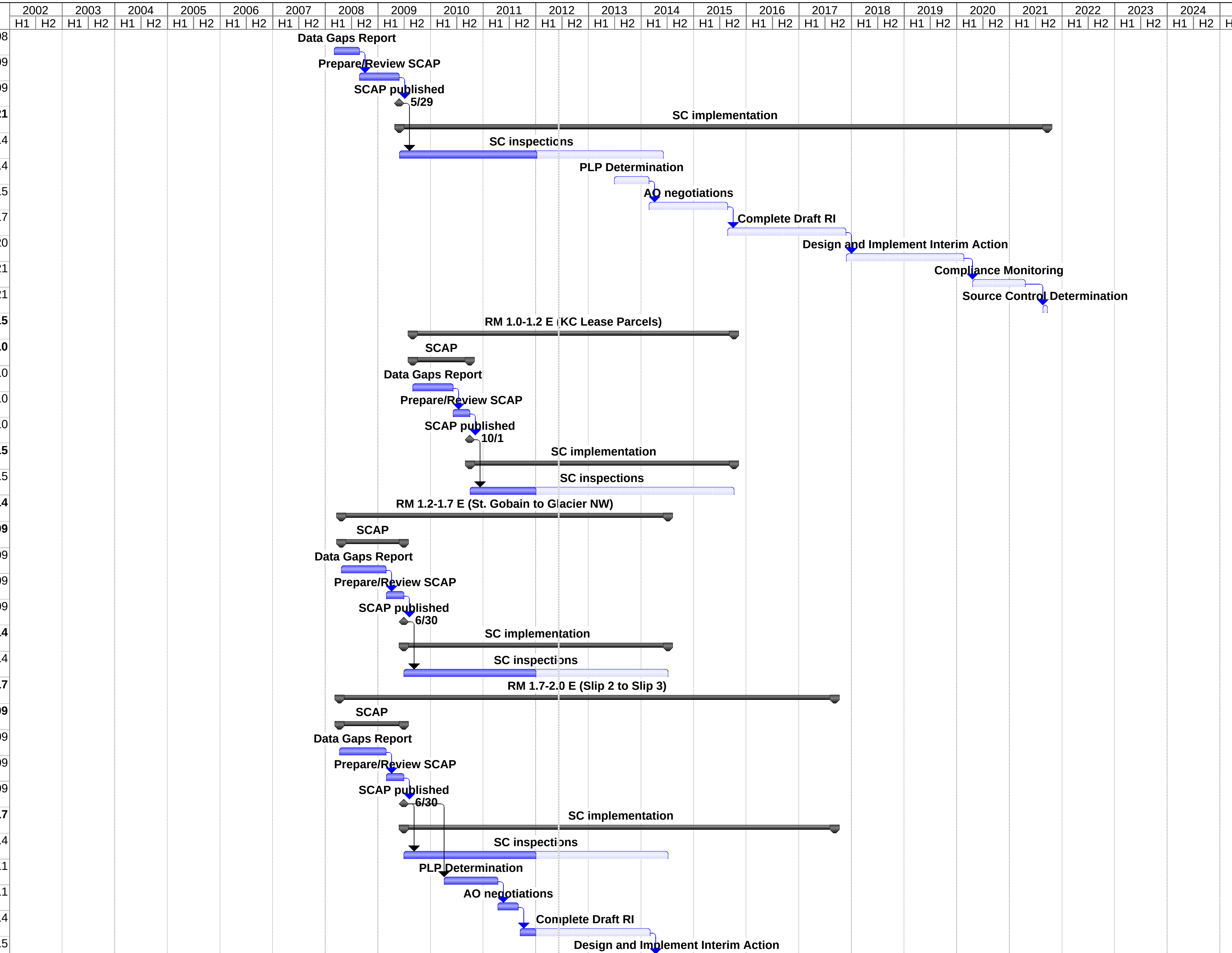
Task		Progress		Summary		External Tasks		Split	
Split		Milestone		Project Summary		External MileTask			

ID	Task Name	Start	Finish
104	Design and Implement Interim Action	9/10/12	12/18/14
105	Compliance Monitoring	2/17/15	2/17/16
106	Source Control Determination	6/16/16	7/15/16
107	**EAA-7 (Norfolk CSO/SD)**	**9/1/06**	**6/1/22**
108	**SCAP**	**9/1/06**	**9/28/07**
109	Data Gaps Report	9/1/06	9/28/07
110	Prepare/Review SCAP	5/11/07	9/28/07
111	SCAP published	9/28/07	9/28/07
112	**SC implementation**	**7/2/07**	**6/1/22**
113	SC inspections	7/2/07	7/6/12
114	**BDC South Storm Drain**	**1/4/10**	**7/22/13**
115	Source Control Action: PCBs in Storm Drains	1/4/10	12/23/11
116	Compliance Monitoring	2/22/12	2/21/13
117	Source Control Determination	6/20/13	7/22/13
118	**Facility 2**	**3/10/14**	**6/1/22**
119	PLP Determination	3/10/14	11/5/14
120	AO negotiations	11/6/14	5/4/16
121	Complete Draft RI	5/5/16	8/3/18
122	Design and Implement Interim Action	8/6/18	10/30/20
123	Compliance Monitoring	12/30/20	12/30/21
124	Source Control Determination	5/2/22	6/1/22
125	**RM 0.0-0.1 E (Spokane St. to Ash Grove Cement)**	**4/15/08**	**9/22/21**
126	**SCAP**	**4/15/08**	**6/30/09**
127	Data Gaps Report	4/15/08	12/31/08
128	Prepare/Review SCAP	1/1/09	6/30/09
129	SCAP published	6/30/09	6/30/09
130	**SC implementation**	**7/1/09**	**9/22/21**
131	SC inspections	7/1/09	7/8/14
132	PLP Determination	7/1/13	2/26/14
133	AO negotiations	2/27/14	8/26/15
134	Complete Draft RI	8/27/15	11/24/17
135	Design and Implement Interim Action	11/27/17	2/21/20
136	Compliance Monitoring	4/22/20	4/22/21
137	Source Control Determination	8/23/21	9/22/21
138	**RM 0.9-1.0 E (Slip 1)**	**3/5/08**	**9/22/21**
139	**SCAP**	**3/5/08**	**5/29/09**



Project: LDW SC functional level Date: 6/6/12	Task		Progress		Summary	
	Split		Milestone	◆	Project Summary	
	External Tasks		Split			
	External MileTask	◆				

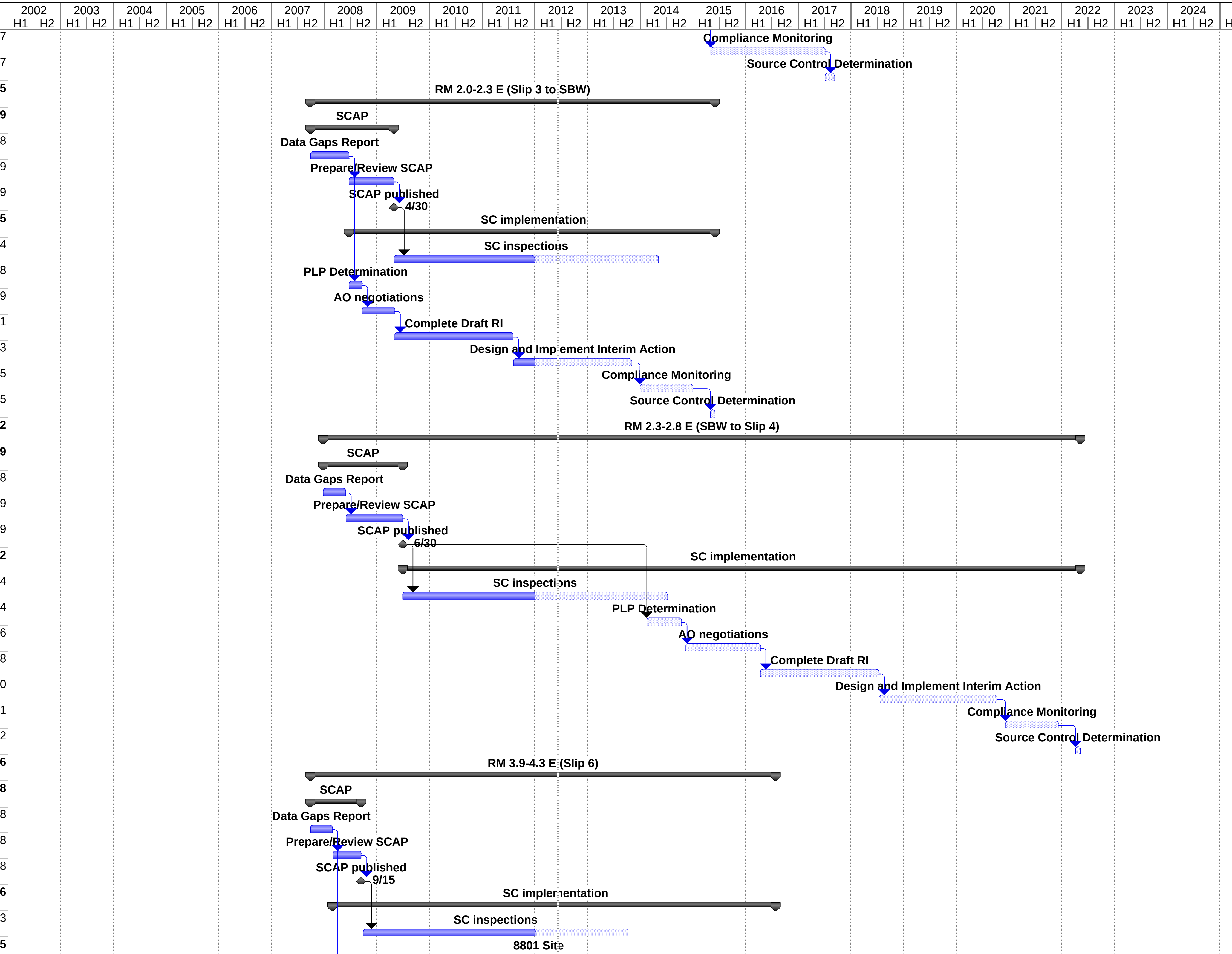
ID	Task Name	Start	Finish
140	Data Gaps Report	3/5/08	8/26/08
141	Prepare/Review SCAP	8/27/08	5/29/09
142	SCAP published	5/29/09	5/29/09
143	**SC implementation**	**6/1/09**	**9/22/21**
144	SC inspections	6/1/09	6/6/14
145	PLP Determination	7/1/13	2/26/14
146	AO negotiations	2/27/14	8/26/15
147	Complete Draft RI	8/27/15	11/24/17
148	Design and Implement Interim Action	11/27/17	2/21/20
149	Compliance Monitoring	4/22/20	4/22/21
150	Source Control Determination	8/23/21	9/22/21
151	**RM 1.0-1.2 E (KC Lease Parcels)**	**9/1/09**	**10/9/15**
152	**SCAP**	**9/1/09**	**10/1/10**
153	Data Gaps Report	9/1/09	6/7/10
154	Prepare/Review SCAP	6/8/10	10/1/10
155	SCAP published	10/1/10	10/1/10
156	**SC implementation**	**10/4/10**	**10/9/15**
157	SC inspections	10/4/10	10/9/15
158	**RM 1.2-1.7 E (St. Gobain to Glacier NW)**	**4/23/08**	**7/8/14**
159	**SCAP**	**4/23/08**	**6/30/09**
160	Data Gaps Report	4/23/08	2/27/09
161	Prepare/Review SCAP	3/2/09	6/30/09
162	SCAP published	6/30/09	6/30/09
163	**SC implementation**	**7/1/09**	**7/8/14**
164	SC inspections	7/1/09	7/8/14
165	**RM 1.7-2.0 E (Slip 2 to Slip 3)**	**4/11/08**	**9/7/17**
166	**SCAP**	**4/11/08**	**6/30/09**
167	Data Gaps Report	4/11/08	2/27/09
168	Prepare/Review SCAP	3/2/09	6/30/09
169	SCAP published	6/30/09	6/30/09
170	**SC implementation**	**7/1/09**	**9/7/17**
171	SC inspections	7/1/09	7/8/14
172	PLP Determination	4/7/10	4/14/11
173	AO negotiations	4/15/11	9/2/11
174	Complete Draft RI	9/16/11	3/6/14
175	Design and Implement Interim Action	3/7/14	3/6/15



Project: LDW SC functional level
Date: 6/6/12

Task	Progress	Summary	External Tasks
Split	Milestone	Project Summary	External MileTask
Split			

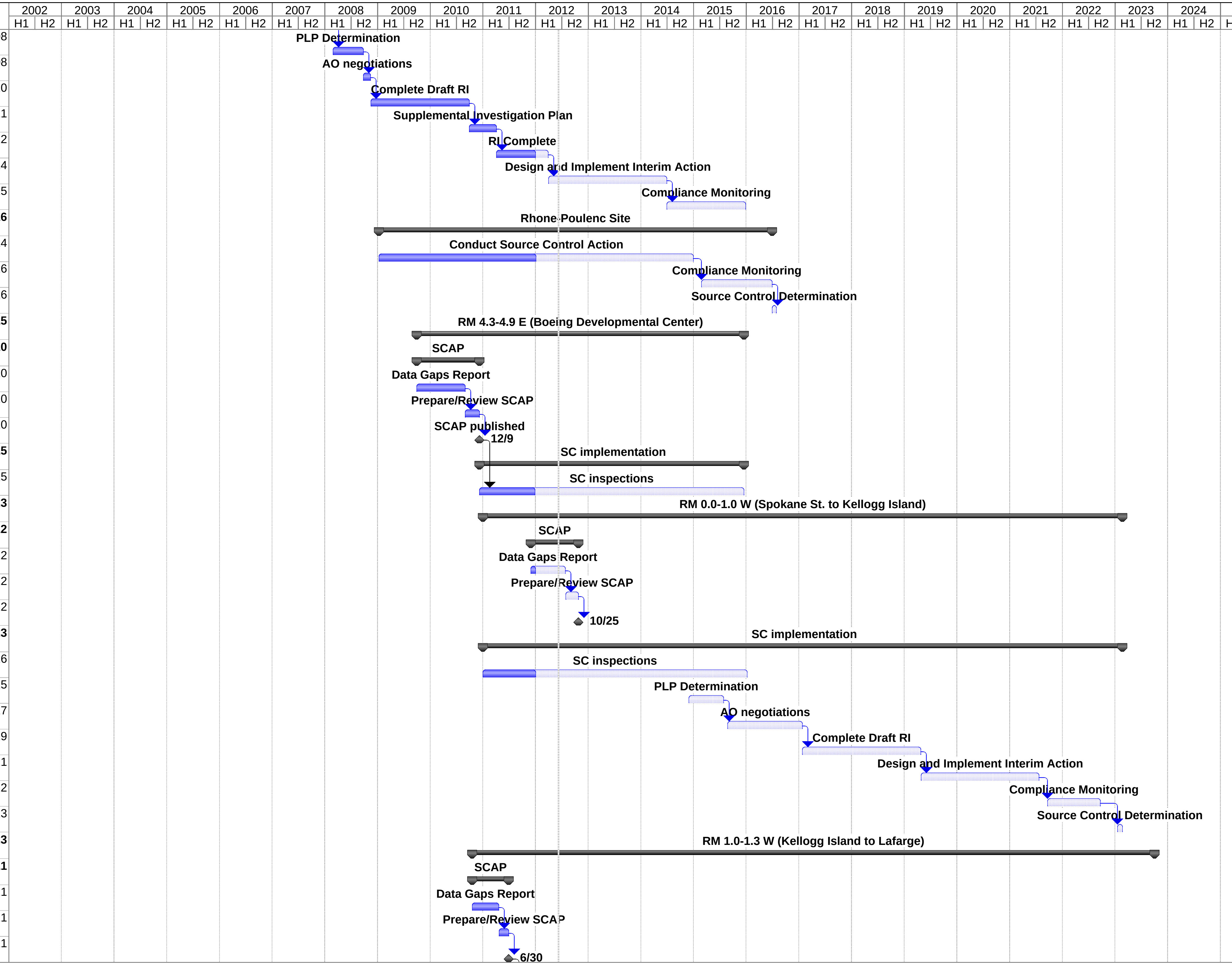
ID	Task Name	Start	Finish
176	Compliance Monitoring	5/6/15	7/6/17
177	Source Control Determination	7/7/17	9/7/17
178	**RM 2.0-2.3 E (Slip 3 to SBW)**	**10/1/07**	**6/3/15**
179	**SCAP**	**10/1/07**	**4/30/09**
180	Data Gaps Report	10/1/07	6/23/08
181	Prepare/Review SCAP	6/24/08	4/30/09
182	SCAP published	4/30/09	4/30/09
183	**SC implementation**	**6/24/08**	**6/3/15**
184	SC inspections	5/1/09	5/8/14
185	PLP Determination	6/24/08	9/22/08
186	AO negotiations	9/23/08	5/6/09
187	Complete Draft RI	5/7/09	8/5/11
188	Design and Implement Interim Action	8/8/11	11/1/13
189	Compliance Monitoring	1/1/14	1/1/15
190	Source Control Determination	5/4/15	6/3/15
191	**RM 2.3-2.8 E (SBW to Slip 4)**	**12/28/07**	**5/11/22**
192	**SCAP**	**12/28/07**	**6/30/09**
193	Data Gaps Report	12/28/07	5/30/08
194	Prepare/Review SCAP	6/2/08	6/30/09
195	SCAP published	6/30/09	6/30/09
196	**SC implementation**	**7/1/09**	**5/11/22**
197	SC inspections	7/1/09	7/8/14
198	PLP Determination	2/17/14	10/15/14
199	AO negotiations	11/13/14	4/13/16
200	Complete Draft RI	4/14/16	7/13/18
201	Design and Implement Interim Action	7/16/18	10/9/20
202	Compliance Monitoring	12/9/20	12/9/21
203	Source Control Determination	4/8/22	5/11/22
204	**RM 3.9-4.3 E (Slip 6)**	**10/1/07**	**7/29/16**
205	**SCAP**	**10/1/07**	**9/15/08**
206	Data Gaps Report	10/1/07	2/28/08
207	Prepare/Review SCAP	3/5/08	9/15/08
208	SCAP published	9/15/08	9/15/08
209	**SC implementation**	**2/29/08**	**7/29/16**
210	SC inspections	10/1/08	10/8/13
211	**8801 Site**	**2/29/08**	**12/29/15**



Project: LDW SC functional level
Date: 6/6/12

Task	Progress	Summary	External Tasks	Split
Split	Milestone	Project Summary	External MileTask	

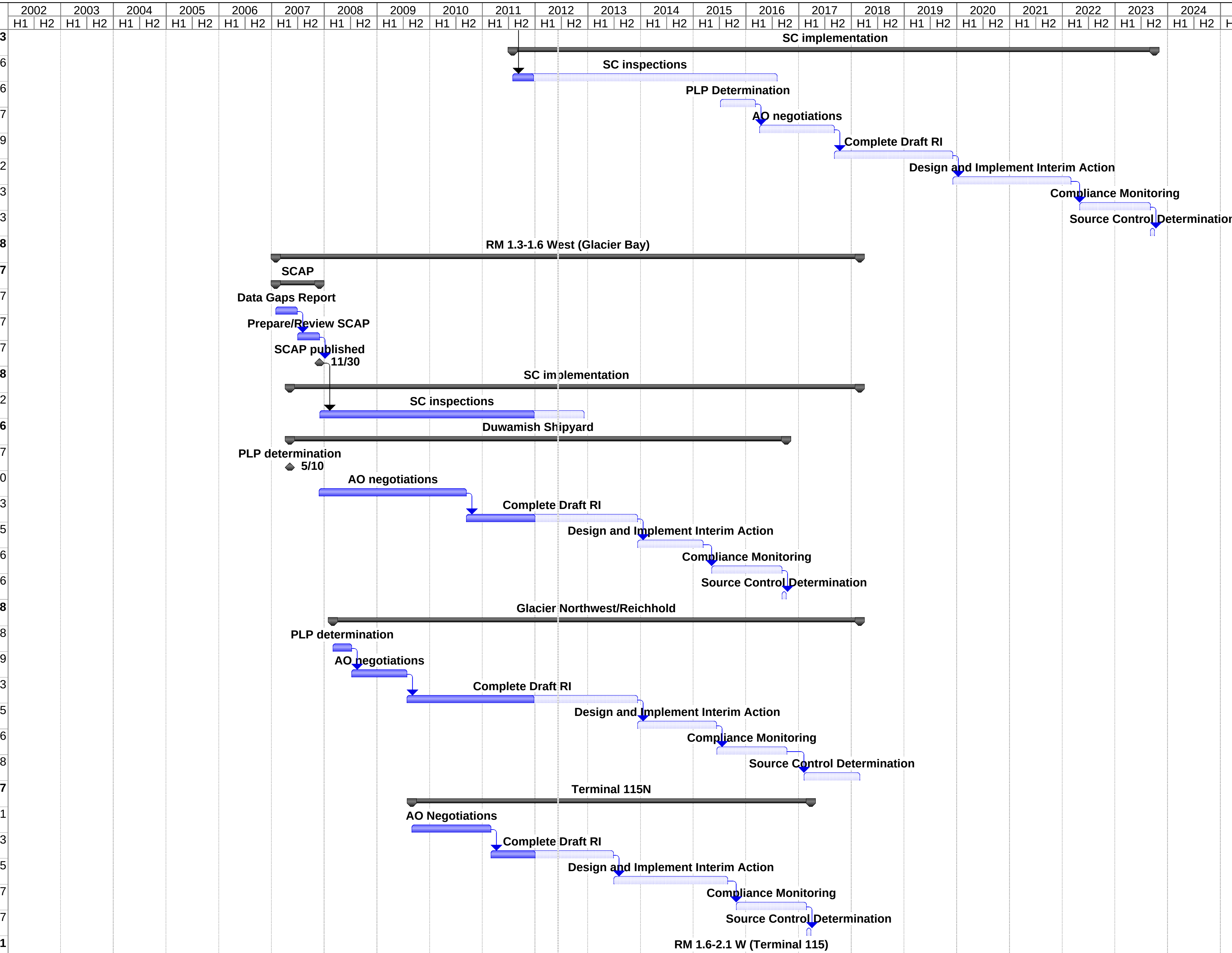
ID	Task Name	Start	Finish
212	PLP Determination	2/29/08	9/25/08
213	AO negotiations	9/26/08	11/14/08
214	Complete Draft RI	11/17/08	9/30/10
215	Supplemental Investigation Plan	10/1/10	4/6/11
216	RI Complete	4/7/11	3/30/12
217	Design and Implement Interim Action	4/2/12	6/30/14
218	Compliance Monitoring	7/1/14	12/29/15
219	**Rhone-Poulenc Site**	**1/12/09**	**6/30/16**
220	Conduct Source Control Action	1/12/09	12/31/14
221	Compliance Monitoring	2/26/15	6/30/16
222	Source Control Determination	6/30/16	7/29/16
223	**RM 4.3-4.9 E (Boeing Developmental Center)**	**10/1/09**	**12/17/15**
224	**SCAP**	**10/1/09**	**12/9/10**
225	Data Gaps Report	10/1/09	9/1/10
226	Prepare/Review SCAP	9/2/10	12/9/10
227	SCAP published	12/9/10	12/9/10
228	**SC implementation**	**12/10/10**	**12/17/15**
229	SC inspections	12/10/10	12/17/15
230	**RM 0.0-1.0 W (Spokane St. to Kellogg Island)**	**1/3/11**	**2/22/23**
231	**SCAP**	**12/1/11**	**10/25/12**
232	Data Gaps Report	12/1/11	7/27/12
233	Prepare/Review SCAP	7/30/12	10/25/12
234	SCAP Published	10/25/12	10/25/12
235	**SC implementation**	**1/3/11**	**2/22/23**
236	SC inspections	1/3/11	1/8/16
237	PLP Determination	12/1/14	7/29/15
238	AO negotiations	8/27/15	1/25/17
239	Complete Draft RI	1/26/17	4/26/19
240	Design and Implement Interim Action	4/29/19	7/23/21
241	Compliance Monitoring	9/22/21	9/22/22
242	Source Control Determination	1/20/23	2/22/23
243	**RM 1.0-1.3 W (Kellogg Island to Lafarge)**	**10/21/10**	**10/3/23**
244	**SCAP**	**10/21/10**	**6/30/11**
245	Data Gaps Report	10/21/10	4/22/11
246	Prepare/Review SCAP	4/25/11	6/30/11
247	SCAP Published	6/30/11	6/30/11



Project: LDW SC functional level
Date: 6/6/12

Task		Progress		Summary		External Tasks		Split	
Split		Milestone	◆	Project Summary		External MileTask	◆		

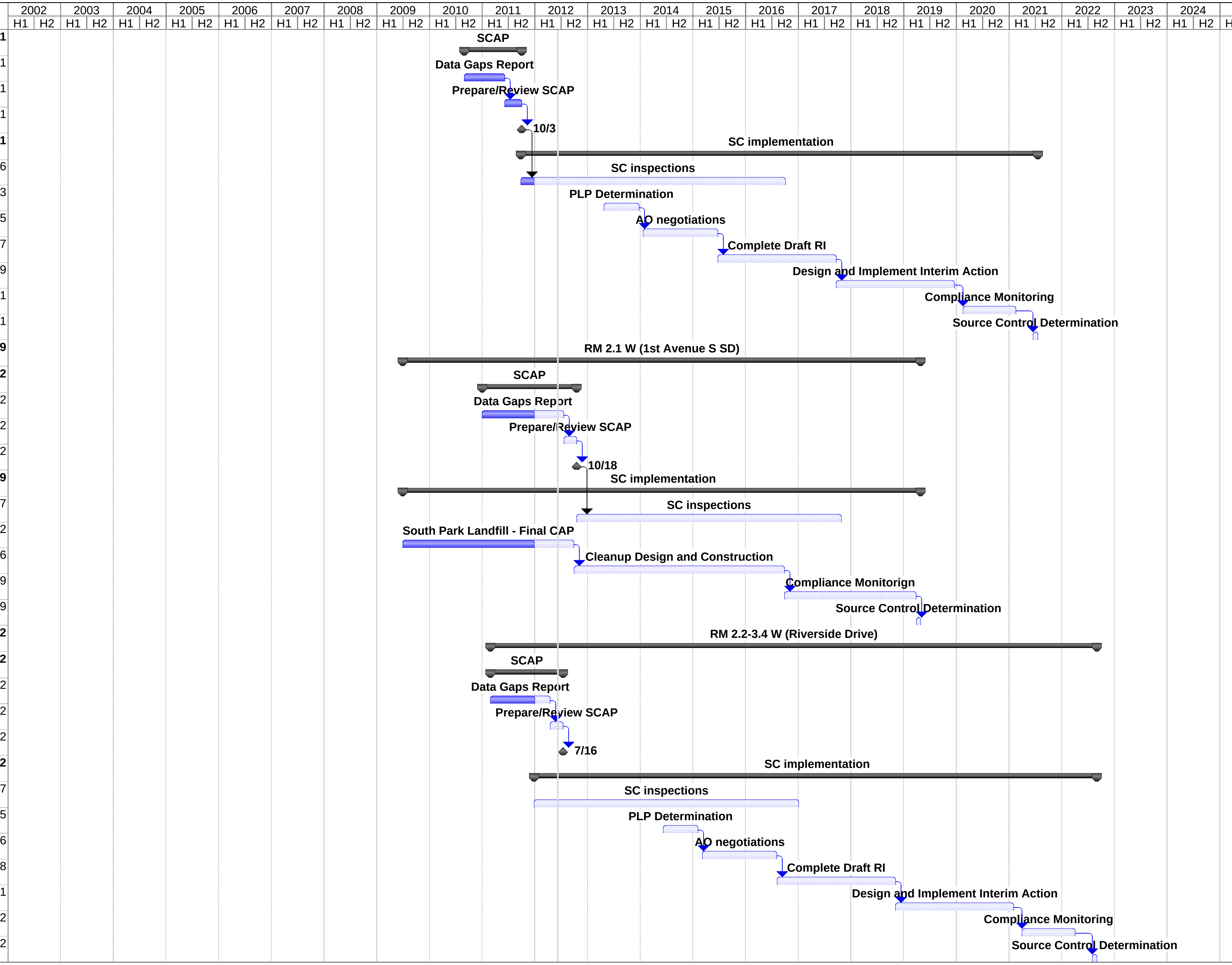
ID	Task Name	Start	Finish
248	**SC implementation**	**8/1/11**	**10/3/23**
249	SC inspections	8/1/11	8/5/16
250	PLP Determination	7/10/15	3/8/16
251	AO negotiations	4/6/16	9/5/17
252	Complete Draft RI	9/6/17	12/5/19
253	Design and Implement Interim Action	12/6/19	3/3/22
254	Compliance Monitoring	5/3/22	9/4/23
255	Source Control Determination	9/5/23	10/3/23
256	**RM 1.3-1.6 West (Glacier Bay)**	**2/1/07**	**3/1/18**
257	**SCAP**	**2/1/07**	**11/30/07**
258	Data Gaps Report	2/1/07	6/29/07
259	Prepare/Review SCAP	7/3/07	11/30/07
260	SCAP published	11/30/07	11/30/07
261	**SC implementation**	**5/10/07**	**3/1/18**
262	SC inspections	12/3/07	12/7/12
263	**Duwamish Shipyard**	**5/10/07**	**10/7/16**
264	PLP determination	5/10/07	5/10/07
265	AO negotiations	11/28/07	9/13/10
266	Complete Draft RI	9/14/10	12/12/13
267	Design and Implement Interim Action	12/13/13	3/11/15
268	Compliance Monitoring	5/11/15	9/8/16
269	Source Control Determination	9/9/16	10/7/16
270	**Glacier Northwest/Reichhold**	**3/3/08**	**3/1/18**
271	PLP determination	3/3/08	7/10/08
272	AO negotiations	7/11/08	7/28/09
273	Complete Draft RI	7/29/09	12/12/13
274	Design and Implement Interim Action	12/13/13	6/12/15
275	Compliance Monitoring	6/15/15	10/12/16
276	Source Control Determination	2/8/17	3/1/18
277	**Terminal 115N**	**9/1/09**	**3/27/17**
278	AO Negotiations	9/1/09	3/2/11
279	Complete Draft RI	3/3/11	6/28/13
280	Design and Implement Interim Action	7/1/13	8/28/15
281	Compliance Monitoring	10/28/15	2/24/17
282	Source Control Determination	2/27/17	3/27/17
283	**RM 1.6-2.1 W (Terminal 115)**	**9/1/10**	**7/20/21**



Project: LDW SC functional level
Date: 6/6/12

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External MileTask | Split

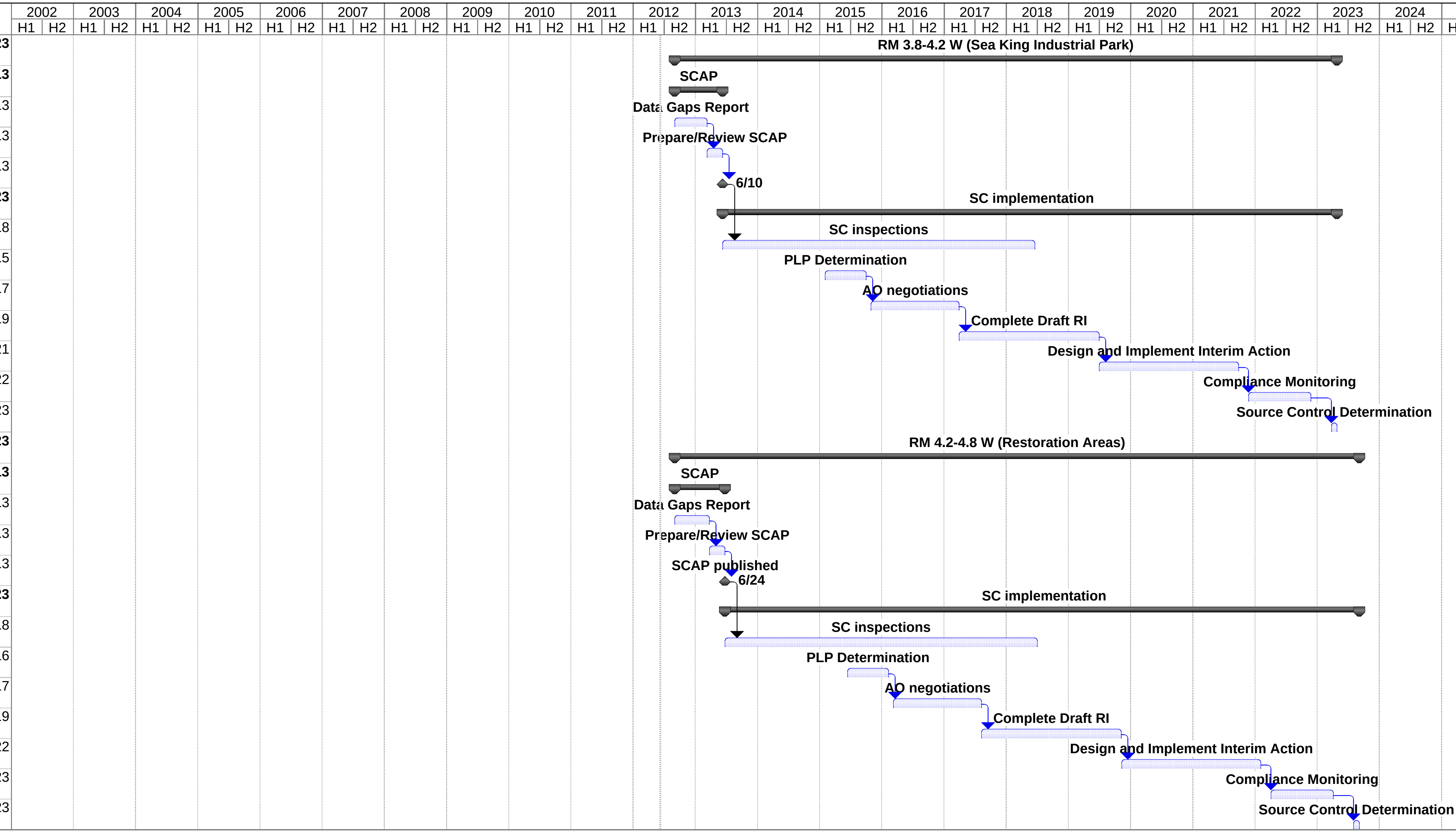
ID	Task Name	Start	Finish
284	**SCAP**	**9/1/10**	**10/3/11**
285	Data Gaps Report	9/1/10	6/7/11
286	Prepare/Review SCAP	6/8/11	10/3/11
287	SCAP Published	10/3/11	10/3/11
288	**SC implementation**	**9/28/11**	**7/20/21**
289	SC inspections	9/28/11	10/4/16
290	PLP Determination	4/26/13	12/24/13
291	AO negotiations	1/22/14	6/23/15
292	Complete Draft RI	6/24/15	9/21/17
293	Design and Implement Interim Action	9/22/17	12/19/19
294	Compliance Monitoring	2/18/20	2/17/21
295	Source Control Determination	6/17/21	7/20/21
296	**RM 2.1 W (1st Avenue S SD)**	**7/1/09**	**4/29/19**
297	**SCAP**	**1/3/11**	**10/18/12**
298	Data Gaps Report	1/3/11	7/20/12
299	Prepare/Review SCAP	7/23/12	10/18/12
300	SCAP Published	10/18/12	10/18/12
301	**SC implementation**	**7/1/09**	**4/29/19**
302	SC inspections	10/19/12	10/26/17
303	South Park Landfill - Final CAP	7/1/09	9/28/12
304	Cleanup Design and Construction	10/1/12	9/27/16
305	Compliance Monitorign	9/28/16	3/29/19
306	Source Control Determination	4/1/19	4/29/19
307	**RM 2.2-3.4 W (Riverside Drive)**	**3/1/11**	**9/2/22**
308	**SCAP**	**3/1/11**	**7/16/12**
309	Data Gaps Report	3/1/11	4/17/12
310	Prepare/Review SCAP	4/18/12	7/16/12
311	SCAP Published	7/16/12	7/16/12
312	**SC implementation**	**12/29/11**	**9/2/22**
313	SC inspections	12/29/11	1/4/17
314	PLP Determination	6/11/14	2/6/15
315	AO negotiations	3/9/15	8/5/16
316	Complete Draft RI	8/8/16	11/6/18
317	Design and Implement Interim Action	11/7/18	2/2/21
318	Compliance Monitoring	4/2/21	4/4/22
319	Source Control Determination	8/2/22	9/2/22



Project: LDW SC functional level
Date: 6/6/12

Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External MileTask

ID	Task Name	Start	Finish
320	**RM 3.8-4.2 W (Sea King Industrial Park)**	**9/3/12**	**4/27/23**
321	**SCAP**	**9/3/12**	**6/10/13**
322	Data Gaps Report	9/3/12	3/11/13
323	Prepare/Review SCAP	3/12/13	6/10/13
324	SCAP Published	6/10/13	6/10/13
325	**SC implementation**	**6/11/13**	**4/27/23**
326	SC inspections	6/11/13	6/18/18
327	PLP Determination	2/3/15	10/1/15
328	AO negotiations	10/30/15	3/30/17
329	Complete Draft RI	3/31/17	7/1/19
330	Design and Implement Interim Action	7/2/19	9/27/21
331	Compliance Monitoring	11/25/21	11/25/22
332	Source Control Determination	3/27/23	4/27/23
333	**RM 4.2-4.8 W (Restoration Areas)**	**9/3/12**	**9/6/23**
334	**SCAP**	**9/3/12**	**6/24/13**
335	Data Gaps Report	9/3/12	3/25/13
336	Prepare/Review SCAP	3/26/13	6/24/13
337	SCAP published	6/24/13	6/24/13
338	**SC implementation**	**6/25/13**	**9/6/23**
339	SC inspections	6/25/13	7/2/18
340	PLP Determination	6/15/15	2/10/16
341	AO negotiations	3/10/16	8/9/17
342	Complete Draft RI	8/10/17	11/8/19
343	Design and Implement Interim Action	11/11/19	2/4/22
344	Compliance Monitoring	4/6/22	4/6/23
345	Source Control Determination	8/4/23	9/6/23



Project: LDW SC functional level
Date: 6/6/12

Task		Progress		Summary		External Tasks		Split	
Split		Milestone		Project Summary		External MileTask			

Appendix B

SPU Source Control Inspections (October 2010 through December 2011)

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way)										
Diagonal Avenue S SD										
1-World Globes & Maps, LLC	1605 S Jackson Street	11/18/2011	Initial	N	5			3	2	Low
3 Form Light Art	4700 Ohio Avenue S, #E	12/29/2010	Initial	Y						Low
7-Eleven Store # 2360-24497C	2009 Rainier Avenue S	10/27/2010	Follow-up	--	2				2	Medium
		11/17/2010	Follow-up	--						
		12/8/2010	Follow-up	Y						
A-1 Auto Repair & Towing, Inc.	1821 Rainier Avenue S	4/20/2011	Initial	Y	12	2		6	4	Medium
ABC Towing	710 S Dakota Street	5/11/2011	Initial	Y	2	2				Low
Agar Technologies, Inc.	3820 6th Avenue S	12/10/2010	Initial	Y	4			3	1	Low
Amazon.com - Photo Lab	2646 Rainier Avenue S	1/27/2011	Initial	N						Low
American Red Cross	1900 25th Avenue S	1/5/2011	Initial	--	4				4	Low
		2/24/2011	Follow-up	Y						
Area Distributors Northwest Inc.	3623 6th Avenue S	11/17/2010	Initial	--	4			3	1	Low
		3/16/2011	Follow-up	--						
		5/10/2011	Follow-up	Y						
Atlas Supply	611 S Charlestown Street	4/5/2011	Initial	--	6	2		2	2	Low
		5/11/2011	Follow-up	Y						
Auto Care - Hand Car Wash	2800 Martin Luther King Jr Way S	2/10/2011	Initial	--	4			3	1	High
		5/10/2011	Follow-up	--						
		6/14/2011	Follow-up	Y						
Auto-Chloe System	4315 7th Avenue S	3/31/2011	Initial	Y	1		1			Medium
AutoZone #4121	306 23rd Avenue S, #100	10/25/2011	Initial	--	4			3	1	Medium
		12/5/2011	Follow-up	--						
		12/22/2011	Follow-up	Y						
Bader & Olson	601 S Andover Street	9/23/2011	Initial	--	4			3	1	Medium
		11/1/2011	Follow-up	Y						
Ballard Organics	2028 21st Avenue S	10/21/2010	Follow-up	Y	3				3	Medium
Bamboo Hardwoods Inc.	510 S Industrial Way	8/19/2011	Initial	--	6			3	3	Low
		9/27/2011	Follow-up	--						
		11/16/2011	Follow-up	Y						
Bamboo Hardwoods Manufacturing Co	4100 4th Avenue S	8/19/2011	Initial	--	7			3	4	Medium
		9/27/2011	Follow-up	--						
		10/21/2011	Follow-up	Y						
Bank of America	2301 S Jackson Street, #103	1/5/2011	Screening	--						none
Banzai Sushi	3623 6th Avenue S	11/17/2010	Initial	Y						Low

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Bartell Drugs Distribution	4140 East Marginal Way S	8/5/2011	Initial	--	5			3	2	Medium
		9/16/2011	Follow-up	Y						
Big Leaf Manufacturing Co.	1128 Poplar Place S	1/21/2011	Initial	--	5			3	2	Low
		3/17/2011	Follow-up	--						
		3/22/2011	Follow-up	Y						
Big People Scooters	3861 1st Avenue S	12/3/2010	Initial	--	3			3		Low
		12/27/2010	Follow-up	Y						
Blanchard Auto Electric/Automotive Service Co.	640 S Spokane Street	11/22/2011	Initial	Y						Medium
Bokrosh Studio	1905 22nd Avenue S	11/19/2010	Initial	Y						Low
Budd & Co.	800 Rainier Avenue S	11/22/2010	Initial	N	2				2	Low
Builder's Hardware and Supply	1516 15th Avenue S	10/3/2011	Audit	N						Low
Burger King - Rainier	2021 Rainier Avenue S	10/21/2011	Initial	--	3			3		Medium
		12/13/2011	Follow-up	N						
Burger Madness	4117 4th Avenue S	11/16/2011	Initial	Y						Low
C & C Food Store	3002 Beacon Avenue S	12/15/2011	Initial	Y	21	5		9	7	Low
C & G Wines	2028 21st Avenue S	11/17/2010	Initial	Y						Low
Carpet Liquidators Inc.	4400 4th Avenue S	6/15/2011	Initial	Y						Low
Cascade Designs	3800 1st Avenue S	11/29/2011	Initial	Y	13	7		3	3	Medium
		11/29/2011	Initial	Y	9	4		3	2	High
		11/29/2011	Initial	Y	1				1	High
		11/29/2011	Initial	Y	7	1		3	3	Medium
Cascade Fuel Oil Distributing Company	925 Hiawatha Place S	1/5/2011	Initial	--	4	1			3	Medium
		2/17/2011	Follow-up	Y						
Catholic Community Services of King County	100 23rd Avenue S	12/8/2011	Initial	Y	2				2	Low
Cellular Northwest LLC	2301 S Jackson Street	1/5/2011	Screening	--						None
Charlies Produce	3844 2nd Avenue S	10/6/2011	Initial	Y	10			5	5	Medium
Charlies Produce	4103 2nd Avenue S	10/6/2011	Initial	Y	11			5	6	Medium
Chau's Complete Auto Repair	509 Rainier Avenue S	11/18/2010	Initial	--	4			2	2	Medium
		1/14/2011	Follow-up	--						
		1/25/2011	Follow-up	Y						
Christine Pham	2326 Rainier Avenue S	1/26/2011	Initial	--	1				1	Low
		4/20/2011	Follow-up	Y						
City Commerce Park	3849 1st Avenue S	10/11/2010	Initial	--	3				3	Low
		12/8/2010	Follow-up	--						

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
City Commerce Park	3849 1st Avenue S	1/6/2011	Follow-up	Y						
City of Seattle - OCC	2700 Airport Way S	3/16/2011	Follow-up	Y	15	3		2	10	High
Clark Communications LLC	2301 S Jackson Street, #100	1/5/2011	Screening	--						NA
CMARR	1216 S Weller Street	11/10/2011	Initial	N						
Concept Asia Food Services LLC	1222 S Weller Street	1/6/2011	Initial	--	4			3	1	Low
		2/24/2011	Follow-up	--						
		4/20/2011	Follow-up	Y						
Control Contractors Inc.	5300 Denver Avenue S	1/28/2011	Initial	--	3			3		Low
		3/17/2011	Follow-up	Y						
Crosscut Hardwoods	4100 1st Avenue S	9/23/2011	Initial	--	5			3	2	Medium
		11/1/2011	Follow-up	Y						
Dan Byrne	1100 E Newton Street	12/14/2010	Initial	--						
		2/10/2011	Follow-up	Y						Low
Deeny Construction Co. Inc.	2545 Rainier Avenue S	1/6/2011	Initial	Y	9	2		6	1	Medium
Dere Auto	1818 Rainier Avenue S	11/10/2011	Initial	--	8	4		3	1	Medium
		12/22/2011	Follow-up	Y						
Dilettante Chocolates	2021 22nd Avenue S	10/27/2010	Follow-up	--	7	2		3	2	Medium
		11/17/2010	Follow-up	Y						
Douglas Insurance	2301 S Jackson Street, #213	1/5/2011	Screening	--						None
East African Imports	2301 S Jackson Street, #205	1/5/2011	Screening	--						None
Ed Wyse Beauty Supply	3701 7th Avenue S	3/31/2011	Initial	--	6			3	3	Low
		5/11/2011	Follow-up	Y						
Fast Rabbits	2822 Martin Luther King Jr Way S	12/16/2010	Initial	--	6			3	3	Low
		2/24/2011	Follow-up	Y						
Fiberlay	24 S Idaho Street	11/18/2011	Initial	N						High
FleetPride	600 S Dakota Street	8/30/2011	Initial	--	7	4		3		Medium
		10/12/2011	Follow-up	Y						
Food Lifeline	4011 6th Avenue S	8/22/2011	Initial	--	6			3	3	Medium
		10/24/2011	Follow-up	--						
		10/26/2011	Follow-up	Y						
Franks Quality Produce Inc.	612 S Alaska Street	10/17/2011	Initial	--	3			3		Medium
		12/21/2011	Follow-up	Y						
Franz Family Bakeries	2006 S Weller Street	12/2/2010	Initial	--	6			2	4	Medium
		12/16/2010	Follow-up	Y						
FSI	4601 6th Avenue S	10/17/2011	Initial	--	2				2	Medium
		11/22/2011	Follow-up	Y						

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Georgetown Brewing Co.	5200 Denver Avenue S	10/21/2010	Follow-up	Y	7			3	4	High
Glassworks	927 Rainier Avenue S	1/27/2011	Initial	--	8	4	1	3		Low
		3/31/2011	Follow-up	Y						
Grand Central Baking Company	4634 East Marginal Way S, #C110	10/14/2010	Initial	--	3	1		1	1	Low
		11/19/2010	Follow-up	Y						
Granite Pro	700 Rainier Avenue S	11/19/2010	Initial	--	1		1			Low
		2/24/2011	Follow-up	Y						
Grease Monkey #481	2101 23rd Avenue S	10/21/2010	Follow-up	--	3	1	1		1	Medium
		11/8/2010	Follow-up	--						
		12/2/2010	Follow-up	Y						
Green Depot Wa Pacific Coast LLC	4121 1st Avenue S	11/29/2011	Initial	N	1	1				Medium
Gretchen's Shoebox Express	3922 6th Avenue S	8/19/2011	Initial	--	9			3	6	High
		9/27/2011	Follow-up	--						
		10/20/2011	Follow-up	Y						
Hello Bicycle	3067 Beacon Avenue S	11/19/2010	Initial	--	3			3		Low
		12/1/2010	Follow-up	Y						
Honolulu Freight Service	2326 Airport Way S	9/23/2011	Initial	NA						
HQ Building Supply	1423 S Dearborn Street	11/9/2011	Initial	NA						
Hui-Intertrading Inc.	2100 22nd Avenue S	10/1/2010	Initial	--	5			3	2	Medium
		11/15/2010	Follow-up	--						
		12/22/2010	Follow-up	Y						
International Sign	2914 S Mc Clellan Street	11/8/2010	Initial	--	8	3		3	2	Medium
		1/28/2011	Follow-up	--						
		2/4/2011	Follow-up	Y						
International Truck Leasing & Rental	3801 7th Avenue S	5/11/2011	Initial	Y	3			1	2	Low
IsGood Woodworks	4660 East Marginal Way S, #7	11/10/2011	Initial	--	6	1		3	2	Low
		12/16/2011	Follow-up	Y						
Island Detail	308 14th Avenue S	11/3/2011	Initial	Y	1	1				Low
Jackson Cleaners	2301 S Jackson Street, #211	1/5/2011	Initial	--	3			3		Low
		2/10/2011	Follow-up	Y						
Jefferson Park Horticulture	4101 Beacon Avenue S	9/20/2011	Initial	--	5			1	4	Medium
		11/4/2011	Follow-up	Y						
Jet Parts Engineering, Inc.	4772 Ohio Avenue S	11/16/2011	Screening	--						NA
Jon-Don	4111 Airport Way S	10/21/2011	Initial	--	3			3		Low
		11/29/2011	Follow-up	Y						
Joy Unlimited	2301 S Jackson Street, #104	1/5/2011	Screening	--						NA

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Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
K2 Sports	4201 6th Avenue	9/22/2011	Initial	--	4	1			3	Medium
		11/3/2011	Follow-up	Y						
Kellan's Motor Works	1501 S Dearborn Street	1/21/2011	Initial	--	5			4	1	Medium
		3/3/2011	Follow-up	Y						
Kim Ling Investment Co.	1222 S Weller Street	2/11/2011	Initial	Y						Low
King County Sheriff	4623 7th Avenue S	4/5/2011	Initial	Y	10	3		3	4	Low
King's Oriental Foods Co. Ltd	1238 S Weller Street	12/10/2010	Initial	Y	3				3	Low
L & K Holdings LLC	2000 23rd Avenue S	10/26/2011	Initial	--	1				1	Low
		12/22/2011	Follow-up	Y						
L.N. Curtis & Sons	629 S Industrial Way	11/3/2011	Initial	Y						Medium
Leduc Packaging, Inc.	4424 4th Avenue S	6/16/2011	Initial	--	1				1	Low
		7/13/2011	Follow-up	Y						
Lowe's Home Improvement Warehouse	2700 Rainier Avenue S	1/27/2011	Initial	--	10			3	7	High
		3/4/2011	Follow-up	--						
		6/29/2011	Follow-up	--						
		7/15/2011	Follow-up	--						
		8/10/2011	Follow-up	--						
		8/18/2011	Follow-up	--						
		8/31/2011	Follow-up	--						
		9/6/2011	Follow-up	Y						
MacMillan Piper Inc.	655 S Edmunds Street	11/15/2010	Follow-up	--	44	6		9	29	High
		11/15/2010	Follow-up	Y						
Magic Dragon Chinese Eatery	306 23rd Avenue S, #102	10/25/2011	Initial	--	3			3		Medium
		11/29/2011	Follow-up	Y						
Magnum Print Solutions	633 S Snoqualmie Street	11/16/2011	Initial	--	4			3	1	Medium
		12/21/2011	Follow-up	Y						
Mallory & Church	676 S Industrial Way	10/21/2011	Initial	--	4			2	2	Low
		11/29/2011	Follow-up	Y						
Martin Luther King 76	2801 Martin Luther King Jr Way S	11/8/2010	Initial	--	6	1	1	2	2	High
		12/16/2010	Follow-up	--						
		1/28/2011	Follow-up	Y						
MDE Engineers, Inc.	700 S Industrial Way	11/3/2011	Initial	Y	7	1		3	3	Medium
Merlino Foods	4100 4th Avenue S	10/21/2011	Initial	--	7	1		3	3	Medium
		12/5/2011	Follow-up	N						
Mi La Cay	718 Rainier Avenue S	11/18/2011	Initial	--	5			3	2	Low
		12/28/2011	Follow-up	Y						

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Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Mobile Equipment Systems	2120 Airport Way S	11/1/2011	Initial	Y	4	1		3		Medium
Modelwerks	655 S Andover Street	9/27/2011	Initial	N	3	1			2	Low
Moonlight Cafe	1919 S Jackson Street	11/3/2011	Initial	N	5			3	2	Medium
Mutual Fish Co. Inc.	2335 Rainier Avenue S	12/10/2010	Initial	--	8			3	5	Medium
		1/21/2011	Follow-up	--						
		2/10/2011	Follow-up	Y						
Mygrant Glass Company	4321 7th Avenue S	11/22/2011	Initial	N	1				1	Low
Nieder MFG Co	2814 Martin Luther King Jr Way S	2/24/2011	Initial	--	2				2	Low
		4/8/2011	Follow-up	Y						
North Star Casteel	3901 9th Avenue S	11/16/2011	Follow-up	Y	35	11	1	6	17	High
Northwest Oriental Foods	20 S Idaho Street	11/16/2011	Initial	N	3			3		Low
Northwest Tofu Inc	1911 S Jackson Street	11/4/2011	Initial	N	3			2	1	Low
NW School of Karate	2301 S Jackson Street, #210	1/5/2011	Screening	--						None
Oberto Sausage Company	1715 Rainier Avenue S	1/19/2011	Initial	--	4			3	1	Low
		3/4/2011	Follow-up	Y						
Oreilly's Auto Parts	2805 Rainier Avenue S	11/10/2011	Initial	N	3			1	2	High
Papa Murphy's Pizza	306 23rd Avenue SE, #101	10/25/2011	Screening	--						Low
Pawn X-Change	2825 Rainier Avenue S	1/27/2011	Initial	--	1				1	Low
		4/20/2011	Follow-up	Y						
Pedersen's Rentals & Sales	4500 4th Avenue S	6/16/2011	Initial	--	5			3	2	Medium
		8/2/2011	Follow-up	Y						
Pental Granite & Marble Inc.	3623 6th Avenue S	11/29/2010	Initial	Y						Low
Plantscapes Horticultural Services	1127 Poplar Place S	3/17/2011	Initial	--	23	5		3	15	Medium
		4/28/2011	Follow-up	Y						
Plastics for Lighting, Inc.	4069 1st Avenue S	11/29/2011	Initial	Y						Low
Prologis	4200 East Marginal Way S	9/9/2011	Initial	N						Low
Promenade 23 Shopping Center	2301 S Jackson Street, #101A	1/5/2011	Initial	--	8			3	5	Medium
		2/10/2011	Follow-up	--						
		3/3/2011	Follow-up	--						
		3/9/2011	Follow-up	Y						
Promenade Red Apple Market	2301 S Jackson Street	1/5/2011	Initial	--	7	1		1	5	Medium
		2/10/2011	Follow-up	--						
		4/15/2011	Follow-up	--						
		4/27/2011	Follow-up	--						
		5/4/2011	Follow-up	Y						

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Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
QFC	2707 Rainier Avenue S	10/1/2010	Initial	--	10			4	6	Medium
		11/9/2010	Follow-up	Y						
Rainier Ave Chevron	2802 Rainier Avenue S	11/8/2010	Initial	--	11	7		1	3	Medium
		12/22/2010	Follow-up	--						
		1/6/2011	Follow-up	Y						
Rainier Chiropractic	2326 Rainier Avenue S	1/26/2011	Screening	--						None
Rainier McDonald's #435	2336 25th Avenue S	12/10/2010	Initial	--	9			3	6	Medium
		1/25/2011	Follow-up	--						
		3/3/2011	Follow-up	Y						
Rainier Plaza #2 LLC	3800 Rainier Avenue S	10/1/2010	Initial	--	2				2	Low
		10/21/2010	Follow-up	Y						
Rainier Veterinary Hospital	815 Rainier Avenue S	2/7/2011	Initial	Y	1				1	Low
Ralph's Concrete Pumping - Rainier	1511 Rainier Avenue S	3/11/2011	Initial	--	4			1	3	High
		4/27/2011	Follow-up	Y						
Ralph's Concrete Pumping - Poplar	816 Poplar Place S	3/11/2011	Initial	--	11	1		4	6	High
		4/29/2011	Follow-up	--						
		5/11/2011	Follow-up	Y						
Recycling Depot	851 Rainier Avenue S	10/1/2010	Initial	--	19			6	13	High
		11/18/2010	Follow-up	--						
		11/16/2011	Initial	--						
		11/29/2011	Follow-up	N						
Remo Borracchini's	2307 Rainier Avenue S	12/10/2010	Initial	--	5				5	Medium
		1/25/2011	Follow-up	--						
		2/7/2011	Follow-up	--						
		3/14/2011	Follow-up	Y						
Resolute	4660 Ohio Avenue S, #C	11/16/2011	Initial	--	3			3		Low
		12/22/2011	Follow-up	Y						
Rite Aid #5224	2707 Rainier Avenue S	10/1/2010	Initial	--	7	1	1	3	2	Low
		11/15/2010	Follow-up	Y						
RockTenn Recycling & Waste Solutions	4050 East Marginal Way S	8/2/2011	Initial	--	4			1	3	Medium
		9/14/2011	Follow-up	Y						
Rodda Paint	3838 4th Avenue S	3/31/2011	Initial	Y						Medium
Royal Glass Co., Inc.	1216 S Weller Street	12/10/2010	Initial	Y	3				3	Low
Schooner Exact Brewing Co.	3901 1st Avenue S	10/11/2010	Initial	--	5		1	3	1	Low
		11/15/2010	Follow-up	Y						

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Schwartz Brothers Bakery Seattle	619 S Nevada Street	10/21/2011	Initial	--	4			1	3	High
		12/5/2011	Follow-up	--						
		12/14/2011	Follow-up	--						
		12/29/2011	Follow-up	Y						
Scientific Supply & Equipment Inc.	619 S Snoqualmie Street	12/10/2010	Initial	Y						Low
Seattle Goodwill	1400 S Lane Street	7/15/2011	Initial	--	23	7		5	11	High
		9/6/2011	Follow-up	Y						
Seattle Marathon Assn	4773 Colorado Avenue S	11/15/2011	Screening	--						None
Seattle Radiator Works	5011 Ohio Avenue S	4/6/2011	Initial	--	4	2			2	Medium
		5/20/2011	Follow-up	--						
		6/2/2011	Follow-up	Y						
Seven Star Mini Mart	1917 S Jackson Street	11/3/2011	Initial	N	3			3		Low
Shed Seattle LLC	1401 S Jackson Street	10/15/2010	Screening	--						None
Siemens Water Tech Corp	601 S Snoqualmie Street	10/17/2011	Initial	Y						Medium
South Seattle Business Park	4634 East Marginal Way S	10/14/2010	Initial	--	3			3		Low
		11/19/2010	Follow-up	Y						
Speedway Collision Service Center	1801 Rainier Avenue S	10/1/2010	Initial	--	6	1		3	2	Medium
		11/9/2010	Follow-up	Y						
Spiral Sign & Awning	3814 4th Avenue S, #10	12/10/2010	Initial	NA						
SPUD.com	8 S Idaho Street	5/10/2011	Initial	--	2				2	Low
		9/7/2011	Follow-up	N						
Starbucks Coffee Company	2921 Martin Luther King Jr Way	1/14/2011	Initial	--	6			3	3	Low
		4/20/2011	Follow-up	Y						
Stella Color	620 S Dakota Street	12/10/2010	Initial	--	3			3		Low
		12/20/2010	Follow-up	Y						
Subway	2301 S Jackson, #201	1/14/2011	Initial	N						Low
Subway	2338 Rainier Avenue S	1/26/2011	Screening	--						None
Sun Sun Oriental Food Co.	1328 S Weller Street	10/26/2011	Initial	--	4				4	Low
		12/21/2011	Follow-up	Y						
Superior Imprints Inc.	4226 6th Avenue S	10/20/2011	Initial	N	3			3		Medium
Taco Del Mar	2301 S Jackson Street	1/5/2011	Screening	--						None
Taco Time	2212 Rainier Avenue S	1/19/2011	Initial	--	4			3	1	Low
		3/15/2011	Follow-up	Y						
Takisaki Inc.	1312 S Weller Street	12/1/2010	Initial	Y	1				1	Low
Tea Garden	708 Rainier Avenue S	11/18/2011	Initial	N	7			3	4	Medium
The Field Roast Grain Meat Co.	1440 S Jackson Street	10/14/2011	Initial	--	6	1	1	3	1	Medium
		11/22/2011	Follow-up	Y						

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Tiny's Organic	4660 East Marginal Way S, #5	11/10/2011	Initial	--	3			3		Low
		12/15/2011	Follow-up	Y						
Titan Outdoor LLC	4636 East Marginal Way S	10/14/2010	Initial	--	4			3	1	Low
		1/14/2011	Follow-up	--						
		3/11/2011	Follow-up	Y						
TnT Letterpress Trade Inc	4701 Colorado Avenue S	12/29/2010	Initial	Y						Low
Tom Bihn Inc.	4750 Ohio Avenue S, #A	11/16/2011	Initial	N						Low
Top Kitchen and Granite		11/9/2011	Initial	Y	4			3	1	Medium
Toure Apparel	2301 S Jackson Street, #207	1/5/2011	Screening	--						None
Triage Wines	4755 Colorado Avenue S, #A	11/15/2011	Screening	--						Low
True Fabrications	14 S Idaho Street	11/2/2010	Follow-up	--	3			3		Low
		11/23/2010	Follow-up	Y						
Two Beers Brewing Co.	4700 Ohio Avenue S, #A	12/15/2010	Initial	--	4		1	3		Medium
		1/28/2011	Follow-up	Y						
US Bank	2910 Rainier Avenue S	1/14/2011	Initial	--	1				1	Low
		3/4/2011	Follow-up	Y						
Uwajimaya	4601 6th Avenue S	10/17/2011	Initial	--	2				2	Low
		11/22/2011	Follow-up	Y						
Valley Gear & Transmission, Inc.	1543 Rainier Avenue S	1/6/2011	Initial	Y	1				1	Medium
Vans Metal Spinning	1819 S Jackson Street	10/14/2011	Initial	--	8	2		3	3	Medium
		12/21/2011	Follow-up	N						
Victor's Granite & Marble LLC	4660 East Marginal Way S, #16	11/16/2011	Initial	N	6			3	3	Medium
Walgreen Store # 03632	2400 S Jackson Street	11/22/2011	Initial	--	3			3		Low
		12/29/2011	Follow-up	Y						
Weingarten Realty	303 24th Avenue S	5/25/2011	Initial	--	1				1	Low
		12/16/2011	Follow-up	Y						
Wendy's Old Fashioned Hamburgers #1556	2543 Rainier Avenue S	1/6/2011	Initial	--	5			3	2	Medium
		2/10/2011	Follow-up	--						
		3/3/2011	Follow-up	Y						
Western Beauty Supply	2301 S Jackson Street, #203	1/5/2011	Screening	--						None
Western Waterproofing Co., Inc.	4429 Airport Way S	4/20/2011	Initial	--	3			2	1	Medium
		6/23/2011	Follow-up	Y						
Whole Foods Market Distribution Center	4250 East Marginal Way S	8/3/2011	Initial	--	2			2		Medium
		9/14/2011	Follow-up	Y						
Nevada Street SD										
B & G Machine Inc.	11 S Nevada Street	5/10/2011	Initial	Y						Medium

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Seattle Habitat for Humanity	21 S Nevada Street	10/26/2011 12/21/2011	Initial Follow-up	-- Y	3	2		1		Low
Duwamish/Diagonal CSO										
Can Do Services Pacific NW	53 S Dawson Street	2/17/2011 5/10/2011	Initial Follow-up	-- Y	4			3	1	Low
Jefferson Park Golf Course Clubhouse	4101 Beacon Avenue S	8/8/2011	Initial	Y	15	1		6	8	Low
Jefferson Park Golf Course Maintenance Building	4101 Beacon Avenue S	8/8/2011	Initial	Y	24	7		7	10	Low
Jorve Roofing	3215 Martin Luther King Jr Way S	12/14/2011	Initial	NA						
Loomis	5200 East Marginal Way S	2/2/2011 5/10/2011	Initial Follow-up	-- Y	10	1		6	3	Low
McKinstry Company	4800 Denver Avenue S	10/15/2010 12/27/2010 1/20/2011	Follow-up Follow-up Follow-up	-- -- Y	9	2	1	1	5	Low
Seattle Collision Center	1752 Rainier Avenue S	1/19/2011 1/20/2011 3/8/2011	Initial Follow-up Follow-up	-- -- Y	3				3	Medium
Seattle Injector Company	1410 Airport Way S	11/16/2010	Follow-up	NA						
Universal Auto Body & Services	1209 E Fir Street	12/21/2011	Initial	NA						
Wilcor Grounding Systems	4045 7th Avenue S	12/14/2010 2/3/2011 3/1/2011	Initial Follow-up Follow-up	-- -- Y	4			3	1	Low
RM 1.2-1.7 East (Saint Gobain to Glacier Northwest)										
Duwamish East Direct										
Certainteed Gypsum	5931 East Marginal Way S	10/5/2010 12/10/2010	Initial Follow-up	-- Y	9	1		1	7	High
Saint Gobain Containers	5801 East Marginal Way S	10/28/2010 3/22/2011	Follow-up Follow-up	-- Y	10	2		2	6	Medium
RM 1.7-2.0 East (Slip 2 to Slip 3)										
Duwamish East Direct (Slip 2 Outfall)										
Whole Foods Markets Select Fish	5980 1st Avenue S	4/15/2011 6/9/2011	Initial Follow-up	-- Y	6			3	3	Medium
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)										
S River Street SD										
Seattle Cabinet & Design LLC	6533 3rd Avenue S	11/3/2010 12/27/2010	Initial Follow-up	-- N	3			3		Low

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
S Brighton Street SD										
Gentle Giant Moving Company LLC	6783 East Marginal Way S	12/1/2010	Initial	N						Low
Seattle Schools- Science Materials center	6795 East Marginal Way S	12/1/2010	Initial	--	3			3		Low
		12/15/2010	Follow-up	Y						
Shultz Distributing Inc - Marginal	6851 East Marginal Way S	10/4/2010	Follow-up	Y	13		4	3	6	High
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)										
S Garden Street SD										
United Rentals	7135 8th Avenue S	3/4/2011	Initial	--	10	2		2	6	High
		4/21/2011	Follow-up	--						
		5/2/2011	Follow-up	--						
		5/25/2011	Follow-up	--						
		6/15/2011	Follow-up	N						
RM 2.8 East (EAA-3: Slip 4)										
Slip 4										
Marginal Way ARCO	7200 East Marginal Way S	2/4/2011	Initial	--	5	1		3	1	Medium
		3/4/2011	Follow-up	Y						
UltraBlock Inc.	1615 S Graham Street	6/2/2011	Initial	Y	3			3		Medium
First Student	7400 8th Avenue S	11/18/2010	Follow-up	--	3			2	1	High
		12/15/2010	Follow-up	Y						
RM 4.9 East (EAA-7: Norfolk CSO/SD)										
Norfolk CSO/SD										
Alpha Cine Laboratory	9800 40th Avenue S	12/15/2010	Screening	--						Medium
Frank Coluccio Construction - Main	9600 Martin Luther King Jr Way S	4/22/2011	Initial	Y	9	1		3	5	Low
Frank Coluccio Construction - Yard	9850 Martin Luther King Jr Way S	4/22/2011	Initial	--	8	3		3	2	Medium
		7/18/2011	Follow-up	--						
		10/12/2011	Follow-up	--						
		10/27/2011	Follow-up	Y						
Harrington Industrial Plastics	4322 S 104th Place	1/26/2011	Screening	--						
JCM U-Link, Joint Venture	9645 Martin Luther King Jr Way S	5/12/2011	Initial	N						Low
Nelson Trucking	9747 M L King Jr Way S	2/23/2011	Initial	--	14	1		4	9	High
		4/6/2011	Follow-up	--						
		5/3/2011	Follow-up	Y						
NW Kidney Center	9700 M L King Jr Way S	8/23/2011	Initial	Y	8	1		4	3	Low
Ohno Construction Company	9416 Martin Luther King Jr Way S	5/12/2011	Initial	--	15	3		4	8	Medium
		6/23/2011	Follow-up	Y						
Renato's Auto	9830 Martin Luther King Jr Way S	4/14/2011	Initial	--	7	2		3	2	Medium
		5/27/2011	Follow-up	Y						

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Special Asphalt Products Inc	9243 Martin Luther King Jr Way S	10/19/2010	Follow-up	--	14	2		3	9	High
		10/27/2010	Follow-up	--						
		11/18/2010	Follow-up	--						
		12/2/2010	Follow-up	Y						
Starline Inc	9801 Martin Luther King Jr Way S	10/28/2010	Follow-up	Y	3			1	2	Medium
Steeler Inc	10023 Martin Luther King Jr Way S	5/12/2011	Initial	--	18	1		4	13	High
		6/23/2011	Follow-up	--						
		7/14/2011	Follow-up	--						
		7/20/2011	Follow-up	--						
		8/23/2011	Follow-up	--						
		9/20/2011	Follow-up	Y						
The January Company	9844 40th Avenue S	7/22/2011	Initial	--	6			6		High
		7/26/2011	Follow-up	--						
		8/23/2011	Follow-up	Y						
Traylor Frontier-Kemper JV	9224 Martin Luther King Jr Way S	8/23/2011	Initial	--	9	1		4	4	Medium
		10/6/2011	Follow-up	Y						
Wall & Ceiling	9830 40th Avenue S	1/10/2011	Screening	--						None
RM 0.0-1.0 West (Spokane St to Kellogg Island)										
SW Idaho Street SD										
Penthouse Drapery	4033 16th Avenue SW	10/28/2010	Follow-up	Y	6	1		3	2	Low
South Seattle Community College	6000 16th Avenue SW	6/6/2011	Initial	--	10	1		3	6	High
		7/14/2011	Follow-up	--						
		8/5/2011	Follow-up	--						
		9/12/2011	Follow-up	--						
		10/6/2011	Follow-up	Y						
RM 1.3-1.6 West (Glacier Bay)										
Duwamish West Direct										
Chemithon	5430 West Marginal Way SW	11/22/2010	Initial	Y	4		1	1	2	High
RM 1.6-2.1 West (Terminal 115)										
Highland Park Way SD										
Versatile Drilling	7201 Detroit Avenue SW	8/30/2011	Initial	--	2			1	1	Medium
		10/6/2011	Follow-up	Y						
RM 2.1 West (1st Avenue S SD)										
1st Avenue S SD (West)										
Demolition Man Inc 8129	8129 Occidental Avenue S	9/28/2011	Initial	--	7	2		3	2	Medium
		11/10/2011	Follow-up	Y						

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
Demolition Man Inc 8151	8151 Occidental Avenue S	9/28/2011	Initial	--	5			3	2	Medium
		11/10/2011	Follow-up	Y						
First Student Inc.	7739 1st Avenue S	11/3/2010	Initial	--	6		2	2	2	Medium
		12/15/2010	Follow-up	--						
		2/14/2011	Follow-up	--						
		4/11/2011	Follow-up	Y						
International Construction Equipment	8101 Occidental Avenue S	11/3/2011	Initial	N	6	1	1	3	1	High
Samson Tug and Barge	7600 2nd Avenue SW	11/9/2010	Follow-up	--	4	1		1	2	Medium
		1/6/2011	Follow-up	Y						
Seaport Food Mart	7801 Detroit Avenue SW	11/18/2010	Follow-up	Y	6		1	3	2	Medium
Seaport Petroleum	7800 Detroit Avenue SW	2/7/2011	Initial	--	12	2		2	8	High
		2/23/2011	Follow-up	--						
		4/6/2011	Follow-up	--						
		6/3/2011	Follow-up	Y						
Vista Pro Automotive	7951 2nd Avenue S	12/1/2010	Initial	--	2			1	1	Low
		12/20/2010	Follow-up	Y						
W & O Supply Inc	7745 1st Avenue S	8/30/2011	Initial	--	5			3	2	Medium
		10/6/2011	Follow-up	Y						
Waste Management of Seattle	8101 1st Avenue S	9/28/2011	Initial	Y						High
WM - Healthcare Solutions, Inc.	149 SW Kenyon Street	9/20/2011	Initial	N						Medium
RM 2.1-2.2 West (EAA-2: Trotsky Inlet)										
Trotsky Inlet										
Cunningham Manufacturing	318 S Webster Street	5/27/2011	Initial	Y	7			3	4	Low
Ferguson Construction Inc.	7433 5th Avenue S	4/6/2011	Initial	--	3			1	2	Low
		5/20/2011	Follow-up	Y						
Fox Plumbing & Heating	7501 2nd Avenue S	8/30/2011	Initial	--	7			3	4	Medium
		10/13/2011	Follow-up	--						
		10/24/2011	Follow-up	Y						
United Iron Works	7421 5th Avenue S	12/3/2010	Follow-up	Y	8	1		2	5	High
2nd Avenue S SD										
Flashmark Tech	501 S Elmgrove Street	6/16/2011	Initial	Y						Low
Jon's Recycling	7620 2nd Avenue S	10/1/2010	Follow-up	--	13	3		2	8	High
		11/29/2010	Follow-up	N						
Meeco Manufacturing	432 S Cloverdale Street	9/28/2011	Initial	--	6			3	3	Medium
		11/10/2011	Follow-up	--						
		12/14/2011	Follow-up	--						
		12/23/2011	Follow-up	Y						

Appendix B: SPU Source Control Inspections (October 2010 through December 2011)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions*	HW	IW	SP	SW	Rank
RM 2.2-3.4 West (Riverside Drive)										
7th Avenue S SD										
Marine Lumber Service	525 S Chicago Street	11/9/2010	Follow-up	--	1				1	High
		9/7/2011	Follow-up	N						
Modern Machine Co.	524 S Southern Street	5/27/2011	Initial	--	7	2		1	4	High
		7/26/2011	Follow-up	--						
		8/2/2011	Follow-up	--						
		8/22/2011	Follow-up	--						
		8/30/2011	Follow-up	Y						
Northwest Building Tech	215 S Austin Street	10/5/2010	Initial	Y						Low
8th Avenue S CSO										
National Products Inc.	1025 S Elmgrove Street	12/8/2010	Initial	Y						
South Park 76th Station	8819 14th Avenue S	12/28/2010	Follow-up	NA						
RM 3.8-4.2 West (Sea King Industrial Park)										
S 96th Street SD										
Atacs Products Inc.	850 S Cambridge Street	10/21/2010	Follow-up	Y	3			3		Low
Avidex	860 S Cambridge Street	11/16/2010	Follow-up	NA						
		9/7/2011	Follow-up							
Filterfresh Seattle	9243 10th Avenue S	11/16/2010	Follow-up	Y	4			3	1	Low
Halfon Candy Co. Inc.	9229 10th Avenue S	10/22/2010	Follow-up	--	3			3		NA
		11/10/2010	Screening	--						
Heavy Haul Specialists	829 S Director Street	11/15/2010	Screening	--						None
Johnson Western Gunite Company	833 S Director Street	11/5/2010	Initial	--	2			2		Low
		11/30/2010	Follow-up	Y						
Keithly Electric Co.	827 S Director Street	11/5/2010	Initial	N						Low
Progressive Fastening Inc	837 S Director Street	12/8/2010	Initial	Y						Medium

* Total number of corrective, including those identifed 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: Adapted from spreadsheets provided by Ellen Stewart, SPU, to Mark Edens and Dan Cargill, Ecology.

Appendix C

Ecology Source Control Inspections
(October 2010 through December 2011)

Appendix C: Ecology Source Control Inspections (October 2010 through December 2011)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way)				
WAR004650	Alaska Street Reload & Recycling	70 S Alaska Street	November 16, 2011	Investigation of wastewater discharges to the storm drainage system.
			November 17, 2011	Complaint investigation of wheel wash and track-out.
No Permit	Bloch Steel	4580 Colorado Avenue S	October 20, 2010	Permit determination inspection determined an ISGP was required. Facility was required to submit a permit application within 30 days.
			December 9, 2010	Follow-up permit determination inspection. Drop boxes and uncovered bins were removed and exposure eliminated. ISGP not required due to facility modifications.
No Permit	Fleet Pride West Inc Seattle	600 S Dakota Street	August 30, 2011	Issues include: proper storage of product and waste, proper disposal of waste, improve spill response, and general housekeeping. Follow-up inspection noted that past issues have been addressed, but two waste streams need testing: sand blast grit and hot tank wastewater. Not in compliance.
			November 7, 2011	
WAR125420	Georgetown Brewing Co	5200 Denver Avenue S	January 14, 2011	CNE Denied
			June 2, 2011	Permit determination inspection. Application submitted and coverage was granted in September, 2011.
			August 31, 2011	Permit determination inspection. Permit required.
No Permit	International Truck Lease and Rental	3801 7th Avenue S	December 15, 2010	Follow-up to 3/3/2009 Urban Waters inspection. Outstanding issues: product/waste storage and diesel tank berming. Compliance achieved letter sent 2/3/2011.
No Permit	Messenger Corporation	37 S Hudson Street	April 27, 2011	Permit determination inspection. Eligible for a CNE.
WAR011355	North Star Casteel	820 S Bradford Street	November 16, 2011	Urban Waters inspection. Monitoring location reviewed and determined to be adequate.
No Permit	Pacific Publishing	636 S Alaska Street	January 14, 2011	CNE Approved
No Permit	Ralphs Concrete	1529 Rainier Avenue S	November 17, 2011	Urban Waters joint inspection with SPU. Facility not a covered category but may be a significant contributor of pollutants to surface waters. Coordination w/ SPU is necessary.
No Permit	Ralph's Concrete	816 Poplar Place S	December 14, 2011	Urban Waters joint inspection with SPU. Facility not a covered category but may be a significant contributor of pollutants to surface waters. Coordination w/ SPU is necessary.
WAR000015	Recycling Depot	851 Rainier Avenue S	November 16, 2011	NPDES ISGP compliance inspection w/ EPA and SPU. Several ISGP compliance issues were found. Coordination of follow-up necessary.
WAR125419	Rock-Tenn	4050 East Marginal Way S	November 17, 2011	Urban Waters inspection.
No Permit	Schooner Exact Brewing	3901 1st Avenue S	January 14, 2011	CNE Approved

Appendix C: Ecology Source Control Inspections (October 2010 through December 2011)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
RM 1.7-2.0 East (Slip 2 to Slip 3)				
WAR125423	Duwamish Metal Fabrication	16 S Michigan Street	August 31, 2011	Permit determination inspection determined an ISGP was required. Facility was required to submit a permit application within 30 days. Application received in September 2011 and permit coverage granted on October 28, 2011.
WAR010447	General Biodiesel	6333 1st Avenue S	March 1, 2011	Urban Waters inspection to review outside storage of drums and totes.
			April 5, 2011	NPDES ISGP compliance inspection. Warning letter issued to update SWPPP.
			April 19, 2011	Follow-up to verify that drums and totes stored outside were properly provided with cover and containment.
WAR011484	Samson Tug & Barge Seattle Facility	6361 1st Avenue S	November 9, 2010	NPDES ISGP compliance inspection. Installation of Truck Wheel wash system was discussed.
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)				
WA0031968	Seattle Iron and Metals	601 S Myrtle Street	January 25, 2011	NPDES compliance inspection.
			March 30, 2011	Urban Waters inspection.
			September 14, 2011	Urban Waters inspection. Track-out onto Myrtle Street documented.
RM 2.8 East (EAA-3: Slip 4)				
WAR002641	Emerald Services	7343 East Marginal Way S	October 7, 2010	NPDES ISGP compliance inspection. Update of SWPPP and improvements to wash pad were required.
No Permit	Envelope Converting Service	6603 Ursula Place S	July 12, 2011	Issues include: proper storage, spill response, proper disposal of waste, housekeeping. May need ISGP. Compliance achieved letter sent 9/28/2011.
WAR124990	First Student 8th Avenue	7400 8th Avenue S	April 5, 2011	Urban Waters inspection to determine if NPDES ISGP coverage was obtained. Permit was issued in March 2011.
No Permit	Garagetuner Import Auto Repairs and Service	6327 18th Avenue S	August 2, 2011	Issues include: proper storage of product/waste, improve spill response, housekeeping. Compliance achieved.
No Permit	Georgetown Steam Plant	6640 Ellis Avenue S	August 4, 2011	NPDES construction stormwater inspection.
WAR000343	King County International Airport	7277 Perimeter Road S	October 12, 2010	Complaint investigation of turbid water flowing from lift station. Nothing found.
			February 2, 2011	NPDES ISGP compliance and permit review. Facility needs to implement Level 3 corrective actions and modify coverage to include whole airport.
			November 9, 2011	NPDES ISGP compliance inspection and permit review.
No Permit	Slip 4		October 20, 2011	Urban Waters inspection.
No Permit	Tire Distribution Systems	6311 Corgiat Drive S	July 12, 2011	Issues include: storm drain cleanout needed, improve spill response, washing, housekeeping. Compliance achieved letter sent 9/28/2011.
No Permit	UltraBlock	1615 S Graham Street	June 2, 2011	Permit determination inspection. Follow-up required.

Appendix C: Ecology Source Control Inspections (October 2010 through December 2011)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
No Permit	Washington Produce Inc	1622 S Graham Street	August 2, 2011	Issues include: spill response, housekeeping, washing. Compliance achieved letter sent 9/28/2011.
RM 2.8-3.7 East (EAA-4: Boeing Plant 2 to Jorgensen Forge)				
WAR001219	Airgas Norpac	7700 14th Avenue S	October 26, 2011	NPDES ISGP compliance inspection. Level 3 corrective action treatment was installed by September 30, 2010 permit deadline.
WAR000482 WAR012502	Boeing Plant 2	7755 East Marginal Way S	January 25, 2011	NPDES Construction Stormwater inspection. Status of Plant 2 demolition and stormwater treatment was reviewed.
RM 3.7-3.9 East (EAA-6: Boeing Isaacson/Central KCIA)				
WAR000148	Boeing Thompson	8770 East Marginal Way S	November 2, 2010	NPDES ISGP compliance inspection. Update of site map was required.
RM 4.9 East (EAA-7: Norfolk CSO/SD)				
No Permit	Affordable Auto Wrecking	9750 Martin Luther King Jr Way S	December 7, 2010	Permit determination inspection confirmed that no industrial stormwater flows to surface waters or storm drains and ISGP not required.
No Permit	Alpha Cine Laboratory Inc	9800 40th Avenue S	December 15, 2010	Issues include: clean storm drains, properly store product/waste, spill response, housekeeping. Compliance achieved letter sent 3/29/2011.
No Permit	Fairn & Swanson Inc	9875 40th Avenue S	January 10, 2011	Formerly Dietzgen Corp. Issues include: washing practices, housekeeping, storm drain cleaning. Compliance achieved letter mailed 2/11/2011.
No Permit	HD Supply Waterwork Ltd 3010	10013 Martin Luther King Way S	January 25, 2011	Issues include: storage of waste and product, disposal of waste, storm drain cleanout and housekeeping. Compliance achieved letter sent 3/23/2011.
WAR125005	MacDonald Miller Fab Shop	3701 S Norfolk Street	July 6, 2011	NPDES ISGP compliance inspection. Monitoring locations reviewed and changed.
WAR125421	Nelson Trucking	9777 Martin Luther King Jr Way S	February 28, 2011	Issues include: storage of product and waste, spill response procedures, proper washing practices, housekeeping. Stormwater permit needed. Compliance achieved on 5/18/2011.
			May 3, 2011	Permit determination inspection. Application submitted and coverage was granted in August, 2011.
No Permit	Ness & Campbell Crane Inc	10200 East Marginal Way S	June 22, 2011	Issues include: properly store product, clean spills, improve spill response, housekeeping, storm drain structure cleaning, stormwater permit needed. Compliance achieved on 5/18/2011.
WAR125428	Northwest Gourmet Foods	9620 Martin Luther King Jr Way S	December 7, 2010	Permit determination inspection. Application submitted and coverage was granted in January, 2011.
No Permit	Northwest Kidney Center	9700 Martin Luther King Jr Way S	August 23, 2011	Issues include: permit for discharge to sewer, proper storage of product and waste, improve spill response procedures, housekeeping, washing, storm drain cleaning. Compliance achieved letter sent on 11/30/2011.

Appendix C: Ecology Source Control Inspections (October 2010 through December 2011)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
No Permit	Ohno Construction Company	9416 Martin Luther King Jr Way S	May 12, 2011	Issues include: properly store waste and product, disposal of waste, housekeeping, storm drain cleanout, discharge permit, spill response. Compliance achieved letter sent 7/21/2011.
No Permit	Pacific Grip and Lighting	10401 Martin Luther King Jr Way S	March 1, 2011	Issues include: underground storage tank, proper storage of product and waste, housekeeping. Compliance achieved on 5/16/2011.
No Permit	Spacesaver NW LLC	9877 40th Avenue S	January 10, 2011	Issues include: properly dispose of waste, washing practices, spill response, housekeeping, storm drain cleaning. Compliance achieved 4/8/2011.
WAR125646	Special Asphalt Products	9243 Martin Luther King Jr Way S	October 19, 2010	Permit determination inspection. Permit applied for and coverage granted 3/13/2012.
			August 31, 2011	Follow-up inspection.
No Permit	Speedee Lube	9637 Martin Luther King Jr Way S	January 5, 2011	Follow-up to 9/15/2010 inspection. All issues noted during initial inspection have been corrected.
No Permit	Starline Luxury Coaches	9801 Martin Luther King Jr Way S	August 31, 2011	Permit determination inspection. Follow-up required.
WAR125358	Steeler Inc	10023 Martin Luther King Jr Way S	May 12, 2011	Issues include: storage of product, empty drums and waste, BMPs, storm drains, permit, cover galvanized product.
			July 14, 2011	Follow-up inspection. Issues still outstanding; referred to Water Quality Program.
			July 20, 2011	Permit determination inspection. Permit applied for and coverage granted 10/17/2011.
No Permit	Traylor Frontier-Kemper Joint Venture	9224 Martin Luther King Jr Way S	August 23, 2011	Issues include: storage of product/waste, spills, spill response, identify drain connection.
WAR002040	Unified Grocers	3301 S Norfolk Street	December 7, 2010	NPDES ISGP compliance inspection. SWPPP not adequate and update was required.
			February 1, 2011	Follow-up inspection.
No Permit	Wall & Ceiling Supply Co Inc	9830 40th Avenue S	January 10, 2011	Issues include: washing practices, spill response, housekeeping, storm drain cleanout, zinc piping stored onsite. Compliance achieved letter sent 3/23/2011.
RM 0.0-1.0 West (Spokane St to Kellogg Island)				
No Permit	Bob's Boat Shop	3800 West Marginal Way SW	January 14, 2011	CNE Denied. Technically discharges to the west waterway.
WAR002341	General Recycling	4260 West Marginal Way SW	April 12, 2011	NPDES ISGP compliance inspection. Update of SWPPP required to include the expansion area, oily metals handling and municipal waste storage areas. Submit an engineering report for proposed treatment system.

Appendix C: Ecology Source Control Inspections (October 2010 through December 2011)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
RM 1.3-1.6 West (Glacier Bay)				
WAR001365	Alaska Marine Lines Seattle Terminal	5600 West Marginal Way SW	October 26, 2010	NPDES ISGP compliance inspection. SWPPP not adequate and update was required.
RM 1.6-2.1 West (Terminal 115)				
WAR010720	Icicle Seafoods	206 SW Michigan Street	October 7, 2010	NPDES ISGP compliance inspection. Facility found to be in good compliance, no issues noted. Facility moved; permit terminated on 3/4/2011.
WAR000471	Northland Services	6700 West Marginal Way SW	January 6, 2011	Site visit to discuss Level 3 treatment.
WAR003779	Northwest Container Services	6110 West Marginal Way SW	January 26, 2011	NPDES ISGP compliance inspection. Update of SWPPP required. Facility needs to implement Level 3 corrective actions. (Company is planning to move).
CNE	Northwest Seafood Processors	206 SW Michigan Street	July 12, 2011	CNE Granted
No Permit	Versatile Drilling Contractors Inc	7201 Detroit Avenue SW	August 30, 2011	Issues include: storage of waste/product, waste disposal, washing practices. Compliance achieved letter sent 12/7/2011.
RM 2.1 West (1st Avenue S SD)				
WAR011078	MAPSCO	8135 1st Avenue S	June 9, 2011	NPDES ISGP compliance inspection. Monitoring locations reviewed and changed. Level 3 Corrective Action requirements reviewed and waiver granted.
WAR011800	Samson Tug & Barge Detroit Ave	7553 Detroit Avenue SW	November 9, 2010	NPDES ISGP compliance inspection. Track-out control problematic. Monitoring locations reviewed.
No Permit	SeaPort Fuels	7800 Detroit Avenue SW	April 6, 2011	Urban Waters inspection. Facility needs to improve source control or may need coverage under ISGP as a significant contributor.
WAR124626	South Transfer Station	130 S Kenyon Street	November 30, 2010	NPDES construction stormwater inspection. Turbid stormwater discharge documented and corrected.
			March 31, 2011	NPDES construction stormwater compliance inspection. No significant issues noted.
RM 2.1-2.2 West (EAA-2: Trotsky Inlet)				
WAR002471	Alaska Marine Lines Dock 2	7100 1st Avenue S	October 26, 2010	NPDES ISGP compliance inspection. Sampling and reporting issues were noted. Permit number may have been cancelled and reissued in name of property owner instead of Alaska Marine Lines. SWPPP not adequate and update was required.
WAR002137	United Iron Works	7421 5th Avenue S	April 5, 2011	NPDES ISGP compliance inspection. SWPPP not adequate, warning letter issued for not submitting DMRs and to update sampling plan and site map.
			June 27, 2011	Urban Waters inspection. Discharge locations reviewed.

Appendix C: Ecology Source Control Inspections (October 2010 through December 2011)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
RM 2.2-3.4 West (Riverside Drive)				
No Permit	Carey Limousine	1237 S Director Street	August 16, 2011	Formerly Kaspac Chiyoda Property. Issues include: discharge to sewer may require permit, housekeeping, spill response procedures, storage of product/waste.
WAR003598	Fibres International	9208 4th Avenue S	October 26, 2011	Urban Waters inspection. Follow-up drop-in site visit to determine if facility was still in operation. They are still planning to move or close down. Permit is still active and they continue to monitor and report.
No Permit	Heartwood Inc	1414 S Director Street	April 6, 2011	Issues include: properly document waste disposal, labeling, housekeeping, clean and cover drains. Compliance achieved 6/8/2011.
WAR009725	Independent Metals	816 S Kenyon Street	August 16, 2011	NPDES ISGP compliance inspection. Warning letter issued to update SWPPP.
No Permit	Latins Used Tires	8620 14th Avenue S	May 18, 2011	Issues include: housekeeping, spill procedures, tire pile, catch basin cleaning. Compliance achieved letter sent 7/29/2011.
WAR011741	Marine Lumber Services	525 S Chicago Street	November 9, 2010	NPDES ISGP compliance inspection. Review of source control BMP's. Found to be inadequate.
			September 28, 2011	NPDES ISGP compliance inspection. Formal enforcement issued requiring control or treatment of copper, arsenic and zinc discharges from South Yard.
WAR001918	Northwest Grating Products	9230 4th Avenue S	May 25, 2011	NPDES ISGP compliance inspection. Facility failing to properly monitor and report.
No Permit	RACE Recycling & Compacting Equipment	1414 S Concord Street	December 15, 2010	Issues include: proper storage of waste/product, spill response procedures, housekeeping.
No Permit	RL Cook Sales and Supply Co	8814 14th Avenue S	April 6, 2011	Issues include: housekeeping, properly store product and waste, spill response procedures. Compliance achieved 5/16/2011.
No Permit	Southend Quality Auto Care	8902 14th Avenue S	April 6, 2011	Issues include: clean combined sewer structure, housekeeping. Follow-up inspection showed compliance achieved; letter sent 5/16/2011.
RM 3.4-3.8 West (EAA-5: Terminal 117)				
WAR001009	Boeing South Park	1420 S Trenton Street	November 2, 2010	NPDES ISGP compliance inspection. Request to terminate permit coverage was reviewed and denied.

Appendix C: Ecology Source Control Inspections (October 2010 through December 2011)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
WAR012448	South Park Bridge	16th Avenue S	July 5, 2011	NPDES construction stormwater compliance inspection.
			July 26, 2011	NPDES construction stormwater compliance inspection.
			August 17, 2011	NPDES construction stormwater compliance inspection.
			August 23, 2011	NPDES construction stormwater compliance inspection.
			September 14, 2011	NPDES construction stormwater compliance inspection.
			September 21, 2011	NPDES construction stormwater compliance inspection.
			October 12, 2011	NPDES construction stormwater compliance inspection.
			December 1, 2011	NPDES construction stormwater compliance inspection.
			December 20, 2011	NPDES construction stormwater compliance inspection.
RM 3.8-4.2 West (Sea King Industrial Park)				
No Permit	Accurate Grinding	430 S 96th Street, Unit 1	May 19, 2011	Issues include: improve spill response procedures, ISGP may be required. Compliance achieved 7/11/2011.
No Permit	Aero-Lac Inc	420 S 96th Street, Suite 11	February 17, 2011	Issues include: proper storage/recycling/disposal, improve spill response, assess floor drain plumbing, housekeeping. Compliance achieved 5/16/2011.
No Permit	Atacs Products Inc	850 S Cambridge Street	May 18, 2011	Issues include: proper storage of product and waste, disposal of waste, spill training. Compliance achieved letter sent 9/7/2011.
			November 10, 2011	Follow-up to 5/18/2011 inspection. Compliance achieved.
No Permit	Bakersfield Pipe and Supply	1050 S 96th Street	February 17, 2011	Issues include: spill response, washing practices, product storage. Compliance achieved letter sent 3/23/2011.
No Permit	Concrete Restoration Inc	9587 8th Avenue S	October 17, 2010	Issues include: solvent waste disposal, storm drain cleanout, spill response procedures, housekeeping.
			January 5, 2011	Follow-up inspection. Compliance achieved; letter sent 1/10/2011.
No Permit	Filterfresh Coffee Service Inc	9243 10th Avenue S	November 10, 2010	Issues include: wastewater discharge permit needed, washing, spill response, housekeeping. Compliance achieved on 12/22/2010.
No Permit	Gary Merlino Construction Co	9125 10th Avenue S	May 18, 2011	Issues include: proper storage of waste/product and housekeeping needed. Follow-up letter mailed on 7/27/2011. Referred to the Water Quality Program - water quality issues still outstanding.
No Permit	Halfon Candy Company	9229 10th Avenue S	November 10, 2010	Facility is in compliance.
WAG503282	ICON Materials Seattle Asphalt	1115 S 96th Street	November 30, 2010	Urban Waters inspection to assess status of track-out control. Found to be improved.
			November 7, 2011	Notice of Correction issued for poor control of track-out.
WAR001949	Industrial Automation	1421 S 93rd Street	June 9, 2011	Urban Waters inspection. Facility requesting an evaluation for a CNE. Found Not eligible.
No Permit	Nova Graphics Inc	1314 S 96th Street	November 18, 2010	Issues include: proper storage, discharge, and stormwater permitting. Compliance achieved letter sent 4/20/2011.
No Permit	NRC Environmental Services	9520 10th Avenue S, Suite 150	November 15, 2010	Follow-up to 8/26/2010 inspection. All issues noted during the initial inspection have been corrected.

Appendix C: Ecology Source Control Inspections (October 2010 through December 2011)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
WAR125474	Pacific Industrial Supply	1231 S Director Street	May 10, 2011	Formerly EMJ. Issues include: managing product, waste, empty containers, keep drains clean, housekeeping, cover galvanized product stored outside, ISGP may be required. Compliance achieved.
			October 12, 2011	Permit determination inspection. Permit applied for and coverage granted 1/9/2012
WAR000264	PSF Mechanical	9322 14th Avenue S	November 30, 2010	Urban Waters joint inspection with King County inspection to evaluate source control measures.
			April 19, 2011	Site visit to discuss Level 3 treatment.
No Permit	Pyrometric Company	13112 S 96th Street	January 25, 2011	Issues include: properly dispose of waste, spill response procedures, housekeeping. Compliance achieved letter sent 3/23/2011.
WAR125565	Security Contractor Services	9619 8th Avenue S	November 10, 2010	Issues include: properly store product/waste, designation of waste, proper washing, spill response. Compliance achieved letter sent 3/24/2011.
			October 26, 2011	Permit determination inspection. Permit applied for and coverage granted 1/13/2012.
No Permit	Sherwin Williams Store 4317	9530 10th Avenue S	February 17, 2011	Housekeeping issues. Compliance achieved letter sent 5/23/2011.
WAR011548	Western Ports Containers	9600 8th Avenue S	November 9, 2010	Urban Waters inspection to review track-out control plan.
			November 7, 2011	Notice of Correction issued for poor control of track-out. Follow-up needed.
RM 4.2-4.8 West (Restoration Areas)				
No Permit	Aussie Machine Inc	12446 Des Moines Memorial Drive	July 19, 2011	Issues include: proper storage of waste and product, spill response, housekeeping, may need ISGP. Compliance achieved letter sent 9/28/2011.
No Permit	Glendale Heating & Air Conditioning Co	12462 Des Moines Way S	July 26, 2011	Issues include: proper storage of waste/product, improve spill response procedures, implement proper washing practices, storm drain needs outlet trap. Compliance achieved letter sent 9/28/2011.
No Permit	J & H Express	10160 West Marginal Place S, Tukwila	May 19, 2011	Issues include: spill response procedures, proper washing practices, housekeeping. Compliance achieved letter sent 8/1/2011.
No Permit	Joe's Aussie Repair	12454 Des Moines Memorial Drive S, Burien	July 19, 2011	Issues include: properly store product and waste, spill preparedness, housekeeping, washing practices, clean storm drains. Compliance achieved letter sent 9/28/2011.
No Permit	Pacific Truck Repair	12441 Des Moines Memorial Drive S, Burien	July 26, 2011	Issues include: properly store waste/product, properly dispose of waste, improve spill response procedures, improve housekeeping. Compliance achieved letter sent 9/28/2011.

Appendix C: Ecology Source Control Inspections (October 2010 through December 2011)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
No Permit	Preet Auto Body Repair	12441 Des Moines Memorial Drive S, Burien	July 26, 2011	Issues include: properly store waste/product, properly dispose of waste, improve spill response procedures, improve housekeeping. Compliance achieved letter sent 9/28/2011.
No Permit	Triple V Auto Repair	12459 Des Moines Way S #A	July 19, 2011	Issues include: properly store product/waste, improve spill response procedures, implement proper housekeeping, proper washing procedures. Compliance achieved letter sent 9/28/2011.
No Permit	J & H Express	10160 West Marginal Place S, Tukwila	May 19, 2011	Issues include: spill response procedures, proper washing practices, housekeeping. Compliance achieved letter sent 8/1/2011.
Combined Sewer Area				
No Permit	Fosters Frame & Axle 1st Ave S	5300 1st Avenue S	August 10, 2011	Issues include: proper storage of product and waste, improve spill and response procedures, housekeeping, and storm drain cleaning.
			November 7, 2011	Follow-up inspection. Compliance achieved letter sent 11/10/2011.
No Permit	Fosters Frame Harney St	934 S Harney Street	August 4, 2011	Issues include: proper storage of product/waste, clean up spills, designate waste, disposal of waste, container condition, spill response procedures, catch basin cleanout.
			November 7, 2011	Issues include: proper storage of product/waste. Compliance achieved letter sent 11/30/2011.
No Permit	Kollmar Sheet Metal Inc	941 S Nebraska Street	August 4, 2011	Issues include: improve spill response procedures, housekeeping, storm drain cleaning. Compliance achieved letter sent 11/1/2011.
No Permit	The Recycling Depot Inc	6004 Corson Avenue S	August 2, 2011	Issues include: improve spill procedures, proper washing practices, housekeeping, product/waste storage, and disposal of waste. Compliance achieved letter sent 11/1/2011.

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
SWPPP = Stormwater Pollution Prevention Plan

Appendix D

King County Source Control Inspections (October 2010 through December 2011)

Appendix D: King County Source Control Inspections (October 2010 through December 2011)

Facility Name	Address	Parcel No.	Initial Inspection	Follow-up Inspection	Notes
RM 2.2-3.4 West (Riverside Drive)					
Port of Seattle - Dallas Ave Property	8700 Dallas Avenue S	0001600044	●		
South Park Marina	8604 Dallas Avenue S	0001600001	●		
South Park Tire Factory	8510 Dallas Avenue S	2185600025	●		
Rick's Master Marine	1415 S Thistle Street	2185600070	●		
RM 3.8-4.2 West (Sea King Industrial Park)					
Allied Body Works	625 S 96th Street	5624200232	●		
PSF Industries	9322 14th Avenue S	0001600046	●	●	One follow-up inspection.
Western Ports	9618 8th Avenue S	5624200290	●	●	Three follow-up inspections.
Warp Enterprises	631 S 96th Street	5624200253	●		
Biddadoo Auctions	1531 S 96th Street	5624200411	●	●	One follow-up inspection.
Old Dominion Freight	600 S 96th Street	3224049034	●		
Nova Graphics	1314 S 96th Street	5624200099	●		
AAAA Mini_Storage	1421 S 96th Street	5624200390	●		
ABC Supply Company	1050 S 96th Street	5624200130	●		
Cityview Apartments	9929 14th Avenue S	5624200517	●		
Dominic's Plaza	9635 Des Moines Memorial Drive S	5624200371	●		
Duwamish Yacht Club	1801 S 93rd Street	0001600061	●		
Harasch Industrial Park	9330 15th Avenue S	0001600059	●		
IAM District 751	9135 15th Place S	0001600058	●		
Park South Apartments	10102 8th Avenue S	5624200670	●		
S 96th Business Park	420 S 96th Street	3224049071	●		
Sea King Industrial Park	1620 S 92nd Place	0001600060	●		
Sea King Industrial Park	1501 S 92nd Place	7619000000	●		
Security Contractor Services	9619 8th Avenue S	5624200250	●		
Selland Auto Transport	615 S 96th Street	5624200230	●		
Woolridge Boats	1303 S 96th Street	5624200360	●		
Ace Galvanizing	429 S 96th Street	0523049008	●	●	One follow-up inspection.
RM 4.2-4.8 West (Restoration Areas)					
Renacer Youth Treatment Center	10010 Des Moines Memorial Drive S	5624200415	●		
Light House Ministries	9820 Des Moines Memorial Drive S	5624200431	●		
Park Des Moines Apartments	10002 Des Moines Memorial Drive S	5624200436	●	●	Two follow-up inspections.
India Pentacostal Assembly	1443 S 99th Street	5624200452	●		
Vinh Apartments	10007 17th Place S	5624200774	●		

Source: Adapted from Hickey 2012

Appendix E

Source Tracing Sample Results
(October 2010 through December 2011)

Source: SPU 2011

Table 1: Ecology interagency agreement: sampling locations (2010-2011).

Station ID	Sample No.	Date	Type	Sewer	Lab Ref	Dioxin	EAA/SCA	Outfall	Structure #	Location	Xcoord	Ycoord
SEDIMENT TRAPS												
1ST-ST1	1st-ST1-110410	11/04/10	Trap	SD	RW15, RV25		RM 3.4 to 3.8 west	1st Ave S SD (west)	819183	1st Ave S pond, N side of S Holden St--SR99 inlet	1,269,971.12	198,541.44
1ST-ST1	1st-ST1-110410-G	11/04/10	Inline	SD	RW15, RV25		RM 3.4 to 3.8 west	1st Ave S SD (west)	819183	1st Ave S pond, N side of S Holden St--SR99 inlet	1,269,971.12	198,541.44
1ST-ST2	1st-ST2-110410	11/04/10	Trap	SD	RW15, RV25		RM 3.4 to 3.8 west	1st Ave S SD (west)	786737	1st Ave S pond, N side of S Holden St--SR509 inlet	1,269,970.80	198,570.70
1ST-ST2	1st-ST2-110410-G	11/04/10	Inline	SD	RW15, RV25		RM 3.4 to 3.8 west	1st Ave S SD (west)	786737	1st Ave S pond, N side of S Holden St--SR509 inlet	1,269,970.80	198,570.70
1ST-ST3	1st-ST3-111110	11/11/10	Trap	SD	RW33		RM 3.4 to 3.8 west	1st Ave S SD (west)	714107	SW Kenyon St at 4th Ave SW	1,267,991.38	197,680.32
1ST-ST3	1st-ST3-111110-G	11/11/10	Inline	SD	RW33		RM 3.4 to 3.8 west	1st Ave S SD (west)	714107	SW Kenyon St at 4th Ave SW	1,267,991.38	197,680.32
1ST-ST7	1st-ST7-111110	11/11/10	Trap	SD	RW33		RM 3.4 to 3.8 west	1st Ave S SD (west)	600461	In turn lane of Olsen Pl SW just west of 1st Ave S	1,269,028.98	193,714.03
7th-ST1	7th-ST1-120110	12/01/10	Trap	SD	RZ02, SA02, SA03		RM 2.2 to 3.4 west	7th Ave S SD	599721	S Portland St and 7th Ave S	1,271,845.54	198,135.36
7th-ST1	7th-ST1-120110-G	12/01/10	Inline	SD	RZ02, SA02, SA03		RM 2.2 to 3.4 west	7th Ave S SD	599721	S Portland St and 7th Ave S	1,271,845.54	198,135.36
7th-ST2	7th-ST2-111110	11/11/10	Trap	SD	RW33		RM 2.2 to 3.4 west	7th Ave S SD	878755	4th Ave S at S Barton St, next to P-Patch	1,270,702.00	193,616.50
7th-ST2	7th-ST2-111110-G	11/11/10	Inline	SD	RW33		RM 2.2 to 3.4 west	7th Ave S SD	878755	4th Ave S at S Barton St, next to P-Patch	1,270,702.00	193,616.50
7th-ST3	7th-ST3-111110	11/11/10	Trap	SD	RW33		RM 2.2 to 3.4 west	7th Ave S SD	599941	S Southern St just west of 7th Ave S	1,271,346.96	196,842.03
7th-ST3	7th-ST3-111110-G	11/11/10	Inline	SD	RW33		RM 2.2 to 3.4 west	7th Ave S SD	599941	S Southern St just west of 7th Ave S	1,271,346.96	196,842.03
96-ST1	96-ST1-120110	12/01/10	Trap	SD	RZ02, SA02, SA03		RM 3.8 to 4.2 west	S 96th St SD	NA	S 95th St just east of W Marginal Pl S	1,270,741.32	192,246.67
96-ST1	96-ST1-120110-G	12/01/10	Inline	SD	RZ02, SA02, SA03		RM 3.8 to 4.2 west	S 96th St SD	NA	S 95th St just east of W Marginal Pl S	1,270,741.32	192,246.67
96-ST2	96-ST2-120110	12/01/10	Trap	SD	RZ02, SA02, SA03		RM 3.8 to 4.2 west	S 96th St SD	NA	S 96th St just east of W Marginal Pl S	1,275,063.56	192,278.28
96-ST2	96-ST2-120110-G	12/01/10	Inline	SD	RZ02, SA02, SA03		RM 3.8 to 4.2 west	S 96th St SD	NA	S 96th St just east of W Marginal Pl S	1,275,063.56	192,278.28
96-ST3	96-ST3-120310	12/03/10	Trap	SD	RZ17		RM 3.8 to 4.2 west	S 96th St SD	NA	Vault on west end of S 96th St at 4th Ave S	1,275,030.99	192,684.64
96-ST3	96-ST3-120310-G	12/03/10	Inline	SD	RZ17		RM 3.8 to 4.2 west	S 96th St SD	NA	Vault on west end of S 96th St at 4th Ave S	1,275,030.99	192,684.64
ID-ST3	DK-ST1-110410	11/04/10	Trap	SD	RW15, RV25		RM 0.0 to 1.0 west	SW Idaho St SD	NA	Channel at north end of 19th Ave SW at SW Dawson St	1,263,879.13	206,423.86
ID-ST3	DK-ST1-110410-G	11/04/10	Inline	SD	RW15, RV25		RM 0.0 to 1.0 west	SW Idaho St SD	NA	Channel at north end of 19th Ave SW at SW Dawson St	1,263,879.13	206,423.86
HC-ST1	HC-ST1-110410	11/04/10	Trap	SD	RW15, RV25		RM 4.2 to 4.8 west	Hamm Creek	NA	Culvert under Des Moines Memorial Dr S	1,275,382.75	190,530.64
HC-ST1	HC-ST1-110410-G	11/04/10	Inline	SD	RW15, RV25		RM 4.2 to 4.8 west	Hamm Creek	NA	Culvert under Des Moines Memorial Dr S	1,275,382.75	190,530.64
HP-ST4	HP-ST4-111110	11/11/10	Trap	SD	RW33		RM 1.6 to 2.1 west	Highland Park Wy SW SD	599241	NW corner of W Marginal Wy SW and Highland Pk Wy SW	1,267,618.04	200,796.20
HP-ST6	HP-ST6-111810	11/18/10	Trap	SD	RX79, RZ07		RM 1.6 to 2.1 west	Highland Park Wy SW SD	599219	SW Michigan St just east of W Marginal Wy SW	1,268,086.32	200,870.80
HP-ST6	HP-ST6-111810-G	11/18/10	Inline	SD	RX79, RZ07		RM 1.6 to 2.1 west	Highland Park Wy SW SD	599219	SW Michigan St just east of W Marginal Wy SW	1,268,086.32	200,870.80
ID-ST1	ID-ST1-111810	11/18/10	Trap	SD	RX79, RZ07		RM 0.0 to 1.0 west	SW Idaho St SD	598047	SW Hudson St at 18th Ave SW	1,264,220.16	206,583.53
ID-ST2	ID-ST2-111810	11/18/10	Trap	SD	RX79, RZ07		RM 0.0 to 1.0 west	SW Idaho St SD	597411	SW Idaho St just east of W Marginal Wy SW	1,265,316.19	209,904.80
ID-ST2	ID-ST2-111810-G	11/18/10	Inline	SD	RX79, RZ07		RM 0.0 to 1.0 west	SW Idaho St SD	597411	SW Idaho St just east of W Marginal Wy SW	1,265,316.19	209,904.80
KCIA1-ST1	KCIA1-ST1-120310	12/03/10	Trap	SD	RZ17		RM 3.9 to 4.3 east	KCIA SD#1	KC #1060	KCIA SD#1 at 9010 E Marginal Way S	1,278,114.80	193,883.20
KCIA1-ST1	KCIA1-ST1-120310-G	12/03/10	Inline	SD	RZ17		RM 3.9 to 4.3 east	KCIA SD#1	KC #1060	KCIA SD#1 at 9010 E Marginal Way S	1,278,114.80	193,883.20
KCIA2-ST1	KCIA2-ST1-120310	12/03/10	Trap	SD	RZ17		RM 3.7 to 3.9 east	KCIA SD#2/PS45 EOF	NA	KCIA SD #2 at S 87th Pl and E Marginal Way S, downstream of pump station	1,277,685.38	194,822.09
KCIA2-ST1	KCIA2-ST1-120310-G	12/03/10	Inline	SD	RZ17		RM 3.7 to 3.9 east	KCIA SD#2/PS45 EOF	NA	KCIA SD #2 at S 87th Pl and E Marginal Way S, downstream of pump station	1,277,685.38	194,822.09
KN-ST1	KN-ST1-111810	11/18/10	Trap	SD	RX79, RZ07		RM 1.3 to 1.6 west	SW Kenny St SD/T115 CSO	598644	E end of S Kenny St, on T115	1,268,138.36	203,628.91
KN-ST1	KN-ST1-111810-G	11/18/10	Inline	SD	RX79, RZ07		RM 1.3 to 1.6 west	SW Kenny St SD/T115 CSO	598644	E end of S Kenny St, on T115	1,268,138.36	203,628.91
1ST-ST5	NA		Trap	SD	No sample		RM 3.4 to 3.8 west	1st Ave S SD (west)	786748	SR 509 (northbound), Occidental St off ramp	1,269,687.50	198,011.80
KCIAJ-ST1	No sediment present		Trap	SD	No sample		RM 2.8 to 3.7 east	KCIA-Jorgensen SD	NA	KC MH-2-E. Trap moved 30 ft east to ex MH when KC modified system in 2009	1,277,261.40	195,824.50
SOURCE TRACING: CBs and RCBs												
CB206	CB206-041311	04/13/11	CB	SD	SR72		RM 2.2 to 3.4 west	Private SD	NA	CB inside gate at 7814 8th Ave S	1,272,667.29	197,852.95
CB210	CB210-042011	04/20/11	CB	SD	SS85		RM 4.9 east	Norfolk CSO/SD/PS17 EOF	NA	West of MLK Jr Way S near Merton Way S	1,282,931.10	192,804.75
CB211	CB211-042911	04/29/11	CB	SD	SU75, SW05		RM 2.3 to 2.8 east	S Myrtle St SD	1805459	CB at 719 S Myrtle St, north of bldg, adjacent to S Myrtle St	1,272,291.49	200,283.84
CB212	CB212-042911	04/29/11	CB	SD	SU75, SW05		RM 2.3 to 2.8 east	S Myrtle St SD	1807595	CB at 719 S Myrtle St, south of bldg.	1,272,304.18	200,184.21
CB213	CB213-050211	05/02/11	CB	SD	SV01		RM 4.9 east	Norfolk CSO/SD/PS17 EOF	4119745	W side MLK Jr Way S , inside fenceline about 700 ft S of S Norfolk St	1,283,210.45	189,964.11
CB108	CB108-041311	04/13/11	RCB	SD	SR72		RM 2.1 to 2.2 west	2nd Ave S SD	NA	S Fontanelle St at 2nd Ave S, NW corner	1,270,436.09	199,406.88
RCB154	RCB154-041311	04/13/11	RCB	SD	SR72		RM 3.8 to 4.2 west	S 96th St SD	RCB154	Sand box on NW corner of S Barton St and 10th Ave S	1,273,002.61	193,484.21
RCB225	RCB225-020211	02/02/11	RCB	SD	SH27		RM 2.3 to 2.8 east	S Myrtle St SD	576162	S Myrtle St btw Fox Ave S and 7th Ave S, south side, E of SIMC driveway	1,271,798.63	200,322.09
RCB226	RCB226-020211	02/02/11	RCB	SD	SH27		RM 2.3 to 2.8 east	S Myrtle St SD	943593	S Myrtle St east of Fox Ave S, north side, unpaved shoulder	1,271,990.00	200,350.43
RCB227	RCB227-031111	03/11/11	RCB	SD	SM94		RM 2.2 to 3.4 west	7th Ave S SD	577267	7th Ave S and S Monroe St, SE corner	1,271,851.24	197,349.80
RCB228	RCB228-031111	03/11/11	RCB	SD	SM94		RM 2.2 to 3.4 west	7th Ave S SD	577407	7th Ave S and S Elmgrove St, SE corner, 1 of 2 CBs in composite	1,271,841.15	197,087.28
RCB228	RCB228-031111	03/11/11	RCB	SD	SM94		RM 2.2 to 3.4 west	7th Ave S SD	907784	7th Ave S and S Elmgrove St, NE corner, 2 of 2 CBs in composite	1,271,812.02	197,094.77
RCB229	RCB229-031111	03/11/11	RCB	CS	SM94		RM 2.2 to 3.4 west	CS	577063	8th Ave S and S Chicago St, NE corner, 1 of 2 CBs in composite	1,272,506.24	197,874.63
RCB229	RCB229-031111	03/11/11	RCB	CS	SM94		RM 2.2 to 3.4 west	CS	577078	8th Ave S and S Chicago St, SE corner, 2 of 2 CBs in composite	1,272,507.53	197,838.98
RCB230	RCB230-031111	03/11/11	RCB	SD	SM94		RM 0.0 to 1.0 west	SW Idaho St SD	572226	W Marginal Wy SW and SW Idaho St, SE corner	1,265,311.78	209,842.25
RCB231	RCB231-031111	03/11/11	RCB	SD	SM94		RM 4.9 east	Norfolk CSO/SD/PS17 EOF	NA	Ditch W of I5 near SPU new Norfolk pond access road north of Boeing Access Rd	1,281,767.00	189,456.00
RCB232	RCB232-032411	03/24/11	RCB	SD	SO68, E1100318	✓	NA	West Seattle study area	572935	SW Edmonds St and 47th Ave SW, NW corner	1,255,533.15	207,945.04
RCB233	RCB233-032411	03/24/11	RCB	SD	SO68, E1100318	✓	NA	West Seattle study area	573794	SW Brandon St and 44th Ave SW, NE corner	1,256,441.40	205,943.94
RCB234	RCB234-032411	03/24/11	RCB	SD	SO68, E1100318	✓	NA	West Seattle study area	572525	E side of street opposite 4534 53rd Ave SW	1,253,778.70	209,034.05
RCB235	RCB235-032411	03/24/11	RCB	SD	SO68, E1100318	✓	NA	West Seattle study area	892722	SW Charlestown St and 50th Ave SW, SW corner	1,254,647.88	211,931.23
RCB236	RCB236-032411	03/24/11	RCB	SD	SO68, E1100318	✓	NA	West Seattle study area	573610	Center of SW Bruce St at S end of 50th Ave SW	1,254,480.24	206,465.08
RCB237	RCB237-040111	04/01/11	RCB	SD	SQ00, E1100342	✓	RM 2.3 to 2.8 east	Georgetown study area	574533	Padilla Pl S and S Orcas St, NW corner	1,272,569.73	204,392.02
RCB238	RCB238-040111	04/01/11	RCB	SD	SQ00, E1100342	✓	RM 2.3 to 2.8 east	Georgetown study area	575206	Carleton Ave S and S Eddy St, SE corner	1,273,132.35	202,617.76
RCB239	RCB239-040111	04/01/11	RCB	SD	SQ00, E1100342	✓	RM 2.2 to 3.4 west	South Park study area	907878	S Henderson St and 2nd Ave S, SE corner	1,270,222.00	194,278.55
RCB240	RCB240-040111	04/01/11	RCB	SD	SQ00, E1100342	✓	RM 2.2 to 3.4 west	South Park study area	578096	Against the curb on S Donovan St intersection of 2nd Ave S and S Donovan St	1,271,126.71	195,338.16

Table 1: Ecology interagency agreement: sampling locations (2010-2011).

Station ID	Sample No.	Date	Type	Sewer	Lab Ref	Dioxin	EAA/SCA	Outfall	Structure #	Location	Xcoord	Ycoord
RCB241	RCB241-040111	04/01/11	RCB	SD	SQ00, E1100342	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	571852	Off the road on S Andover St and Airport Way S on the east side of the northbound	1,272,797.16	210,750.59
RCB242	RCB242-040111	04/01/11	RCB	SD	SQ00, E1100342	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	572481	Denver Ave S and Colorado Ave S, NE corner	1,269,289.90	209,089.46
RCB243	RCB243-040811	04/08/11	RCB	SD	SR10, E1100369	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	567698	12th Ave S and S Judkins St, SE corner	1,274,288.73	219,292.66
RCB244	RCB244-040811	04/08/11	RCB	SD	SR10, E1100369	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	568939	15th Ave S and S Walker St, SE corner	1,275,187.61	216,391.46
RCB245	RCB245-040811	04/08/11	RCB	SD	SR10, E1100369	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	572009	S Dakota St and 14th Ave S, SE corner	1,274,746.40	210,413.10
RCB246	RCB246-040811	04/08/11	RCB	SD	SR10, E1100369	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	570900	S Hinds St and 16th Ave S, NE corner	1,275,349.11	212,566.92
RCB247	RCB247-040811	04/08/11	RCB	SD	SR10, E1100369	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	566525	E Yesler Way and 16th Ave S, SE corner	1,275,761.08	222,955.80
RCB248	RCB248-040811	04/08/11	RCB	SD	SR10, E1100369	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	566639	27th Ave S and S Washington St, NE corner	1,279,156.76	222,623.20
RCB249	RCB249-042011	04/20/11	RCB	SD	SS85		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	570442	S side of S Winthrop St between 15th and 16th Ave S	1,275,278.52	213,571.12
RCB250	RCB250-042011	04/20/11	RCB	SD	SS85		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	565921	23rd Ave and E Terrace St, SW corner	1,277,923.07	224,175.16
RCB251	RCB251-042011	04/20/11	RCB	SD	SS85		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	566629	24th Ave S and S Washington St, NE corner	1,278,343.26	222,646.59
RCB252	RCB252-042011	04/20/11	RCB	SD	SS85		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	567758	S Irving St and 29th Ave S, NW corner	1,279,636.12	219,120.10
RCB253	RCB253-042011	04/20/11	RCB	SD	SS85		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	568198	17th Ave S and S Massachusets St, SE corner	1,275,925.76	218,127.09
RCB254	RCB254-042211	04/22/11	RCB	SD	ST44		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	569427	23rd Ave S and S Bayview St, SW corner	1,277,622.20	215,387.25
RCB255	RCB255-042211	04/22/11	RCB	SD	ST44		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	569591	18th Ave S and S Waite St, SE corner	1,276,049.07	215,148.82
RCB256	RCB256-042211	04/22/11	RCB	SD	ST44		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	570255	12th Ave S and S Stevens St, SW corner	1,274,130.19	213,930.94
RCB257	RCB257-042211	04/22/11	RCB	SD	ST44		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	570661	14th Ave S and S Horton St, NW corner	1,274,731.20	213,004.86
RCB258	RCB258-042211	04/22/11	RCB	SD	ST44		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	572357	E side of 11th Ave S at Powell Pl S	1,273,768.25	209,483.90
RCB259	RCB259-042211	04/22/11	RCB	SD	ST44		RM 0.0 to 1.0 west	SW Idaho St SD	909544	E side of 17th Ave SW opposite #6306	1,264,399.56	202,998.69
RCB260	RCB260-042211	04/22/11	RCB	SD	ST44		RM 1.6 to 2.1 west	Highland Park Wy SW SD	909850	E side of 11th Ave SW between SW Elmgove St and SW Thistle St	1,265,929.30	196,745.06
RCB261	RCB261-042211	04/22/11	RCB	SD	ST44		RM 1.6 to 2.1 west	Highland Park Wy SW SD	577442	SW Elmgrove St and 10th Ave SW, SE corner	1,266,247.19	197,017.37
RCB262	RCB262-042211	04/22/11	Inline	SD	ST44		RM 3.4 to 3.8 west	1st Ave S SD (west)	881474	MH on west side at 8107 1st Ave S	1,269,448.33	197,061.71
RCB263	RCB263-042911	04/29/11	RCB	SD	SU75, SW05		RM 2.2 to 3.4 west	7th Ave S SD	578517	5th Ave S and S Henderson St, SE corner	1,271,089.50	194,381.29
RCB264	RCB264-042911	04/29/11	RCB	SD	SU75, SW05		RM 4.9 east	Norfolk CSO/SD/PS17 EOF	943725	E side of MLK Jr Way S about 300 ft S of S Norfolk St	1,283,285.58	190,359.39
RCB265	RCB265-042911	04/29/11	RCB	SD	SU75, SW05		RM 4.9 east	Norfolk CSO/SD/PS17 EOF	NA	CB on north side of driveway at 9600 MLK Jr Way S	1,283,201.19	191,869.40
RCB266	RCB266-042911	04/29/11	RCB	SD	SU75, SW05		RM 4.9 east	Norfolk CSO/SD/PS17 EOF	578923	W side of 39th Ave S just north of S Benefit St	1,282,048.00	193,028.70
RCB267	RCB267-051311	05/13/11	RCB	SD	SW81, E1100546	✓	RM 3.8 to 4.2 west	S 96th St SD	NA	E side of 1st Ave SW, north of SW 102nd St	1,269,227.75	190,475.92
RCB268	RCB268-051311	05/13/11	RCB	SD	SW81, E1100546	✓	RM 3.8 to 4.2 west	S 96th St SD	NA	4th Ave S and S 112th St, SW corner	1,270,970.75	187,079.31
RCB269	RCB269-051311	05/13/11	RCB	SD	SW81, E1100546	✓	RM 3.8 to 4.2 west	S 96th St SD	NA	9th Ave S and S 104th St, NE corner	1,273,584.38	190,312.08
RCB270	RCB270-051311	05/13/11	RCB	SD	SW81, E1100546	✓	RM 4.2 to 4.8 west	Hamm Creek	NA	E shoulder of 14th Ave S, approx 100 yds north of S 112th St	1,274,182.50	187,528.94
RCB271	RCB271-051311	05/13/11	RCB	SD	SW81, E1100546	✓	RM 3.8 to 4.2 west	S 96th St SD	NA	10th Ave S and S 124th St, NE corner	1,272,754.74	183,110.69
RCB272	RCB272-051311	05/13/11	RCB	SD	SW84, E1100547	✓	RM 3.8 to 4.2 west	S 96th St SD	NA	Duplicate of RCB268	1,270,970.75	187,079.31
RCB159	RCB159-052011-0	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#2, 2 ft W of gate post, 4 ft off of fenceline	1,271,277.96	197,401.60
RCB159	RCB159-052011-3	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#2, 2 ft W of gate post, 4 ft off of fenceline	1,271,277.96	197,401.60
RCB159	RCB159-052011-12	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#2, 2 ft W of gate post, 4 ft off of fenceline	1,271,277.96	197,401.60
RCB273	RCB273-052011-0	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#1, soil midway across property frontage, 25 ft from	1,271,227.41	197,403.95
RCB273	RCB273-052011-3	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#1, soil midway across property frontage, 25 ft from	1,271,227.41	197,403.95
RCB273	RCB273-052011-12	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#1, soil midway across property frontage, 25 ft from	1,271,227.41	197,403.95
RCB274	RCB274-052011-0	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#1 duplicate of RCB 273-0	1,271,227.41	197,403.95
RCB274	RCB274-052011-3	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#1 duplicate of RCB 273-3	1,271,227.41	197,403.95
RCB274	RCB274-052011-12	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#1 duplicate of RCB 273-12	1,271,227.41	197,403.95
RCB275	RCB275-052011-0	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#3, 14' W of adjacent bldg, 5.5 ft off of fenceline	1,271,344.59	197,401.87
RCB275	RCB275-052011-3	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#3, 14' W of adjacent bldg, 5.5 ft off of fenceline	1,271,344.59	197,401.87
RCB275	RCB275-052011-12	05/20/11	Soil	SD	SX83		RM 2.2 to 3.4 west	7th Ave S SD	NA	5th Ave S and S Monroe St, ML#3, 14' W of adjacent bldg, 5.5 ft off of fenceline	1,271,344.59	197,401.87
RCB37	RCB37-020211	02/02/11	RCB	SD	SH27		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	570232	Airport Wy S and S Stevens St, SE corner	1,273,172.84	213,963.16
RCB276	RCB276-101211	10/12/11	RCB	SD	TR70, TT18		RM 2.2 to 3.4 west	7th Ave S SD	577277	S Monroe St and 8th Ave S, SW corner	1,272,446.63	197,329.64
RCB277	RCB277-101211	10/12/11	RCB	SD	TR70, TT18		RM 2.2 to 3.4 west	7th Ave S SD	577172	S Kenyon St, and 8th Ave S, NW corner	1,272,451.12	197,623.53
RCB278	RCB278-101211	10/12/11	RCB	SD	TR70, TT18		RM 2.2 to 3.4 west	7th Ave S SD	907768	S Kenyon St between 8th Ave S and the River, N side of Kenyon	1,272,884.20	197,603.31
RCB279	RCB279-101211	10/12/11	RCB	SD	TR70, TT18		RM 2.2 to 3.4 west	7th Ave S SD	577062	S Chicago St and 8th Ave S, NW corner	1,272,468.88	197,876.78
RCB280	RCB280-101211	10/12/11	RCB	SD	TR70, TT18		RM 2.2 to 3.4 west	7th Ave S SD	576991	S Portland St and 8th Ave S, NW corner	1,272,476.23	198,122.59
RCB281	RCB281-102511	10/25/11	RCB	SD	TT60		RM 4.9 east	Norfolk CSO/SD/PS17 EOF	907972	S side of S Norfolk St, W of MLK Jr Wy S	1,282,949.13	190,611.99
SOURCE TRACING: MHs												
CB165	CB165-091211	09/12/11	Inline	SD	TM02, TN38		RM 1.6 to 2.1 west	Port SD-T115	NA	North end of T115. Mystery drain, N side bldg by entry way	1,267,522.90	203,369.70
MH242	MH242-020211	02/02/11	Inline	SD	SH27		RM 0.0 to 1.0 west	SW Idaho St SD	713602	SW Graham St road end at 16th Ave SW by stair case	1,264,656.81	203,087.91
MH243	MH243-021611	02/16/11	Inline	CS	SJ31		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	786700	S Snoqualmie St and Airport Wy S, SW corner, sanitary sewer	1,272,587.45	208,539.51
MH241	MH241-041311	04/13/11	Inline	SD	SR72		RM 2.1 to 2.2 west	2nd Ave S SD	NA	2nd Ave S and S Fontanelle St, SW corner	1,270,400.79	199,355.10
MH244	MH244-041311	04/13/11	Inline	SD	SR72		RM 3.8 to 4.2 west	S 96th St SD	600535	MH on 10th Ave S btw S Barton St and S Cambridge St	1,273,005.98	193,053.64
MH7	MH7-042911	04/29/11	Inline	SD	SV75, SW05		RM 4.9 east	Norfolk CSO/SD/PS17 EOF	600716	MLK Jr Way S and S Norfolk St, SW corner	1,283,181.66	190,587.09
MH210	MH210-101911	10/19/11	Inline	SD	TS74		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	597517	Diagonal Ave S at Colorado Ave S, NE corner	1,269,302.65	209,254.03
T2b	T2b-101911	10/19/11	Inline	SD	TS74		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	597349	Diagonal Ave S east of 2nd Ave S, 48-inch lateral	1,270,639.91	210,132.39
MH245	MH245-102411	10/24/11	Inline	SD	TT36		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	597569	Diagonal Ave S at Ohio Ave S, NE corner	1,268,999.59	209,036.79
ST1	ST1-102411	10/24/11	Inline	SD	TT36		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	881763	S Oregon St, W of E Marginal Wy S	1,268,389.80	209,049.90
MH246	MH246-102511	10/25/11	Inline	SD	TT60		RM 4.9 east	Norfolk CSO/SD/PS17 EOF	950282	MLK Jr Wy S opposite #10020	1,283,335.57	189,357.30
MH116	MH116-110211	11/02/11	Inline	SD	TT60		RM 4.9 east	WSDOT S Ryan St SD	NA	S of Norfolk/MLK Wy wet pond/wetland treatment system	1,281,866.58	189,425.64

Table 1: Ecology interagency agreement: sampling locations (2010-2011).

Station ID	Sample No.	Date	Type	Sewer	Lab Ref	Dioxin	EAA/SCA	Outfall	Structure #	Location	Xcoord	Ycoord
MH101	MH101-110411	11/04/11	Inline	SD	TV56		RM 2.0 to 2.3 east	S Brighton St CSO/SD	599157	Fox Ave S and S Brighton St, NW corner	1,271,076.59	201,126.61
MH14	MH14-111411	11/14/11	Inline	SD	TW91		RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	597347	Diagonal Ave S, east of 2nd Ave S, 132-inch mainline	1,270,626.65	210,148.22
ARCHIVED SAMPLES SUBMITTED FOR DIOXIN ANALYSIS												
1st-ST1	1st-ST1-110410-G	11/04/10	Inline	SD	E1100374	✓	RM 3.4 to 3.8 west	1st Ave S SD (west)	NA	1st Ave S pond, N side of S Holden St--SR99 inlet	1,269,790.80	198,570.70
1st-ST3	1st-ST3-111110-G	11/11/10	Inline	SD	E1100373	✓	RM 3.4 to 3.8 west	1st Ave S SD (west)	NA	SW Kenyon St at 4th Ave SW	1,267,991.38	197,680.32
96-ST2	96-ST2-120110-G	12/01/11	Inline	SD	E1100455	✓	RM 3.8 to 4.2 west	S 96th St SD	NA	S 96th St just east of W Marginal Pl S	1,275,063.56	192,278.28
HC-ST1	HC-ST1-110410	11/04/10	Trap	SD	E1100374	✓	RM 4.2 to 4.8 west	Hamm Creek	NA	Where Hamm Cr crosses under Des Moines Memorial Dr S	1,275,382.75	190,530.64
HC-ST1	HC-ST1-110410-G	11/04/10	Inline	SD	E1100374	✓	RM 4.2 to 4.8 west	Hamm Creek	NA	Where Hamm Cr crosses under Des Moines Memorial Dr S	1,275,382.75	190,530.64
ID-ST2	ID-ST2-111810-G	11/18/10	Inline	SD	E1100371	✓	RM 0.0 to 1.0 west	SW Idaho St SD	NA	SW Idaho St just east of W Marginal Wy SW	1,265,316.19	209,904.80
KCIA1-ST1	KCIA1-ST1-120310-G	12/03/10	Inline	SD	E1100370	✓	RM 3.9 to 4.3 east	KCIA SD#1	KC #1060	KCIA SD#1 at 9010 E Marginal Way S	1,278,114.80	193,883.20
KCIA2-ST1	KCIA2-ST1-120310-G	12/03/10	Inline	SD	E1100370	✓	RM 3.7 to 3.9 east	KCIA SD#2/PS45 EOF	NA	KCIA SD #2 at S 87th Pl and E Marginal Way S, downstream of pump station	1,277,685.38	194,822.09
ST1	ST1-043010	04/30/10	Trap	SD	E1100380	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	697233	S Oregon St, W of E Marginal Wy S	1,268,420.85	209,048.79
ST1	ST1-043010-G	04/30/10	Inline	SD	E1100372	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	697233	S Oregon St, W of E Marginal Wy S	1,268,420.85	209,048.79
ST3	ST3-043010	04/30/10	Trap	SD	E1100372	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	NA	S Forest St off ramp, approx. 340 ft E of Airport Wy S	1,272,823.43	214,263.28
ST5	ST5-043010	04/30/10	Trap	SD	E1100372	✓	RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	712275	S College St east of Rainier Ave S	1,278,219.97	216,092.51
SOURCE TRACING: ATTEMPTED BUT NO SAMPLE[a]												
MH		02/02/11	Inline				RM 0.0 to 1.0 west	SW Idaho St SD	884458	17th Ave SW between SW Juneau St and SW Brandon St		
MH		02/02/11	Inline				RM 0.0 to 1.0 west	SW Idaho St SD	713364	17th Ave SW at SW Brandon St		
MH		02/02/11	Inline				RM 0.0 to 1.0 west	SW Idaho St SD	884465	17th Ave SW at SW Juneau St		
MH		02/02/11	Inline				RM 0.0 to 1.0 west	SW Idaho St SD	713603	17th Ave SW at SW Graham St		
MH		02/16/11	Inline				RM 0.0 to 1.0 west	SW Idaho St SD	713533	16th Ave SW at S Seattle Comm. Coll.		
MH		02/16/11	Inline				RM 0.0 to 1.0 west	SW Idaho St SD	598635	16th Ave SW at S Seattle Comm. Coll.		
MH		02/16/11	Inline				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	697861	Airport Way S at S Edmonds St		
MH		03/11/11	Inline				RM 4.9 east	WSDOT S Ryan St SD	MH215	E.Marginal Way S, north of S Boeing Access Rd		
RCB		03/24/11	RCB					West Seattle study area	WS5-572377	Beach Dr SW and SW Oregon St		
RCB		03/24/11	RCB					West Seattle study area	WS6-574904	Beach DR SW		
RCB		04/01/11	RCB				RM 2.3 to 2.8 east	Georgetown study area	GT2-575426	Northeast corner of Carlton Ave S and S Warsw St		
RCB		04/01/11	RCB				RM 2.3 to 2.8 east	Georgetown study area	GT3-907658	Across from GT2		
RCB		04/01/11	RCB				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	Diag-W1-1524939	On 4th St, heading southbound before Industrial Way		
RCB		04/01/11	RCB				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	Diag-W2-572690	Beneath the 4th Ave Bridge adjacent to the COSTCO fueling station		
RCB		04/01/11	RCB				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	Diag-W6-930406	On the corner of 6th Ave S and S Spokane St		
RCB		04/08/11	RCB				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	Diag-M5-572577	S Columbian St between S Snoqualmie St and S Angeline (south side of street)		
RCB		04/08/11	RCB				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	Diag-E2-566927	S King St and 25th Ave S		
RCB		04/08/11	RCB				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	Diag-E3-567360	In Judkins Park (near 21st and Charles St)		
RCB		04/13/11	RCB				RM 0.0 to 1.0 west	SW Idaho St SD	all onsite CBs	General Recycling, West Marginal Way SW at SW Idaho St		
RCB		04/20/11	RCB				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ResCB2, 565502	22nd Ave and E James St		
RCB		04/20/11	RCB				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ResCB3, 565693	23rd Ave and E Jefferson St		
RCB		04/20/11	RCB				RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ResCB4, 565893	23rd Ave and E Terrace St		
RCB		04/29/11	RCB				RM 4.9 east	Norfolk CSO/SD/PS17 EOF	600647	MLK Jr. Way S near Merton Way S		
RCB		04/29/11	RCB				RM 4.9 east	Norfolk CSO/SD/PS17 EOF	714620	MLK Jr. Way S near Merton Way S		
CB		05/02/11	CB				RM 4.9 east	Norfolk CSO/SD/PS17 EOF	?	MLK Jr. Way S just south of S Norfolk St, on Coluccio Yard		
RCB		04/13/11	RCB				RM 3.8 to 4.2 west	S 96th St SD	779660	SE corner of S Barton St and 10 Ave S, Puget Sound Coatings souce tracing		
RCB		04/13/11	RCB				RM 3.8 to 4.2 west	S 96th St SD	open channel	west side of 10th Ave S between S Barton St and S Cambridge St		
RCB		05/13/11	RCB					S 96th St SD and Hamm Cr	?	Aqua Way S at 4th Ave S		

Samples shown in red are field splits/duplicates.

a. Sampling attempted, but insufficient sediment present.

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	1ST-ST1	1ST-ST1	1ST-ST2	1ST-ST2	1st-ST3	1st-ST3	1st-ST7	7th-ST1	ID-ST3	ID-ST3	HC-ST1	HC-ST1	7th-ST1
Outfall			1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	7th Ave S SD	SW Idaho St SD	SW Idaho St SD	Hamm Creek	Hamm Creek	7th Ave S SD
Sample type			Trap	Inline	Trap	Inline	Trap	Inline	Trap	Inline	Trap	Inline	Trap	Inline	Trap
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			RW15, RV25	RW15, RV25	RW15, RV25	RW15, RV25	RW33	RW33	RW33	RZ02, SA02, SA03	RW15, RV25	RW15, RV25	RW15, RV25	RW15, RV25	RZ02, SA02, SA03
Date			11/04/10	11/04/10	11/04/10	11/04/10	11/11/10	11/11/10	11/11/10	12/01/10	11/04/10	11/04/10	11/04/10	11/04/10	12/01/10
Total solids (%)			49.3	64.9	49.0	74.1	64.1	80.0	40.5	50.7	78.6	58.3	50.8	79.0	38.6
TOC (%)			7.89	7.60	5.54	3.43	5.33	1.42	15.10	6.43	2.90	3.09	1.26	0.78	8.59
Metals (mg/kg dw)															
Arsenic	57	93	10	8 U	10 U	6 U	8 U	6	10 U	16	9 U	9	6 U	6 U	20
Copper	390	390	180	133	96	20	40	33	125	211	34	31	23	12	198
Lead	450	530	93	42	111	25	8	9	197	180	52	39	18	8	127
Mercury	0.41	0.59	0.16	0.12	0.11	0.02 U	0.03	0.04	0.13	0.19	0.11	0.09	0.04	0.11	0.18
Zinc	410	960	793	370	466	108	147	183	662	787	270	154	65	60	776
Total petroleum hydrocarbons (mg/kg dw)															
TPH-diesel	2,000[b]	2,000[b]	760	300	170	64 U	78 U	62 U	680	490	97 U	77 U	63 U	60 U	890
TPH-oil	2,000[b]	2,000[b]	5,900	2,500	1,500	330	330	160	5,500	2,800	280	150 U	130 U	120 U	5,000
LPAH (ug/kg dw)															
Acenaphthene	500	500	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Acenaphthylene	1,300	1,300	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Anthracene	960	960	380	140 U	130 U	20 U	42 J	58 U	260 J	150 U	20 U	20 U	20 U	20 U	150 J
Fluorene	540	540	160 J	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Naphthalene	2,100	2,100	200 U	140 U	130 U	10 J	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Phenanthrene	1,500	1,500	2,000	240	260	25	310	200	2,400	280	42	10 J	25	17 J	370
Total LPAH	5,200	5,200	2,540 J	240	260	35 J	352	200	2,660 J	280	42	10 J	25	17 J	520 J
HPAH (ug/kg dw)															
Benzo(a)anthracene	1,300	1,600	810	190	210	22	260	120	1,200	290	23	20 U	15 J	10 J	300
Benzo(a)pyrene	1,600	1,600	1,100	280	330	28	300	130	2,500	440	41	16 J	16 J	14 J	400
Total benzofluoranthenes	3,200	3,600	440	180	190	18 J	120	57 J	1,500	330	20 U	20 U	20 U	20 U	400
Benzo(g,h,i)perylene	670	720	2,300	670	740	72	660	270	4,800	930	88	32	27	27	1,100
Chrysene	1,400	2,800	1,600	420	450	47	380	160	3,100	500	54	19 J	21	16 J	850
Dibenz(a,h)anthracene	230	230	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Fluoranthene	1,700	2,500	3,300	550	670	65	760	360	6,100	800	82	22	34	30	1,200
Indeno(1,2,3-c,d)pyrene	600	690	200 U	110 J	130 J	20 U	120	55 J	1,400	230	20 U	20 U	20 U	20 U	260
Pyrene	2,600	3,300	2,600	600	550	59	560	280	3,900	700	60	16 J	35	24	1,000
Total HPAH	12,000	17,000	12,150	3,000 J	3,270 J	311 J	3,160	1,432 J	24,500	4,220	348	105 J	148 J	121 J	5,510
Phthalates (ug/kg dw)															
Bis(2-ethylhexyl)phthalate	1,300	1,900	11,000 B	4,500 B	6,800 B	570 B	660	220	11,000	2,100 B	520 B	160 B	65 U	30 U	9,300 B
Butylbenzylphthalate	63	900	3,200	90 J	220	11 J	67 U	58 U	460 U	240	57	16 J	20 U	20 U	220 U
Diethylphthalate	200	1,200	200 U	140 U	130 U	52	67 U	58 U	460 U	150 U	20 U	20 U	17 J	20 U	220 U
Dimethylphthalate	71	160	200 U	140 U	130 U	14 J	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Di-n-butylphthalate	1,400	1,400	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Di-n-octylphthalate	6,200	NA	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
PCBs (ug/kg dw)															
Aroclor 1016			18 U	20 U	18 U	20 U	20 U	19 U	61 U	41 U	20 U	20 U	18 U	19 U	25 U
Aroclor 1221			18 U	20 U	18 U	20 U	20 U	19 U	61 U	41 U	20 U	20 U	18 U	19 U	25 U
Aroclor 1232			18 U	20 U	18 U	20 U	20 U	19 U	61 U	41 U	20 U	20 U	18 U	19 U	25 U
Aroclor 1242			18 U	20 U	18 U	20 U	20 U	19 U	61 U	41 U	20 U	20 U	18 U	19 U	25 U
Aroclor 1248			18 U	25 Y	23 Y	20 U	20 U	19 U	210 Y	41 U	20 U	20 U	33	19 U	110
Aroclor 1254			18 U	39	47	20 U	20 U	19 U	770	160 Y	20 U	20 U	45	19 U	130 Y
Aroclor 1260			18 U	34	28	20 U	20 U	19 U	310 Y	420	20 U	20 U	32	19 U	200
Total PCBs	130	1,000	18 U	73	75	20 U	20 U	19 U	770	420	20 U	20 U	110	19 U	310
Other organic compounds (ug/kg dw)															
1,2,4-Trichlorobenzene			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
1,2-Dichlorobenzene			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
1,3-Dichlorobenzene			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
1,4-Dichlorobenzene			200 U	140 U	130 U	47 U	67 U	58 U	460 U	150 U	36 U	30 U	34 U	36 U	220 U
1-Methylnaphthalene			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
2,2'-Oxybis(1-chloropropane)			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	1ST-ST1	1ST-ST1	1ST-ST2	1ST-ST2	1st-ST3	1st-ST3	1st-ST7	7th-ST1	ID-ST3	ID-ST3	HC-ST1	HC-ST1	7th-ST1
Outfall			1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	1st Ave S SD (west)	7th Ave S SD	SW Idaho St SD	SW Idaho St SD	Hamm Creek	Hamm Creek	7th Ave S SD
Sample type			Trap	Inline	Trap	Inline	Trap	Inline	Trap	Inline	Trap	Inline	Trap	Inline	Trap
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			RW15, RV25	RW15, RV25	RW15, RV25	RW15, RV25	RW33	RW33	RW33	RZ02, SA02, SA03	RW15, RV25	RW15, RV25	RW15, RV25	RW15, RV25	RZ02, SA02, SA03
Date			11/04/10	11/04/10	11/04/10	11/04/10	11/11/10	11/11/10	11/11/10	12/01/10	11/04/10	11/04/10	11/04/10	11/04/10	12/01/10
2,4,5-Trichlorophenol			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
2,4,6-Trichlorophenol			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
2,4-Dichlorophenol			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
2,4-Dimethylphenol[a]	29	29	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
2,4-Dinitrophenol			2,000 U	1,400 U	1,300 U	200 U	670 U	580 U	4,600 U	1,500 U	200 U	200 U	200 U	200 U	2,200 U
2,4-Dinitrotoluene			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
2,6-Dinitrotoluene			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
2-Chloronaphthalene			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
2-Chlorophenol			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
2-Methylnaphthalene			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
2-Methylphenol[a]	63	63	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
2-Nitroaniline			1,000 U	680 U	660 U	100 UJ	330 U	290 U	2,300 U	770 U	98 UJ	99 U	99 U	98 U	1,100 U
2-Nitrophenol			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
3,3'-Dichlorobenzidine			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
3-Nitroaniline			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
4,6-Dinitro-2-methylphenol			2,000 U	1,400 U	1,300 U	200 U	670 U	580 U	4,600 U	1,500 U	200 U	200 U	200 U	200 U	2,200 U
4-Bromophenyl-phenylether			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
4-Chloro-3-methylphenol			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
4-Chloroaniline			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
4-Chlorophenyl-phenylether			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
4-Methylphenol[a]	670	670	**120** J	140 U	130 U	20 U	**86**	**41** J	**410** J	150 U	**13** J	20 U	20 U	20 U	220 U
4-Nitroaniline			1,000 UJ	680 UJ	660 UJ	100 UJ	330 UJ	290 UJ	2,300 UJ	770 U	98 UJ	99 UJ	99 UJ	98 UJ	1,100 U
4-Nitrophenol			1,000 U	680 U	660 U	100 UJ	330 U	290 U	2,300 U	770 U	98 UJ	99 U	99 U	98 U	1,100 U
Benzoic acid[a]	650	650	**430** J	1,400 U	**750** J	200 U	670 U	580 U	4,600 U	1,500 U	**110** J	**87** J	200 U	200 U	2,200 U
Benzyl alcohol[a]	57	73	200 UJ	140 UJ	130 UJ	20 U	67 U	58 U	460 U	770 UJ	**44**	20 UJ	20 UJ	20 UJ	1,100 UJ
bis(2-Chloroethoxy) methane			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Bis-(2-chloroethyl) ether			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Carbazole			**190** J	140 U	130 U	20 U	**60** J	58 U	**400** J	150 U	20 U	20 U	20 U	20 U	220 U
Dibenzofuran	540	540	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Hexachlorobenzene	22	70	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Hexachlorobutadiene	11	120	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Hexachlorocyclopentadiene			1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
Hexachloroethane			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Isophorone			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Nitrobenzene			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
N-Nitroso-di-n-propylamine			200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
N-Nitrosodiphenylamine	28	40	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U
Pentachlorophenol[a]	360	690	1,000 U	680 U	660 U	100 U	330 U	290 U	2,300 U	770 U	98 U	99 U	99 U	98 U	1,100 U
Phenol[a]	420	1,200	200 U	140 U	130 U	20 U	67 U	58 U	460 U	150 U	20 U	20 U	20 U	20 U	220 U

a. Sediment management standards based on dry weight concentration.
b. Sediment quality standard/lowest apparent effects threshold
c. Cleanup screening level/second lowest apparent effects threshold
d. MTCA Method A soil cleanup level
Bold = Compound detected in sample.

- J Value is an estimate
- U Target analyte not detected at the reported concentration
- R Analytical result is rejected and cannot be used.
- Y Analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. Y flag is equivalent to U flag with a raised reporting limit.

RCB = Right-of-way catch basin
CB = Onsite catch basin
CSS = Combined sewer system
Inline = Inline grab sample
Dirt = Street dirt sample

Exceeds SQS/LAET/MTCA Method A
Exceeds CSL/2LAET

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	7th-ST2	7th-ST2	7th-ST3	7th-ST3	HP-ST4	HP-ST6	HP-ST6	96-ST1	96-ST1	96-ST2	96-ST2	96-ST3	96-ST3
Outfall			7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	Highland Park Wy SW SD	Highland Park Wy SW SD	Highland Park Wy SW SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD
Sample type			Trap	Inline	Trap	Inline	Trap	Trap	Inline	Trap	Inline	Inline	Trap	Trap	Inline
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			RW33	RW33	RW33	RW33	RW33	RX79, RZ07	RX79, RZ07	RZ02, SA02, SA03	RZ02, SA02, SA03	RZ02, SA02, SA03	RZ02, SA02, SA03	RZ17	RZ17
Date			11/11/10	11/11/10	11/11/10	11/11/10	11/11/10	11/18/10	11/18/10	12/01/10	12/01/10	12/01/10	12/01/10	12/03/10	12/03/10
Total solids (%)			37.4	81.6	28.9	63.1	63.1	38.6	37.1	58.1	74.1	58.6	45.5	36.4	76.4
TOC (%)			7.79	0.49	10.80	6.68	6.68	7.04	10.20	5.89	0.77	4.62	9.13	2.89	0.63
Metals (mg/kg dw)															
Arsenic	57	93	**30**	6 U	**30**	8 U	8 U	**28.9**	**30**	9 U	**7**	**16**	**30**	10 U	6 U
Copper	390	390	**29**	**9**	**139**	**38**	**38**	**103**	**166**	**56**	**14**	**49**	**81**	**38** J	**9** J
Lead	450	530	**33**	**4**	**110**	**35**	**35**	**130**	**167**	**63**	**14**	**60**	**96**	**37** J	**5** J
Mercury	0.41	0.59	**0.09**	0.02 U	**0.19**	0.03 U	0.03 U	**0.36**	**0.33**	**0.04**	0.02 U	**0.05**	**0.10**	**0.07**	0.03 U
Zinc	410	960	**216**	**50**	**724**	**160**	**160**	**662**	**928**	**593**	**267**	**746**	**669**	**1,110** J	**38** J
Total petroleum hydrocarbons (mg/kg dw)															
TPH-diesel	2,000[b]	2,000[b]	130 U	64 U	170 U	79 U	79 U	**300**	**410**	**76**	62 U	73 U	**410**		62 U
TPH-oil	2,000[b]	2,000[b]	270 U	130 U	**640**	**600**	**600**	**1,900**	**2,600**	**480**	120 U	**410**	**2,100**		120 U
LPAH (ug/kg dw)															
Acenaphthene	500	500	59 U	20 U	220 U	79 U	79 U	**140** J	270 U	89 U	20 U	**110**	240 U	36 U	19 U
Acenaphthylene	1,300	1,300	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Anthracene	960	960	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	**290**	**210** J	36 U	19 U
Fluorene	540	540	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	**140**	240 U	36 U	19 U
Naphthalene	2,100	2,100	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Phenanthrene	1,500	1,500	**32** J	20 U	**290**	**140**	**140**	**280**	**550**	**190**	**21**	**1,200**	**1,100**	**90**	19 U
Total LPAH	5,200	5,200	**32** J	20 U	**290**	**140**	**140**	**420** J	**550**	**190**	**21**	**1,740**	**1,310** J	**90**	19 U
HPAH (ug/kg dw)															
Benzo(a)anthracene	1,300	1,600	59 U	20 U	**240**	**78** J	**78** J	**240**	**460**	**150**	**17** J	**610**	**700**	**110**	19 U
Benzo(a)pyrene	1,600	1,600	**33** J	20 U	**300**	**92**	**92**	**300**	**630**	**190**	**17** J	**550**	**770**	**130**	19 U
Total benzofluoranthenes	3,200	3,600	59 U	20 U	**310**	**56** J	**56** J	**220**	**550**	**150**	**13** J	**270**	**610**	**120**	19 U
Benzo(g,h,i)perylene	670	720	**60**	20 U	**760**	**200**	**200**	**780**	**1,500**	**370**	**36**	**1,000**	**1,500**	**270**	19 U
Chrysene	1,400	2,800	**43** J	20 U	**550**	**140**	**140**	**570**	**880**	**270**	**22**	**680**	**1,000**	**170**	19 U
Dibenz(a,h)anthracene	230	230	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Fluoranthene	1,700	2,500	**60**	20 U	**750**	**270**	**270**	**920**	**1,600**	**460**	**46**	**1,700**	**2,100**	**330**	**14** J
Indeno(1,2,3-c,d)pyrene	600	690	59 U	20 U	**190** J	79 U	79 U	210 U	**390**	**120**	**11** J	**270**	**490**	**96**	19 U
Pyrene	2,600	3,300	**59**	20 U	**690**	**220**	**220**	**760**	**1,300**	**300**	**32**	**1,100**	**1,500**	**220**	19 U
Total HPAH	12,000	17,000	**255** J	20 U	**3,790** J	**1,056** J	**1,056** J	**3,790**	**7,310**	**2,010**	**194** J	**6,180**	**8,670**	**1,446**	**14** J
Phthalates (ug/kg dw)															
Bis(2-ethylhexyl)phthalate	1,300	1,900	**150**	**17** J	**7,000**	**1,400**	**1,400**	**6,500** B	**9,900** B	**1,100** B	130 U	**730** B	**4,500** B	**1,100** B	40 U
Butylbenzylphthalate	63	900	**38** J	20 U	**410**	79 U	79 U	**400**	**660**	**85** J	20 U	**100**	**550**	**91**	19 U
Diethylphthalate	200	1,200	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	29 U	92 U	240 U	36 U	20 U
Dimethylphthalate	71	160	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	**130** J	36 U	19 U
Di-n-butylphthalate	1,400	1,400	59 U	20 U	220 U	79 U	79 U	210 U	**190** J	89 U	20 U	92 U	240 U	**48**	19 U
Di-n-octylphthalate	6,200	NA	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
PCBs (ug/kg dw)															
Aroclor 1016			19 U	19 U	34 U	20 U	20 U	20 U	20 U	20 U	19 U	20 U	20 U	20 U	19 U
Aroclor 1221			19 U	19 U	34 U	20 U	20 U	20 U	20 U	20 U	19 U	20 U	20 U	20 U	19 U
Aroclor 1232			19 U	19 U	34 U	20 U	20 U	20 U	20 U	20 U	19 U	20 U	20 U	20 U	19 U
Aroclor 1242			19 U	19 U	34 U	20 U	20 U	20 U	20 U	20 U	19 U	20 U	20 U	20 U	19 U
Aroclor 1248			19 U	19 U	34 U	20 U	20 U	**100**	**110**	20 U	19 U	20 U	20 U	20 U	19 U
Aroclor 1254			19 U	19 U	51 Y	20 U	20 U	**52**	**63**	**28**	19 U	20 U	**37**	20 U	19 U
Aroclor 1260			19 U	19 U	**70**	20 U	20 U	20 U	**72**	20 U	19 U	20 U	**25**	20 U	19 U
Total PCBs	130	1,000	19 U	19 U	**70**	20 U	20 U	**152**	**245**	**28**	19 U	20 U	**62**	20 U	19 U
Other organic compounds (ug/kg dw)															
1,2,4-Trichlorobenzene			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
1,2-Dichlorobenzene			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
1,3-Dichlorobenzene			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
1,4-Dichlorobenzene			59 U	33 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
1-Methylnaphthalene			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
2,2'-Oxybis(1-chloropropane)			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	7th-ST2	7th-ST2	7th-ST3	7th-ST3	HP-ST4	HP-ST6	HP-ST6	96-ST1	96-ST1	96-ST2	96-ST2	96-ST3	96-ST3
Outfall			7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	Highland Park Wy SW SD	Highland Park Wy SW SD	Highland Park Wy SW SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD	S 96th St SD
Sample type			Trap	Inline	Trap	Inline	Trap	Trap	Inline	Trap	Inline	Inline	Trap	Trap	Inline
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			RW33	RW33	RW33	RW33	RW33	RX79, RZ07	RX79, RZ07	RZ02, SA02, SA03	RZ02, SA02, SA03	RZ02, SA02, SA03	RZ02, SA02, SA03	RZ17	RZ17
Date			11/11/10	11/11/10	11/11/10	11/11/10	11/11/10	11/18/10	11/18/10	12/01/10	12/01/10	12/01/10	12/01/10	12/03/10	12/03/10
2,4,5-Trichlorophenol			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
2,4,6-Trichlorophenol			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
2,4-Dichlorophenol			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
2,4-Dimethylphenol[a]	29	29	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
2,4-Dinitrophenol			590 U	200 U	2,200 U	790 U	790 U	2,100 U	2,700 U	890 U	200 U	920 U	2,400 U	360 U	190 U
2,4-Dinitrotoluene			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
2,6-Dinitrotoluene			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
2-Chloronaphthalene			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
2-Chlorophenol			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
2-Methylnaphthalene			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
2-Methylphenol[a]	63	63	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
2-Nitroaniline			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
2-Nitrophenol			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
3,3'-Dichlorobenzidine			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
3-Nitroaniline			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
4,6-Dinitro-2-methylphenol			590 U	200 U	2,200 U	790 U	790 U	2,100 U	2,700 U	890 U	200 U	920 U	2,400 U	360 U	190 U
4-Bromophenyl-phenylether			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
4-Chloro-3-methylphenol			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
4-Chloroaniline			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
4-Chlorophenyl-phenylether			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
4-Methylphenol[a]	670	670	59 U	20 U	220 U	**59** J	**59** J	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
4-Nitroaniline			300 UJ	97 UJ	1,100 UJ	400 UJ	400 UJ	1,100 UJ	1,400 UJ	440 U	97 U	460 U	1,200 U	180 U	97 U
4-Nitrophenol			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
Benzoic acid[a]	650	650	**140** J	200 U	2,200 U	790 U	790 U	2,100 U	2,700 U	890 U	200 U	920 U	2,400 U	**130** J	190 U
Benzyl alcohol[a]	57	73	59 U	20 U	220 U	**430**	**430**	210 U	270 U	440 UJ	97 UJ	460 UJ	1,200 UJ	180 UJ	R
bis(2-Chloroethoxy) methane			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Bis-(2-chloroethyl) ether			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Carbazole			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	**140**	**180** J	36 U	19 U
Dibenzofuran	540	540	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	**64** J	240 U	36 U	19 U
Hexachlorobenzene	22	70	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Hexachlorobutadiene	11	120	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Hexachlorocyclopentadiene			300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
Hexachloroethane			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Isophorone			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Nitrobenzene			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
N-Nitroso-di-n-propylamine			59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
N-Nitrosodiphenylamine	28	40	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U
Pentachlorophenol[a]	360	690	300 U	97 U	1,100 U	400 U	400 U	1,100 U	1,400 U	440 U	97 U	460 U	1,200 U	180 U	97 U
Phenol[a]	420	1,200	59 U	20 U	220 U	79 U	79 U	210 U	270 U	89 U	20 U	92 U	240 U	36 U	19 U

a. Sediment management standards based on dry weight concentration.
b. Sediment quality standard/lowest apparent effects threshold
c. Cleanup screening level/second lowest apparent effects threshold
d. MTCA Method A soil cleanup level
Bold = Compound detected in sample.

- J Value is an estimate
- U Target analyte not detected at the reported concentration
- R Analytical result is rejected and cannot be used.
- Y Analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. Y flag is equivalent to U flag with a raised reporting limit.

RCB = Right-of-way catch basin
CB = Onsite catch basin
CSS = Combined sewer system
Inline = Inline grab sample
Dirt = Street dirt sample

Exceeds SQS/LAET/MTCA Method A (grey shading)
Exceeds CSL/2LAET (black shading)

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	KCIA1-ST1	KCIA1-ST1	KCIA2-ST1	KCIA2-ST1	ID-ST1	ID-ST2	ID-ST2	KN-ST1	KN-ST1	MH7	MH241	MH242	MH243
Outfall			KCIA SD#1	KCIA SD#1	KCIA SD#2/PS45 EOF	KCIA SD#2/PS45 EOF	SW Idaho St SD	SW Idaho St SD	SW Idaho St SD	SW Kenny St SD/T115 CSO	SW Kenny St SD/T115 CSO	Norfolk CSO/SD/P S17 EOF	2nd Ave S SD	SW Idaho St SD	Diagonal Ave S CSO/SD
Sample type			Trap	Inline	Trap	Inline	Trap	Trap	Inline	Trap	Inline	Inline	Inline	Inline	Inline
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			RZ17	RZ17	RZ17	RZ17	RX79, RZ07	RX79, RZ07	RX79, RZ07	RX79, RZ07	RX79, RZ07	SV75, SW05	SR72	SH27	SJ31
Date			12/03/10	12/03/10	12/03/10	12/03/10	11/18/10	11/18/10	11/18/10	11/18/10	11/18/10	04/29/11	04/13/11	02/02/11	02/16/11
Total solids (%)			38.7	84.7	49.0	18.1	41.6	64.5	60.9	37.7	51.8	45.1	43.5	74.2	52.0
TOC (%)			5.82	0.49	1.60	4.88	5.16	2.57	6.39	7.82	3.90	4.19	3.53	3.37 J	12.37
Metals (mg/kg dw)															
Arsenic	57	93	13	10 U	8	51	20	7 U	12	30	55	10	21	7 U	10 U
Copper	390	390	429 J	78 J	35 J	17 J	118	32	82	129	161	92	205	38	108
Lead	450	530	110 J	34 J	11 J	50 J	89	23	107	82	436	122	130	95	80
Mercury	0.41	0.59	0.12	0.02 U	0.03 U	0.10 U	0.17	0.05	0.22	0.18	0.32	0.10	0.12	0.03	0.31
Zinc	410	960	608 J	596 J	58 J	1,190 J	794	141	409	566	711	318	1,030 J	155	462
Total petroleum hydrocarbons (mg/kg dw)															
TPH-diesel	2,000[b]	2,000[b]	240	59 U	100 U	250 U	350	46	660	260	500	1,200	650	260	58 U
TPH-oil	2,000[b]	2,000[b]	1,400	220	200 U	500 U	2,700	260	2,500	1,500	2,200	3,800	3,000	1,200	280
LPAH (ug/kg dw)															
Acenaphthene	500	500	390	86	47	20 U	460 J	59 U	230 U	100 U	69 J	180	27	140 U	20 U
Acenaphthylene	1,300	1,300	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	130	14 J	140 U	20 U
Anthracene	960	960	1,200	320	130	20 U	760	66	230 U	140	200	480	160	140 U	12 J
Fluorene	540	540	470	120	56	20 U	390 J	59 U	230 U	64 J	110 U	130	25	140 U	20 U
Naphthalene	2,100	2,100	150 U	62 U	14 J	20 U	460 U	59 U	230 U	100 U	110 U	260	51	140 U	19 J
Phenanthrene	1,500	1,500	7,500	2,200	1,100	36	6,700	470	410	560	320	1,600	170	270	68
Total LPAH	5,200	5,200	9,560	2,726	1,347 J	36	8,310 J	536	410	764 J	589 J	2,780	447 J	270	99 J
HPAH (ug/kg dw)															
Benzo(a)anthracene	1,300	1,600	6,500	1,700	700	21	5,000	470	300	280	150	1,900	99	210	31
Benzo(a)pyrene	1,600	1,600	7,200	1,500	780	36	7,400	760	600	600	540	1,900	68	290	60
Total benzofluoranthenes	3,200	3,600	2,700	660	620	33	6,400	730	1,100	470	410	1,500	76	390	77
Benzo(g,h,i)perylene	670	720	16,000	3,300	1,800	110	28,000	2,800	1,400	2,300	1,300	2,900	280	790	130
Chrysene	1,400	2,800	8,800	1,900	1,000	46	12,000	1,100	670	1,300	790	2,100	290	430	84
Dibenz(a,h)anthracene	230	230	220	58 J	41	20 U	2,100	59 U	230 U	100 U	110 U	450	19 U	140 U	20 U
Fluoranthene	1,700	2,500	24,000	4,700	1,900	94	12,000	1,200	1,000	1,400	1,100	4,100	350	480	140
Indeno(1,2,3-c,d)pyrene	600	690	2,900	740	590	34	6,100	690	750	450	310	1,200	40 J	290	32
Pyrene	2,600	3,300	15,000	2,900	1,300	61	9,600	950	830	1,000	810	4,600	450 J	370	99
Total HPAH	12,000	17,000	83,320	17,458 J	8,731	435	88,600	8,700	6,650	7,800	5,410	20,650	1,653 J	3,250	653
Phthalates (ug/kg dw)															
Bis(2-ethylhexyl)phthalate	1,300	1,900	3,800 B	160 U	300 U	76 U	12,000 B	1,300 B	1,100 B	5,500 B	2,000 B	4,100 B	3,900	1,400 B	400
Butylbenzylphthalate	63	900	150 J	62 U	11 J	20 U	550	100	470	160	110 U	57 U	260 J	140 U	20 U
Diethylphthalate	200	1,200	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
Dimethylphthalate	71	160	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
Di-n-butylphthalate	1,400	1,400	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	420	57 U	440	140 U	50
Di-n-octylphthalate	6,200	NA	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	3,500	140 U	20 U
PCBs (ug/kg dw)															
Aroclor 1016			20 U	19 U	18 U	20 U	47 U	20 U	19 U	19 U	20 U	20 U	20 U	20 U	20 U
Aroclor 1221			20 U	19 U	18 U	20 U	47 U	20 U	19 U	19 U	20 U	20 U	20 U	20 U	20 U
Aroclor 1232			20 U	19 U	18 U	20 U	47 U	20 U	19 U	19 U	20 U	20 U	20 U	20 U	39 Y
Aroclor 1242			20 U	19 U	18 U	20 U	47 U	240	19 U	19 U	20 U	20 U	20 U	25	20 U
Aroclor 1248			30 Y	19 U	18 U	20 U	90	20 U	110	51	83	39	94	7 U	20 U
Aroclor 1254			55	19 U	18 U	20 U	120	77	120	71	120	76	100	20 U	20 U
Aroclor 1260			57	19 U	18	20 U	97	74	130	65	200	44	110 J	20 U	20 U
Total PCBs	130	1,000	112	19 U	18	20 U	307	391	360	187	403	159	304 J	25	39 Y
Other organic compounds (ug/kg dw)															
1,2,4-Trichlorobenzene			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
1,2-Dichlorobenzene			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
1,3-Dichlorobenzene			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
1,4-Dichlorobenzene			150 U	62 U	20 U	20 U	460 U	59 U	230 U	120 U	110 U	57 U	19 U	140 U	20 U
1-Methylnaphthalene			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	170	25	140 U	20 U
2,2'-Oxybis(1-chloropropane)			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	KCIA1-ST1	KCIA1-ST1	KCIA2-ST1	KCIA2-ST1	ID-ST1	ID-ST2	ID-ST2	KN-ST1	KN-ST1	MH7	MH241	MH242	MH243
Outfall			KCIA SD#1	KCIA SD#1	KCIA SD#2/PS45 EOF	KCIA SD#2/PS45 EOF	SW Idaho St SD	SW Idaho St SD	SW Idaho St SD	SW Kenny St SD/T115 CSO	SW Kenny St SD/T115 CSO	Norfolk CSO/SD/P S17 EOF	2nd Ave S SD	SW Idaho St SD	Diagonal Ave S CSO/SD
Sample type			Trap	Inline	Trap	Inline	Trap	Trap	Inline	Trap	Inline	Inline	Inline	Inline	Inline
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			RZ17	RZ17	RZ17	RZ17	RX79, RZ07	RX79, RZ07	RX79, RZ07	RX79, RZ07	RX79, RZ07	SV75, SW05	SR72	SH27	SJ31
Date			12/03/10	12/03/10	12/03/10	12/03/10	11/18/10	11/18/10	11/18/10	11/18/10	11/18/10	04/29/11	04/13/11	02/02/11	02/16/11
2,4,5-Trichlorophenol			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
2,4,6-Trichlorophenol			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
2,4-Dichlorophenol			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
2,4-Dimethylphenol[a]	29	29	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	**14** J	140 U	20 U
2,4-Dinitrophenol			1,500 U	620 U	200 U	200 U	4,600 U	590 U	2,300 U	1,000 U	1,100 U	610 U	210 U	1,400 U	200 U
2,4-Dinitrotoluene			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
2,6-Dinitrotoluene			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
2-Chloronaphthalene			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	**19 U**	140 U	20 U
2-Chlorophenol			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
2-Methylnaphthalene			150 U	62 U	**10** J	20 U	460 U	59 U	230 U	100 U	110 U	**340**	**43**	140 U	**14** J
2-Methylphenol[a]	63	63	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	**43**	140 U	**12** J
2-Nitroaniline			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
2-Nitrophenol			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	290 U	96 U	140 U	20 U
3,3'-Dichlorobenzidine			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
3-Nitroaniline			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
4,6-Dinitro-2-methylphenol			1,500 U	620 U	200 U	200 U	4,600 U	590 U	2,300 U	1,000 U	1,100 U	570 U	190 U	1,400 U	200 U
4-Bromophenyl-phenylether			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
4-Chloro-3-methylphenol			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
4-Chloroaniline			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
4-Chlorophenyl-phenylether			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
4-Methylphenol[a]	670	670	150 U	62 U	20 U	20 U	**280** J	59 U	230 U	**130**	110 U	**120**	**580**	**200**	**27**
4-Nitroaniline			760 U	310 U	98 U	99 U	2,300 UJ	290 UJ	1,200 UJ	530 UJ	570 UJ	290 U	96 U	680 U	99 U
4-Nitrophenol			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
Benzoic acid[a]	650	650	1,500 U	620 U	**65** J	200 U	4,600 U	590 U	2,300 U	1,000 U	1,100 U	**380** J	**340**	1,400 U	**78** J
Benzyl alcohol[a]	57	73	760 UJ	310 UJ	98 UJ	99 UJ	460 U	59 U	230 U	100 U	110 U	**210**	**100**	680 U	**48** J
bis(2-Chloroethoxy) methane			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
Bis-(2-chloroethyl) ether			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
Carbazole			**1,900**	**440**	**260**	**10** J	**1,100**	**77**	230 U	**96** J	**66** J	**120**	**56**	140 U	**16** J
Dibenzofuran	540	540	**340**	**76**	**40**	20 U	**300** J	59 U	230 U	100 U	110 U	**60**	**29**	140 U	20 U
Hexachlorobenzene	22	70	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
Hexachlorobutadiene	11	120	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
Hexachlorocyclopentadiene			760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	570 U	290 U	96 U	680 U	99 U
Hexachloroethane			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
Isophorone			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	**52**	140 U	20 U
Nitrobenzene			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
N-Nitroso-di-n-propylamine			150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	57 U	19 U	140 U	20 U
N-Nitrosodiphenylamine	28	40	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	**86** J	57 U	**18** J	140 U	20 U
Pentachlorophenol[a]	360	690	760 U	310 U	98 U	99 U	2,300 U	290 U	1,200 U	530 U	**230** J	290 U	**34** J	680 U	99 U
Phenol[a]	420	1,200	150 U	62 U	20 U	20 U	460 U	59 U	230 U	100 U	110 U	**100**	**590**	140 U	**42**

a. Sediment management standards based on dry weight concentration.
b. Sediment quality standard/lowest apparent effects threshold
c. Cleanup screening level/second lowest apparent effects threshold
d. MTCA Method A soil cleanup level
Bold = Compound detected in sample.

J Value is an estimate
U Target analyte not detected at the reported concentration
R Analytical result is rejected and cannot be used.
Y Analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. Y flag is equivalent to U flag with a raised reporting limit.

RCB = Right-of-way catch basin
CB = Onsite catch basin
CSS = Combined sewer system
Inline = Inline grab sample
Dirt = Street dirt sample

Exceeds SQS/LAET/MTCA Method A
Exceeds CSL/2LAET

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	MH244	RCB262	RCB37	RCB154	RCB225	RCB226	RCB227	RCB228	RCB229	RCB230	RCB231	RCB232	RCB233
Outfall			S 96th St SD	1st Ave S SD (west)	Diagonal Ave S CSO/SD	S 96th St SD	S Myrtle St SD	S Myrtle St SD	7th Ave S SD	7th Ave S SD	CS	SW Idaho St SD	Norfolk CSO/SD/PS 17 EOF	West Seattle study area	West Seattle study area
Sample type			Inline	Inline	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SR72	ST44	SH27	SR72	SH27	SH27	SM94	SM94	SM94	SM94	SM94	SO68, E1100318	SO68, E1100318
Date			04/13/11	04/22/11	02/02/11	04/13/11	02/02/11	02/02/11	03/11/11	03/11/11	03/11/11	03/11/11	03/11/11	03/24/11	03/24/11
Total solids (%)			75.7	60.0		70.5	36.1	82.3	44.4	70.1	72.8	84.9	64.2	57.2	40.8
TOC (%)			0.91	8.28		2.55	6.43	4.82	10.40	1.82	2.80	1.22	5.21	6.22 J	14.50
Metals (mg/kg dw)															
Arsenic	57	93	11	13	7 U	18	20	6	10	7	30 U	30 U	14	8 U	10 U
Copper	390	390	39	97 J	376	65.4	860	193	406	82	641	194	44	31	60
Lead	450	530	25	53 J	56	29	724	256	363	45	280	20	47	29	121
Mercury	0.41	0.59	0.03 U	0.25	0.03	0.10	1.53	0.24	0.56	0.04	3.80	0.02 U	0.09	0.04 U	0.08
Zinc	410	960	166 J	519 J	208	468	4,170	763	823	217	1,640	323	122	148	301
Total petroleum hydrocarbons (mg/kg dw)															
TPH-diesel	2,000[b]	2,000[b]	64 U	2,900		110	7,200	620	2,600	64 U	1,500	58 U	72 U	82 U	93 U
TPH-oil	2,000[b]	2,000[b]	160	16,000		810	20,000	2,700	11,000	280	5,900	410	140 U	280	370
LPAH (ug/kg dw)															
Acenaphthene	500	500	19 U	480 U		24	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Acenaphthylene	1,300	1,300	19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Anthracene	960	960	19 U	480 U		19 U	970 U	210 U	350 J	73 J	88 U	25 J	20 U	39 U	58 U
Fluorene	540	540	19 U	480 U		34	970 U	210 U	160 J	18 J	88 U	11 J	20 U	39 U	58 U
Naphthalene	2,100	2,100	19 U	480 U		25	840 J	210 U	110 J	12 J	540	17 J	20 U	39 U	58 U
Phenanthrene	1,500	1,500	61	580		400	2,200	220	680	140	510	120	20 U	32 J	180
Total LPAH	5,200	5,200	61	580		483	3,040 J	220	1,300 J	243 J	1,050	173 J	20	32 J	180
HPAH (ug/kg dw)															
Benzo(a)anthracene	1,300	1,600	32	480 U		250	570 J	230	490	56	450	69	20 U	23 J	87
Benzo(a)pyrene	1,600	1,600	40	480 U		330	780 J	260	1,200	44	430	89	20 U	25 J	110
Total benzofluoranthenes	3,200	3,600	44	290 J		170	890 J	200 J	550	36	460	59	20 U	39 U	60
Benzo(g,h,i)perylene	670	720	95	510		680	1,700	510	1,400 J	120 J	1,900 J	160 J	11 J	52 J	220 J
Chrysene	1,400	2,800	59	510		480	1,800	410	1,400 J	120 J	1,000 J	130 J	20 U	40 J	160 J
Dibenz(a,h)anthracene	230	230	19 U	480 U		52 J	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Fluoranthene	1,700	2,500	90	680		790	2,800	540	1,600	280	1,300	270	10 J	81	340
Indeno(1,2,3-c,d)pyrene	600	690	31 J	480 U		140 J	500 J	160 J	290	27	370	45	20 U	39 U	58 U
Pyrene	2,600	3,300	92 J	890		670 J	2,800	510	1,700 J	160 J	1,100 J	160 J	20 U	52 J	230 J
Total HPAH	12,000	17,000	483 J	2,880 J		3,562 J	11,840 J	2,820 J	8,630 J	843 J	7,010 J	982 J	21 J	273 J	1,207 J
Phthalates (ug/kg dw)															
Bis(2-ethylhexyl)phthalate	1,300	1,900	330	25,000 B		2,400	61,000 B	5,700 B	1,400,000	740	14,000	430	11 J	350	1,100
Butylbenzylphthalate	63	900	44 J	480 U		3,000	5,900	1,500	1,400 J	160 J	4,400 J	330 J	20 UJ	39 U	58 U
Diethylphthalate	200	1,200	19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Dimethylphthalate	71	160	19 U	480 U		37	1,400	370	170 J	14 J	280	20 U	20 U	39 U	58 U
Di-n-butylphthalate	1,400	1,400	23	480 U		69	1,600	230	190 U	54 J	88 U	91 J	20 U	39 U	58 U
Di-n-octylphthalate	6,200	NA	19 U	480 U		350	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
PCBs (ug/kg dw)															
Aroclor 1016			20 U	19 U	20 U	20 U	330 U	20 U	20 U	19 U	19 U	19 U	20 U	20 U	20 U
Aroclor 1221			20 U	19 U	20 U	20 U	330 U	20 U	20 U	19 U	19 U	19 U	20 U	20 U	20 U
Aroclor 1232			20 U	19 U	20 U	20 U	330 U	20 U	20 U	19 U	19 U	19 U	20 U	20 U	20 U
Aroclor 1242			20 U	19 U	20 U	20 U	5,100	20 U	20 U	19 U	19 U	19 U	20 U	20 U	20 U
Aroclor 1248			20 U	29 Y	59 Y	24 Y	330 U	360	220	29 Y	340	19 U	20 U	20 U	20 U
Aroclor 1254			20 U	72 J	150	24	2,300	380	180	74	210	20	20 U	20 U	20 U
Aroclor 1260			20 U	34 J	110	20 U	830 J	120	140 J	28 J	160 J	19 U	25 J	20 U	20 U
Total PCBs	130	1,000	20 U	106 J	260	24	8,230 J	860	540 J	102 J	710 J	20	25 J	20 U	20 U
Other organic compounds (ug/kg dw)															
1,2,4-Trichlorobenzene			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
1,2-Dichlorobenzene			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
1,3-Dichlorobenzene			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
1,4-Dichlorobenzene			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
1-Methylnaphthalene			19 U	480 U		16 J	1,000	210 U	190 U	21 U	320	20 U	20 U	39 U	58 U
2,2'-Oxybis(1-chloropropane)			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	MH244	RCB262	RCB37	RCB154	RCB225	RCB226	RCB227	RCB228	RCB229	RCB230	RCB231	RCB232	RCB233
Outfall			S 96th St SD	1st Ave S SD (west)	Diagonal Ave S CSO/SD	S 96th St SD	S Myrtle St SD	S Myrtle St SD	7th Ave S SD	7th Ave S SD	CS	SW Idaho St SD	Norfolk CSO/SD/PS 17 EOF	West Seattle study area	West Seattle study area
Sample type			Inline	Inline	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SR72	ST44	SH27	SR72	SH27	SH27	SM94	SM94	SM94	SM94	SM94	SO68, E1100318	SO68, E1100318
Date			04/13/11	04/22/11	02/02/11	04/13/11	02/02/11	02/02/11	03/11/11	03/11/11	03/11/11	03/11/11	03/11/11	03/24/11	03/24/11
2,4,5-Trichlorophenol			96 U	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
2,4,6-Trichlorophenol			96 U	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
2,4-Dichlorophenol			96 U	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
2,4-Dimethylphenol[a]	29	29	19 UJ	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
2,4-Dinitrophenol			210 UJ	5,100 U		200 U	9,700 U	2,100 U	1,900 U	210 U	880 U	200 U	200 U	390 U	580 U
2,4-Dinitrotoluene			96 U	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
2,6-Dinitrotoluene			96 U	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
2-Chloronaphthalene			**19 U**	480 U		**19 U**	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
2-Chlorophenol			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
2-Methylnaphthalene			19 U	240 J		26	**2,000**	**120** J	**210**	**14** J	**740**	**10** J	20 U	39 U	58 U
2-Methylphenol[a]	63	63	19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
2-Nitroaniline			96 U	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
2-Nitrophenol			96 U	2,400 U		94 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
3,3'-Dichlorobenzidine			96 UJ	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
3-Nitroaniline			96 U	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 UJ	290 UJ
4,6-Dinitro-2-methylphenol			190 U	4,800 U		190 U	9,700 U	2,100 U	1,900 U	210 U	880 U	200 U	200 U	390 U	580 U
4-Bromophenyl-phenylether			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
4-Chloro-3-methylphenol			96 U	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
4-Chloroaniline			96 UJ	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
4-Chlorophenyl-phenylether			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
4-Methylphenol[a]	670	670	19 U	**290** J		38	**5,000**	**1,700**	**1,400**	**480**	**68** J	**11** J	20 U	**210**	**740**
4-Nitroaniline			96 U	2,400 U		94 U	4,800 U	1,100 U	950 UJ	110 UJ	440 UJ	99 UJ	98 UJ	200 U	290 U
4-Nitrophenol			96 U	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
Benzoic acid[a]	650	650	**54** J	4,800 U		**180** J	**6,500** J	**510** J	1,900 U	**180** J	**360** J	**48** J	**110** J	**180** J	**330** J
Benzyl alcohol[a]	57	73	19 U	480 U		**44**	4,800 U	1,100 U	950 U	**850**	**200** J	**16** J	**460**	200 U	**44** J
bis(2-Chloroethoxy) methane			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Bis-(2-chloroethyl) ether			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Carbazole			19 U	480 U		**54**	970 U	210 U	190 U	**31**	**87** J	**18** J	20 U	39 U	**32** J
Dibenzofuran	540	540	19 U	480 U		**22**	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Hexachlorobenzene	22	70	19 U	480 U		19 U	970 U	210 U	190 U	**18** J	88 U	20 U	20 U	39 U	58 U
Hexachlorobutadiene	11	120	19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Hexachlorocyclopentadiene			96 UJ	2,400 U		94 U	4,800 U	1,100 U	950 U	110 U	440 U	99 U	98 U	200 U	290 U
Hexachloroethane			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Isophorone			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Nitrobenzene			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
N-Nitroso-di-n-propylamine			19 U	480 U		19 U	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
N-Nitrosodiphenylamine	28	40	19 U	480 U		**16** J	970 U	210 U	190 U	21 U	88 U	20 U	20 U	39 U	58 U
Pentachlorophenol[a]	360	690	96 UJ	2,400 U		**48** J	4,800 U	**340** J	950 U	110 U	440 U	99 U	98 U	200 U	290 U
Phenol[a]	420	1,200	**15** J	480 U		74	**870** J	**130** J	190 U	**42**	88 U	**67**	**26**	39 U	**56** J

a. Sediment management standards based on dry weight concentration.
b. Sediment quality standard/lowest apparent effects threshold
c. Cleanup screening level/second lowest apparent effects threshold
d. MTCA Method A soil cleanup level
Bold = Compound detected in sample.
J Value is an estimate
U Target analyte not detected at the reported concentration
R Analytical result is rejected and cannot be used.
Y Analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. Y flag is equivalent to U flag with a raised reporting limit.

RCB = Right-of-way catch basin
CB = Onsite catch basin
CSS = Combined sewer system
Inline = Inline grab sample
Dirt = Street dirt sample

(grey) Exceeds SQS/LAET/MTCA Method A
(black) Exceeds CSL/2LAET

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	RCB234	RCB235	RCB236	RCB237	RCB238	RCB239	RCB240	RCB241	RCB242	RCB243	RCB244	RCBC245	RCB246	RCB247
Outfall			West Seattle study area	West Seattle study area	West Seattle study area	Georgetown study area	Georgetown study area	South Park study area	South Park study area	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD
Sample type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SO68, E1100318	SO68, E1100318	SO68, E1100318	SQ00, E1100342	SQ00, E1100342	SQ00, E1100342	SQ00, E1100342	SQ00, E1100342	SQ00, E1100342	SR10, E1100369	SR10, E1100369	SR10, E1100369	SR10, E1100369	SR10, E1100369
Date			03/24/11	03/24/11	03/24/11	04/01/11	04/01/11	04/01/11	04/01/11	04/01/11	04/01/11	04/08/11	04/08/11	04/08/11	04/08/11	04/08/11
Total solids (%)			38.6	34.7	69.8	36.5	76.5	45.0	37.8	42.8	64.5	68.7	42.0	67.5	43.0	60.4
TOC (%)			22.50	21.80	7.34	13.90	1.66	11.30	5.75	10.10	4.08	5.06	11.40	8.52	12.90	8.85
Metals (mg/kg dw)																
Arsenic	57	93	10 U	9 U	16	10	6 U	10 U	10 U	10 U	13	7 U	10 U	7 U	10 U	8
Copper	390	390	30	38	30	138	28	37	89	95.6	138	53	99	66	63	47
Lead	450	530	28	27	28	213	175	26	74	72	118	34	81	29	63	46
Mercury	0.41	0.59	0.05 U	0.04 U	0.16	0.19	0.03	0.04 U	0.10	0.05	0.15	0.03 U	0.08	0.03 U	0.10	0.04
Zinc	410	960	89	166	117	698	94	147	458	370	460	135	365	186	344	213
Total petroleum hydrocarbons (mg/kg dw)																
TPH-diesel	2,000[b]	2,000[b]	110 U	120 U	65 U	780	140	330	1,000	520	340	140	850	190	120 U	340
TPH-oil	2,000[b]	2,000[b]	570	500	400	4,900	1,200	1,700	6,300	3,400	2,300	1,000	5,900	1,000	680	3,100
LPAH (ug/kg dw)																
Acenaphthene	500	500	26 J	40 U	39 U	200 U	58 U	89 U	240 U	130 U	160	97 U	390 U	99 U	200 U	170
Acenaphthylene	1,300	1,300	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	57 J	97 U	390 U	99 U	200 U	170
Anthracene	960	960	150 J	40 U	39 U	170 J	58 U	89 U	240 U	210 J	390 J	97 U	390 U	99 U	200 U	170
Fluorene	540	540	39 J	40 U	39 U	140 J	58 U	89 U	240 U	130 U	250	97 U	390 U	99 U	200 U	170
Naphthalene	2,100	2,100	20 J	40 U	39 U	120 J	58 U	89 U	240 U	94 J	110 J	97 U	390 U	99 U	200 U	170
Phenanthrene	1,500	1,500	920	53	39 U	860	100	75 J	320	780	2,100	73 J	470	61 J	230	190
Total LPAH	5,200	5,200	1,155 J	53	39 U	1,290 J	100	75 J	320	1,084 J	3,067 J	73 J	470	61 J	230	190
HPAH (ug/kg dw)																
Benzo(a)anthracene	1,300	1,600	630	40 U	39 U	410	41 J	89 U	240 U	1,100	570	97 U	390 U	99 U	220	85
Benzo(a)pyrene	1,600	1,600	1,300	40 U	39 U	600	39 J	89 U	240 U	1,400	530	45 J	390	99 U	280	130
Total benzofluoranthenes	3,200	3,600	440	40 U	39 U	600	60	89 U	190 J	930	280	71 J	440	83 J	200	180
Benzo(g,h,i)perylene	670	720	2,600 J	40 U	39 U	1,300 J	92 J	78 J	220 J	2,900 J	1,300 J	92 J	490	72 J	440	230
Chrysene	1,400	2,800	1,700 J	34 J	36 J	1,000 J	97 J	76 J	240 J	2,000 J	1,400 J	130	620	91 J	310	240
Dibenz(a,h)anthracene	230	230	40 U	40 U	39 U	200 U	58 U	89 U	240 U	390	100	97 U	390 U	99 U	200 U	170
Fluoranthene	1,700	2,500	3,000	80	39 U	1,700	160	130	440	3,400	3,100	120	780	100	500	380
Indeno(1,2,3-c,d)pyrene	600	690	440	40 U	39 U	410	29 J	89 U	240 U	830	190	97 U	390 U	99 U	150 J	72
Pyrene	2,600	3,300	1,800 J	51 J	39 U	1,100 J	92 J	80 J	270 J	1,800 J	1,600 J	97 J	640	83 J	300	260
Total HPAH	12,000	17,000	11,910 J	165 J	36 J	7,120 J	610 J	364 J	1,360 J	14,750 J	9,070 J	555 J	3,360	429 J	2,400 J	1,577
Phthalates (ug/kg dw)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	810	570	290	6,200	1,700	1,200	4,900	7,000	3,800	870	16,000	2,100	2,300	3,000
Butylbenzylphthalate	63	900	40 U	40 U	39 U	200 U	58 UJ	180 J	190 J	290 J	310 J	97 U	390 U	260	200 U	170
Diethylphthalate	200	1,200	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
Dimethylphthalate	71	160	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
Di-n-butylphthalate	1,400	1,400	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	380 J	97 U	390 U	99 U	200 U	170
Di-n-octylphthalate	6,200	NA	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
PCBs (ug/kg dw)																
Aroclor 1016			20 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20
Aroclor 1221			20 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20
Aroclor 1232			20 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20
Aroclor 1242			20 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20
Aroclor 1248			20 U	20 U	19 U	60	20 U	20 U	20 U	27	81	20 U	20 U	20 U	20 U	20
Aroclor 1254			20 U	20 U	19 U	85	20 U	20 U	20	50	120	20 U	28	20 U	20 U	20
Aroclor 1260			20 U	20 U	19 U	49	20 U	20 U	20 U	36	91	20 U	20 U	20 U	20 U	20
Total PCBs	130	1,000	20 U	20 U	19 U	194	20 U	20 U	20	113	292	20 U	28	20 U	20 U	20
Other organic compounds (ug/kg dw)																
1,2,4-Trichlorobenzene			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
1,2-Dichlorobenzene			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
1,3-Dichlorobenzene			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
1,4-Dichlorobenzene			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
1-Methylnaphthalene			40 U	40 U	39 U	250	58 U	89 U	240 U	130 U	53 J	97 U	390 U	62 J	200 U	170
2,2'-Oxybis(1-chloropropane)			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	RCB234	RCB235	RCB236	RCB237	RCB238	RCB239	RCB240	RCB241	RCB242	RCB243	RCB244	RCBC245	RCB246	RCB247
Outfall			West Seattle study area	West Seattle study area	West Seattle study area	Georgetown study area	Georgetown study area	South Park study area	South Park study area	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD
Sample type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SO68, E1100318	SO68, E1100318	SO68, E1100318	SQ00, E1100342	SQ00, E1100342	SQ00, E1100342	SQ00, E1100342	SQ00, E1100342	SQ00, E1100342	SR10, E1100369	SR10, E1100369	SR10, E1100369	SR10, E1100369	SR10, E1100369
Date			03/24/11	03/24/11	03/24/11	04/01/11	04/01/11	04/01/11	04/01/11	04/01/11	04/01/11	04/08/11	04/08/11	04/08/11	04/08/11	04/08/11
2,4,5-Trichlorophenol			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
2,4,6-Trichlorophenol			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
2,4-Dichlorophenol			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	**43** J	490 U	1,900 U	490 U	980 U	840
2,4-Dimethylphenol[a]	29	29	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
2,4-Dinitrophenol			400 U	400 U	390 U	2,000 U	580 U	890 U	2,400 U	1,300 U	710 U	970 U	3,900 U	990 U	2,000 U	1,700
2,4-Dinitrotoluene			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
2,6-Dinitrotoluene			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
2-Chloronaphthalene			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
2-Chlorophenol			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
2-Methylnaphthalene			40 U	40 U	39 U	**400**	58 U	89 U	240 U	**65** J	**93**	97 U	390 U	**80** J	200 U	170
2-Methylphenol[a]	63	63	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
2-Nitroaniline			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
2-Nitrophenol			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
3,3'-Dichlorobenzidine			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
3-Nitroaniline			200 UJ	200 UJ	190 UJ	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
4,6-Dinitro-2-methylphenol			400 U	400 U	390 U	2,000 U	580 U	890 U	2,400 U	1,300 U	710 U	970 U	3,900 U	990 U	2,000 U	1,700
4-Bromophenyl-phenylether			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
4-Chloro-3-methylphenol			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
4-Chloroaniline			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 UJ	1,900 UJ	490 UJ	980 UJ	840
4-Chlorophenyl-phenylether			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
4-Methylphenol[a]	670	670	**2,200**	**3,900**	**270**	**2,200**	58 U	**2,700**	**210** J	**1,200**	**150**	**1,100**	**2,000**	**740**	**1,200**	**6,000**
4-Nitroaniline			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
4-Nitrophenol			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
Benzoic acid[a]	650	650	**1,000**	**2,700**	**390**	**720** J	**120** J	**1,100**	**1,300** J	**1,900**	**92** J	**440** J	**1,100** J	**220** J	**720** J	**1,700**
Benzyl alcohol[a]	57	73	200 U	**98** J	190 U	1,000 U	**7,600**	**89** J	1,200 U	**120** J	**43** J	490 U	1,900 U	490 U	980 U	**130**
bis(2-Chloroethoxy) methane			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
Bis-(2-chloroethyl) ether			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
Carbazole			**260**	40 U	39 U	200 U	58 U	89 U	240 U	**310**	**210**	97 U	390 U	99 U	200 U	170
Dibenzofuran	540	540	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	**150**	97 U	390 U	99 U	200 U	170
Hexachlorobenzene	22	70	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
Hexachlorobutadiene	11	120	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
Hexachlorocyclopentadiene			200 U	200 U	190 U	1,000 U	290 U	450 U	1,200 U	630 U	360 U	490 U	1,900 U	490 U	980 U	840
Hexachloroethane			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
Isophorone			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
Nitrobenzene			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
N-Nitroso-di-n-propylamine			40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
N-Nitrosodiphenylamine	28	40	40 U	40 U	39 U	200 U	58 U	89 U	240 U	130 U	71 U	97 U	390 U	99 U	200 U	170
Pentachlorophenol[a]	360	690	200 U	200 U	190 U	**100** J	290 U	450 U	1,200 U	630 U	**82** J	**58** J	1,900 U	490 U	**340** J	840
Phenol[a]	420	1,200	**260**	**760**	**43**	200 U	**570**	**190**	**140** J	**200**	**110**	**150**	390 U	99 U	**200**	**140**

a. Sediment management standards based on dry weight concentration.
b. Sediment quality standard/lowest apparent effects threshold
c. Cleanup screening level/second lowest apparent effects threshold
d. MTCA Method A soil cleanup level
Bold = Compound detected in sample.
J Value is an estimate
U Target analyte not detected at the reported concentration
R Analytical result is rejected and cannot be used.
Y Analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. Y flag is equivalent to U flag with a raised reporting limit.

RCB = Right-of-way catch basin
CB = Onsite catch basin
CSS = Combined sewer system
Inline = Inline grab sample
Dirt = Street dirt sample

Exceeds SQS/LAET/MTCA Method A (grey shading)
Exceeds CSL/2LAET (black shading)

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	RCB248	RCB249	RCB250	RCB251	RCB252	RCB253	RCB254	RCB255	RCB256	RCB257	RCB258	RCB259	RCB260	RCB261
Outfall			Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	SW Idaho St SD	Highland Park Wy SW SD	Highland Park Wy SW SD
Sample type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SR10, E1100369	SS85	SS85	SS85	SS85	SS85	ST44	ST44	ST44	ST44	ST44	ST44	ST44	ST44
Date			04/08/11	04/20/11	04/20/11	04/20/11	04/20/11	04/20/11	04/22/11	04/22/11	04/22/11	04/22/11	04/22/11	04/22/11	04/22/11	04/22/11
Total solids (%)			56.9	32.7	73.2	45.1	78.2	61.5	61.9	42.4	37.7	35.3	53.5	37.0	63.7	48.7
TOC (%)			12.00	10.10	5.23	9.80	1.98	8.41	6.51	7.60	7.15	10.20	10.70	11.10	6.72	6.59
Metals (mg/kg dw)																
Arsenic	57	93 U	10 U	10 U	7 U	10 U	6 U	8 U	8 U	10	20	10 U	17	10 U	7 U	10 U
Copper	390	390	2,670	48	57	70	13	30	70.1 J	70 J	77 J	72 J	74 J	84 J	29 J	32 J
Lead	450	530	43	313	29	96	6	32	54 J	238 J	191 J	92 J	107 J	29 J	24 J	20 J
Mercury	0.41	0.59	0.03 U	0.10	0.05	0.06	0.02 U	0.03 U	0.03 U	0.12	0.11	0.07	0.08	0.09	0.03	0.05
Zinc	410	960	153	409	119	323	44	113	218 J	312 J	532 J	317 J	641 J	276 J	175 J	155 J
Total petroleum hydrocarbons (mg/kg dw)																
TPH-diesel	2,000[b]	2,000[b]	530	120 U	310	300	63 U	250	78 U	110 U	160	130 U	87 U	130 U	77	160
TPH-oil	2,000[b]	2,000[b]	2,900	690	2,600	2,500	310	1,700	750	270	800	810	260	620	280	920
LPAH (ug/kg dw)																
Acenaphthene	500	500 U	160 U	120 U	53 U	32 J	18 U	56 U	94 U	58 U	33 J	58 U	56 U	58 U	54 U	57 U
Acenaphthylene	1,300	1,300 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
Anthracene	960	960 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	32 J	140	61	56 U	58 U	54 U	57 U
Fluorene	540	540 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	32 J	92	38 J	56 U	58 U	54 U	57 U
Naphthalene	2,100	2,100 U	380	58 J	53 U	75	18 U	56 U	94 U	170	89	49 J	39 J	35 J	54 U	40 J
Phenanthrene	1,500	1,500	160 U	220 B	87 B	160 B	25 B	130 B	110	380	1,000	390	70	120	66	120
Total LPAH	5,200	5,200	380	278 B	87 B	267 B	25 B	130 B	110	614 J	1,354 J	538 J	109 J	155 J	66	160 J
HPAH (ug/kg dw)																
Benzo(a)anthracene	1,300	1,600 J	160 U	93 J	53	49 J	15 J	62	57 J	170	580	260	45 J	58 U	54 U	37 J
Benzo(a)pyrene	1,600	1,600 J	160 U	110 J	53	46 J	14 J	76	66 J	190	630	260	59	50 J	33 J	40 J
Total benzofluoranthenes	3,200	3,600	92 J	130	110	130	18	110	150	120	380	170	76 J	38 J	33 J	37 J
Benzo(g,h,i)perylene	670	720	93 J	220	100	110	31	170	180	500	1,500	750	170	130	82	150
Chrysene	1,400	2,800	160 U	190	140	150	25	170	150	330	920	420	120	110	68	94
Dibenz(a,h)anthracene	230	230 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	55 J	130	58	56 U	58 U	54 U	57 U
Fluoranthene	1,700	2,500	130 J	240	130	160	34	180	170	530	1,800	660	120	130	84	110
Indeno(1,2,3-c,d)pyrene	600	690 J	160 U	70 J	48 J	49 J	18 U	56 J	52 J	92	290	120	56 U	58 U	54 U	57 U
Pyrene	2,600	3,300	120 J	280	190	220	36	190	200	470	1,600	600	130	160	110	130
Total HPAH	12,000	17,000 J	435 J	1,333 J	824 J	914 J	173 J	1,014 J	1,025 J	2,457 J	7,830	3,298	720 J	618 J	410 J	598 J
Phthalates (ug/kg dw)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	1,500	4,300	1,500	22,000	840	1,300	1,500 B	2,300 B	20,000	5,500 B	1,200 B	7,800	2,500 B	1,700 B
Butylbenzylphthalate	63	900 U	160 U	360 J	160 J	58 J	32 J	56 J	140	560	370	58 U	200	180	460	57 U
Diethylphthalate	200	1,200 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	84	57 U
Dimethylphthalate	71	160 U	160 U	120 U	53 U	32 J	18 U	62	94 U	100	56 U	58 U	56 U	58 U	100	57 U
Di-n-butylphthalate	1,400	1,400 U	160 U	270	40 J	560	18 UJ	99	4,200	52 J	56 U	58 U	53 J	47 J	54 U	57 U
Di-n-octylphthalate	6,200	NA U	160 U	120	98	170	39	79	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
PCBs (ug/kg dw)																
Aroclor 1016		U	20 U	19 U	18 U	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U	20 U
Aroclor 1221		U	20 U	19 U	18 U	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U	20 U
Aroclor 1232		U	20 U	19	18 U	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U	20 U
Aroclor 1242		U	20 U	19 U	18 U	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U	20 U
Aroclor 1248		U	27	19 U	18 U	19 U	20 U	19 U	20 U	20 U	20 U	20 U	20 U	20 U	19 U	20 U
Aroclor 1254		U	29	37	18 U	19 U	20 U	19 U	29 J	22 J	98 J	65 J	58 J	20 UJ	19 UJ	20 UJ
Aroclor 1260		U	20 U	19 U	18 U	9,200 J	20 U	19 U	20 U	20 UJ	38 J	20 UJ	23 J	20 UJ	19 UJ	20 UJ
Total PCBs	130	1,000 U	56	56	18 U	9,200	20 U	19 U	29	22 J	136 J	65 J	81 J	20 UJ	19 UJ	20 UJ
Other organic compounds (ug/kg dw)																
1,2,4-Trichlorobenzene		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
1,2-Dichlorobenzene		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
1,3-Dichlorobenzene		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
1,4-Dichlorobenzene		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
1-Methylnaphthalene		U	460	120 U	53 U	32 J	18 U	56 U	94 U	270	47 J	58 U	56 U	35 J	54 U	57 U
2,2'-Oxybis(1-chloropropane)		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	RCB248	RCB249	RCB250	RCB251	RCB252	RCB253	RCB254	RCB255	RCB256	RCB257	RCB258	RCB259	RCB260	RCB261
Outfall			Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	SW Idaho St SD	Highland Park Wy SW SD	Highland Park Wy SW SD
Sample type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SR10, E1100369	SS85	SS85	SS85	SS85	SS85	ST44	ST44	ST44	ST44	ST44	ST44	ST44	ST44
Date			04/08/11	04/20/11	04/20/11	04/20/11	04/20/11	04/20/11	04/22/11	04/22/11	04/22/11	04/22/11	04/22/11	04/22/11	04/22/11	04/22/11
2,4,5-Trichlorophenol		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	270 U	280 U
2,4,6-Trichlorophenol		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	270 U	280 U
2,4-Dichlorophenol		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	270 U	280 U
2,4-Dimethylphenol[a]	29	29 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
2,4-Dinitrophenol		U	1,600 U	1,200 U	560 U	620 U	200 U	600 U	1,000 U	610 U	590 U	620 U	600 U	620 U	580 U	610 U
2,4-Dinitrotoluene		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	270 U	280 U
2,6-Dinitrotoluene		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	270 U	280 U
2-Chloronaphthalene		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
2-Chlorophenol		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
2-Methylnaphthalene		U	**1,000**	120 U	53 U	**52** J	18 U	56 U	94 U	**570**	**110**	**38** J	56 U	**52** J	54 U	**51** J
2-Methylphenol[a]	63	63 U	160 U	120 U	53 U	58 U	18 U	34 J	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
2-Nitroaniline		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	270 U	280 U
2-Nitrophenol		U	160 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	270 U	280 U
3,3'-Dichlorobenzidine		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	R	290 U	270 U	280 U
3-Nitroaniline		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	270 U	280 U
4,6-Dinitro-2-methylphenol		U	1,600 U	1,200 U	530 U	580 U	180 U	560 U	940 U	580 U	560 U	580 U	560 U	580 U	540 U	570 U
4-Bromophenyl-phenylether		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
4-Chloro-3-methylphenol		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	36 J	280 U
4-Chloroaniline		UJ	820 UJ	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	R	290 U	270 U	280 U
4-Chlorophenyl-phenylether		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
4-Methylphenol[a]	670	670	**2,600**	**6,800**	**1,000**	**1,300**	**150**	**1,800**	**620**	**270**	**4,600**	**760**	**59**	**1,000**	**210**	**5,300**
4-Nitroaniline		U	820 U	580 UJ	260 UJ	290 UJ	91 U	280 UJ	470 U	290 U	280 U	290 U	R	290 U	270 U	280 U
4-Nitrophenol		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	280 U	290 U	270 U	280 U
Benzoic acid[a]	650	650	**510** J	**4,600**	**250** J	**1,300**	180 U	**550** J	**180** J	**920**	**1,600**	**910**	**1,100**	**1,300**	**150** J	**580**
Benzyl alcohol[a]	57	73 J	820 U	410	53 U	**120**	18 U	**48** J	94 U	58 U	**260**	58 U	**260**	**700**	54 U	57 U
bis(2-Chloroethoxy) methane		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
Bis-(2-chloroethyl) ether		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
Carbazole		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	**60**	**200**	**72**	**31** J	58 U	54 U	57 U
Dibenzofuran	540	540 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	**47** J	58 U	56 U	58 U	54 U	57 U
Hexachlorobenzene	22	70 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	**52** J	54 U	57 U
Hexachlorobutadiene	11	120 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
Hexachlorocyclopentadiene		U	820 U	580 U	260 U	290 U	91 U	280 U	470 U	290 U	280 U	290 U	0 R	290 U	270 U	280 U
Hexachloroethane		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 UJ	58 U	54 U	57 U
Isophorone		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
Nitrobenzene		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
N-Nitroso-di-n-propylamine		U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	56 U	58 U	56 U	58 U	54 U	57 U
N-Nitrosodiphenylamine	28	40 U	160 U	120 U	53 U	58 U	18 U	56 U	94 U	58 U	30 J	58 U	56 UJ	58 U	54 U	57 U
Pentachlorophenol[a]	360	690 U	820 U	580 UJ	260 UJ	290 UJ	91 UJ	280 UJ	470 U	290 U	**150** J	**150** J	280 U	290 U	270 U	280 U
Phenol[a]	420	1,200 J	160 U	**2,200**	**58**	**200**	**26**	**110**	**94**	**660**	**800**	**840**	**280**	**140**	**180**	**350**

a. Sediment management standards based on dry weight concentration.
b. Sediment quality standard/lowest apparent effects threshold
c. Cleanup screening level/second lowest apparent effects threshold
d. MTCA Method A soil cleanup level
Bold = Compound detected in sample.
J Value is an estimate
U Target analyte not detected at the reported concentration
R Analytical result is rejected and cannot be used.
Y Analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. Y flag is equivalent to U flag with a raised reporting limit.

RCB = Right-of-way catch basin
CB = Onsite catch basin
CSS = Combined sewer system
Inline = Inline grab sample
Dirt = Street dirt sample

(light grey) Exceeds SQS/LAET/MTCA Method A
(black) Exceeds CSL/2LAET

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	RCB263	RCB264	RCB265	RCB266	RCB267	RCB268	RCB269	RCB270	RCB271	RCB272	RCB159-0	RCB159-3	RCB159-12	RCB273-0
Outfall			7th Ave S SD	Norfolk CSO/SD/P S17 EOF	Norfolk CSO/SD/P S17 EOF	Norfolk CSO/SD/P S17 EOF	S 96th St SD	S 96th St SD	S 96th St SD	Hamm Creek	S 96th St SD	S 96th St SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD
Sample type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	Soil	Soil	Soil	Soil
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SU75, SW05	SU75, SW05	SU75, SW05	SU75, SW05	SW81, E1100546	SW81, E1100546	SW81, E1100546	SW81, E1100546	SW81, E1100546	SW84, E1100547	SX83	SX83	SX83	SX83
Date			04/29/11	04/29/11	04/29/11	04/29/11	05/13/11	05/13/11	05/13/11	05/13/11	05/13/11	05/13/11	05/20/11	05/20/11	05/20/11	05/20/11
Total solids (%)			72.1	68.1	62.8	52.8	77.7	81.1	80.9	73.9	55.3	80.3	59.0	62.3	74.4	66.2
TOC (%)			4.69	6.63	6.62	10.60	7.84	4.76	1.45	3.85	8.50	3.05	11.90	9.24	2.33	5.97
Metals (mg/kg dw)																
Arsenic	57	93	10	7	9	9 U	7	7 U	6 U	7 U	9 U	6 U	474	950	260	198
Copper	390	390	28	77	193	45	26	25	15	24	44	23	3,240	8,370	2,110	410
Lead	450	530	15	108	45	22	38	17	3	34	125	24	176	105	20	50
Mercury	0.41	0.59	0.02 U	0.03	0.03	0.05 U	0.03 U	0.03 U	0.03 U	0.02 U	0.07	0.03	0.27	0.26	0.13	0.19
Zinc	410	960	116	235	383	180	388	93	70	65	151	98	825	1,660	594	468
Total petroleum hydrocarbons (mg/kg dw)																
TPH-diesel	2,000[b]	2,000[b]	160	950	950	250	120	47	28 U	170	94	53	220	230	63 U	67 U
TPH-oil	2,000[b]	2,000[b]	760	3,700	5,900	1,100	720	220	71	810	520	300	1,500	1,900	420	340
LPAH (ug/kg dw)																
Acenaphthene	500	500	56 U	56 U	94	580	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Acenaphthylene	1,300	1,300	56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Anthracene	960	960	56 U	56 U	180	2,200	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Fluorene	540	540	56 U	56	110	850	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Naphthalene	2,100	2,100	56 U	70	94	81	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Phenanthrene	1,500	1,500	87	600	1,100	13,000	330	88 J	88 U	120	180	170	98	190 U	99 U	94 U
Total LPAH	5,200	5,200	87	726	1,578	16,711	330	88 J	88 U	120	180	170	98	190 U	99 U	94 U
HPAH (ug/kg dw)																
Benzo(a)anthracene	1,300	1,600	56 U	190	400	5,300	330	56 J	88 U	68 J	120	140	59 J	190 U	99 U	94 U
Benzo(a)pyrene	1,600	1,600	56 U	180	370	4,400	320	79 J	88 U	82 J	150	160	78 J	96 J	99 U	94 U
Total benzofluoranthenes	3,200	3,600	50 J	230	460	2,800	290	88 J	88 U	110	130	160	140	210	99 U	80 J
Benzo(g,h,i)perylene	670	720	92	490	920	7,900	710	180	66 J	170	300	360	250	370	74 J	99
Chrysene	1,400	2,800	84	440	710	5,600	500	110	44 J	180	220	200	210	290	64 J	76 J
Dibenz(a,h)anthracene	230	230	56 U	48 J	120	760	85 J	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Fluoranthene	1,700	2,500	110	920	1,300	15,000	920	180	66 J	170	340	390	160	150 J	99 U	61 J
Indeno(1,2,3-c,d)pyrene	600	690	56 U	140	260	2,600	240	70 J	88 U	58 J	97	130	98 U	96 J	99 U	94 U
Pyrene	2,600	3,300	100	740	1,200	13,000	770	150	53 J	180	300	310	170	150 J	99 U	71 J
Total HPAH	12,000	17,000	436 J	3,378 J	5,740	57,360	4,165 J	913 J	229 J	1,018 J	1,657	1,850	1,067 J	1,362 J	138 J	387 J
Phthalates (ug/kg dw)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	1,400 B	9,700 B	15,000 B	2,100 B	1,500	360	48 J	1,500	1,000	490	990 B	1,200 B	240 B	300 B
Butylbenzylphthalate	63	900	92 J	1,400 J	300 J	410 J	280	780	88 U	97 U	97 U	110	83 J	190 U	99 U	94 U
Diethylphthalate	200	1,200	56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Dimethylphthalate	71	160	56 U	260	59 U	58 U	95 U	93 U	88 U	97	97 U	94 U	98 U	190 U	99 U	94 U
Di-n-butylphthalate	1,400	1,400	92	320	50 J	58 U	95 U	93 U	88 U	100	97 U	94 U	98 U	190 U	99 U	94 U
Di-n-octylphthalate	6,200	NA	56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
PCBs (ug/kg dw)																
Aroclor 1016			19 U	19 U	19 U	19 U	20 U	19 U	18 U	18 U	19 U	19 U	20 U	20 U	18 U	20 U
Aroclor 1221			19 U	19 U	19 U	19 U	20 U	19 U	18 U	18 U	19 U	19 U	20 U	20 U	18 U	20 U
Aroclor 1232			19 U	19 U	19 U	19 U	20 U	19 U	18 U	18 U	19 U	19 U	20 U	20 U	18 U	20 U
Aroclor 1242			19 U	19 U	19 U	19 U	20 U	19 U	18 U	18 U	19 U	19 U	20 U	20 U	18 U	20 U
Aroclor 1248			19 U	43	34	19 U	20 U	19 U	18 U	18 U	19 U	19 U	49 Y	30 Y	18 U	49 Y
Aroclor 1254			19 U	58	85	19 U	20 U	19 U	18 U	18 U	19 U	19 U	130	77	29	140
Aroclor 1260			19 U	20	67	19 U	20 U	19 U	18 U	18 U	19 U	19 U	41	50	29	25
Total PCBs	130	1,000	19 U	121	186	19 U	20 U	19 U	18 U	18 U	19 U	19 U	171	127	58	165
Other organic compounds (ug/kg dw)																
1,2,4-Trichlorobenzene			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
1,2-Dichlorobenzene			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
1,3-Dichlorobenzene			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
1,4-Dichlorobenzene			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
1-Methylnaphthalene			56 U	53 J	38 J	61	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
2,2'-Oxybis(1-chloropropane)			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	RCB263	RCB264	RCB265	RCB266	RCB267	RCB268	RCB269	RCB270	RCB271	RCB272	RCB159-0	RCB159-3	RCB159-12	RCB273-0
Outfall			7th Ave S SD	Norfolk CSO/SD/P S17 EOF	Norfolk CSO/SD/P S17 EOF	Norfolk CSO/SD/P S17 EOF	S 96th St SD	S 96th St SD	S 96th St SD	Hamm Creek	S 96th St SD	S 96th St SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD
Sample type			RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	RCB	Soil	Soil	Soil	Soil
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SU75, SW05	SU75, SW05	SU75, SW05	SU75, SW05	SW81, E1100546	SW81, E1100546	SW81, E1100546	SW81, E1100546	SW81, E1100546	SW84, E1100547	SX83	SX83	SX83	SX83
Date			04/29/11	04/29/11	04/29/11	04/29/11	05/13/11	05/13/11	05/13/11	05/13/11	05/13/11	05/13/11	05/20/11	05/20/11	05/20/11	05/20/11
2,4,5-Trichlorophenol			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
2,4,6-Trichlorophenol			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
2,4-Dichlorophenol			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
2,4-Dimethylphenol[a]	29	29	56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
2,4-Dinitrophenol			600 U	600 U	630 U	620 U	1,000 UJ	990 UJ	940 UJ	1,000 UJ	1,000 UJ	1,000 UJ	1,000 U	2,000 U	1,100 U	1,000 U
2,4-Dinitrotoluene			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
2,6-Dinitrotoluene			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
2-Chloronaphthalene			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
2-Chlorophenol			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
2-Methylnaphthalene			56 U	**110**	**82**	**67**	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
2-Methylphenol[a]	63	63	56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	**73** J	94 U	98 U	190 U	99 U	94 U
2-Nitroaniline			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
2-Nitrophenol			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
3,3'-Dichlorobenzidine			280 U	280 U	290 U	290 U	470 UJ	460 UJ	440 UJ	480 UJ	480 UJ	470 UJ	490 U	960 U	500 U	470 U
3-Nitroaniline			280 U	280 U	290 U	290 U	470 UJ	460 UJ	440 UJ	480 UJ	480 UJ	470 UJ	490 U	960 U	500 U	470 U
4,6-Dinitro-2-methylphenol			560 U	560 U	590 U	580 U	950 U	930 U	880 U	970 U	970 U	940 U	980 U	1,900 U	990 U	940 U
4-Bromophenyl-phenylether			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
4-Chloro-3-methylphenol			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
4-Chloroaniline			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
4-Chlorophenyl-phenylether			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
4-Methylphenol[a]	670	670	**610**	**510**	**350**	**1,900**	**81** J	93 U	88 U	**110**	**400**	**110**	**54** J	190 U	99 U	94 U
4-Nitroaniline			280 U	280 U	290 U	290 U	470 U	460 U	440 U	480 U	480 U	470 U	490 U	960 U	500 U	470 U
4-Nitrophenol			280 U	280 U	290 U	290 U	470 UJ	460 UJ	440 UJ	480 UJ	480 UJ	470 UJ	490 U	960 U	500 U	470 U
Benzoic acid[a]	650	650	**140** J	**160** J	**130** J	**400** J	**240** J	930 U	880 U	970 U	**3,800**	940 U	**940** J	**1,700** J	990 U	**370** J
Benzyl alcohol[a]	57	73	56 U	56 U	**120**	58 U	95 U	93 U	88 U	97 U	**270**	94 U	**3,700**	**1,600**	**140**	**1,500**
bis(2-Chloroethoxy) methane			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Bis(2-chloroethyl) ether			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Carbazole			56 U	**70**	**200**	**1,800**	**57** J	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Dibenzofuran	540	540	56 U	56 U	**56** J	**320**	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Hexachlorobenzene	22	70	56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Hexachlorobutadiene	11	120	56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Hexachlorocyclopentadiene			280 U	280 U	290 U	290 U	470 UJ	460 UJ	440 UJ	480 UJ	480 UJ	470 UJ	490 UJ	960 UJ	500 UJ	470 UJ
Hexachloroethane			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Isophorone			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Nitrobenzene			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
N-Nitroso-di-n-propylamine			56 U	56 U	59 U	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
N-Nitrosodiphenylamine	28	40	56 U	**48** J	**73**	58 U	95 U	93 U	88 U	97 U	97 U	94 U	98 U	190 U	99 U	94 U
Pentachlorophenol[a]	360	690	280 U	280 U	290 U	290 U	470 UJ	460 UJ	440 UJ	480 UJ	480 UJ	470 UJ	490 UJ	960 UJ	500 UJ	470 UJ
Phenol[a]	420	1,200	**56**	**82**	**190**	**210**	95 U	93 U	88 U	**58** J	**910**	94 U	**230**	**260**	99 U	**71** J

a. Sediment management standards based on dry weight concentration.
b. Sediment quality standard/lowest apparent effects threshold
c. Cleanup screening level/second lowest apparent effects threshold
d. MTCA Method A soil cleanup level
Bold = Compound detected in sample.

J Value is an estimate
U Target analyte not detected at the reported concentration
R Analytical result is rejected and cannot be used.
Y Analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. Y flag is equivalent to U flag with a raised reporting limit.

RCB = Right-of-way catch basin
CB = Onsite catch basin
CSS = Combined sewer system
Inline = Inline grab sample
Dirt = Street dirt sample

Exceeds SQS/LAET/MTCA Method A
Exceeds CSL/2LAET

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	RCB273-3	RCB273-12	RCB274-0	RCB274-3	RCB274-12	RCB275-0	RCB275-3	RCB275-12	CB108	CB206	CB210	CB211	CB212	CB213
Outfall			7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	2nd Ave S SD	Private SD	Norfolk CSO/SD/P S17 EOF	S Myrtle St SD	S Myrtle St SD	Norfolk CSO/SD/P S17 EOF
Sample type			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	RCB	CB	CB	CB	CB	CB
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SX83	SX83	SX83	SX83	SX83	SX83	SX83	SX83	SR72	SR72	SS85	SU75, SW05	SU75, SW05	SV01
Date			05/20/11	05/20/11	05/20/11	05/20/11	05/20/11	05/20/11	05/20/11	05/20/11	04/13/11	04/13/11	04/20/11	04/29/11	04/29/11	05/02/11
Total solids (%)			81.1	91.9	69.1	78.0	89.5	78.4	67.3	91.1	72.1	58.6	63.4	37.9	62.3	69.7
TOC (%)			6.99	1.04	6.05	4.00	4.57	10.10	11.90	2.29	5.18	11.00	18.20	9.33	8.12	6.05
Metals (mg/kg dw)																
Arsenic	57	93	210	22	195	280	10	544	430	38	10	12	11	20	10	30
Copper	390	390	232	26	391	205	19	2,730	1,890	419	302	557	58	1,930	264	388
Lead	450	530	20	6	66	26	5	1,040	995	129	62	400	34	351	174	165
Mercury	0.41	0.59	0.13	0.05	0.19	0.10	0.08	0.20	0.17	0.11	0.04	0.74	0.05	0.38	0.38	0.08
Zinc	410	960	341	55	454	347	40	938	733	128	315 J	4,150 J	193	5,240	1,260	1,190
Total petroleum hydrocarbons (mg/kg dw)																
TPH-diesel	2,000[b]	2,000[b]	61 U	55 U	69 U	59 U	55 U	510	560	160	1,800	8,800	1,000	14,000	860	7,600
TPH-oil	2,000[b]	2,000[b]	250	110 U	550	120	110 U	3,700	2,900	610	7,900	38,000	14,000	10,000	4,300	24,000
LPAH (ug/kg dw)																
Acenaphthene	500	500	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	390 J	400	57 U	57 UJ	280
Acenaphthylene	1,300	1,300	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	220	560 U	290 U	57 U	57 UJ	130 U
Anthracene	960	960	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	130 J	870	720	57 U	140 J	470
Fluorene	540	540	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	200	960	530	1,200	34 J	150
Naphthalene	2,100	2,100	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	560	1,400	490	350 NJ	48 J	130
Phenanthrene	1,500	1,500	93 U	19	94 U	15 J	13 J	100 J	200 U	54 J	640	5,000	3,500 B	1,100	1,000 J	2,500
Total LPAH	5,200	5,200	93 U	19	94	15 J	13 J	100 J	200 U	54 J	1,750 J	8,620 J	5,640 B	2,650 NJ	1,222 J	3,530
HPAH (ug/kg dw)																
Benzo(a)anthracene	1,300	1,600	93 U	18 U	94 U	19 U	19 U	170 J	200 U	98 U	110 J	2,200	1,400	160	320 J	920
Benzo(a)pyrene	1,600	1,600	93 U	18 U	94 U	14 J	19 U	250	200	78 J	100 J	1,800	1,500	140	120 J	680
Total benzofluoranthenes	3,200	3,600	93 U	18 U	75 J	28	19 U	300	230	78 J	150 JQ	1,700 J	1,200	180	130 J	440
Benzo(g,h,i)perylene	670	720	93 U	10 J	94	39	19 U	670	510	170	230	4,400	2,700	390	370 J	1,400
Chrysene	1,400	2,800	93 U	9 J	66 J	23	19 U	570	420	88 J	270	3,500	2,400	420	470 J	1,300
Dibenz(a,h)anthracene	230	230	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	340 J	380 J	37 J	57 UJ	140
Fluoranthene	1,700	2,500	93 U	18 U	56 J	25	10 J	290	210	93 J	360	7,000	3,400	470	1,600 J	3,100
Indeno(1,2,3-c,d)pyrene	600	690	93 U	18 U	94 U	19 U	19 U	150 J	200 U	49 J	190 U	1,400 J	860 J	120	74 J	360
Pyrene	2,600	3,300	93 U	10 J	61 J	25	9 J	460	320	110	470	5,800	3,500	820	1,400 J	2,800
Total HPAH	12,000	17,000	93 U	29 J	352 J	154 J	19 J	2,860 J	1,890	666 J	1,690 J	28,140 J	17,340 J	2,737 J	4,484 J	11,140
Phthalates (ug/kg dw)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	93 U	31 B	290 B	120 B	23 B	2,300 B	1,700 B	98 B	8,700	41,000	10,000	14,000 B	11,000 J	59,000 B
Butylbenzylphthalate	63	900	93 U	18 U	94 U	12 J	19 U	450	4,900	98 U	520 J	6,400 J	330 J	660 J	800 J	130 U
Diethylphthalate	200	1,200	93 U	45 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
Dimethylphthalate	71	160	93 U	18 U	94 U	19 U	19 U	180 J	130 J	98 U	840	560 U	290 U	57 U	160 J	130 U
Di-n-butylphthalate	1,400	1,400	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	150 J	32,000	1,500	57 U	57 UJ	130 U
Di-n-octylphthalate	6,200	NA	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	2,000	320	1,200	57 UJ	4,500
PCBs (ug/kg dw)																
Aroclor 1016			19 U	20 U	20 U	19 U	18 U	20 U	20 U	19 U	20 U	82 U	38 U	20 U	19 U	19 U
Aroclor 1221			19 U	20 U	20 U	19 U	18 U	20 U	20 U	19 U	20 U	82 U	38 U	20 U	19 U	19 U
Aroclor 1232			19 U	20 U	20 U	19 U	18 U	20 U	20 U	19 U	20 U	82 U	38 U	20 U	19 U	19 U
Aroclor 1242			19 U	20 U	20 U	19 U	18 U	20 U	20 U	19 U	20 U	1,800	38 U	20 U	19 U	19 U
Aroclor 1248			19 U	20 U	69 Y	19 U	18 U	75 Y	49 Y	19 U	20 U	82 U	38 U	330	100	47 Y
Aroclor 1254			74	22	220	50	21	210	120	80	20 U	580	38 U	550	150	140
Aroclor 1260			27	20 U	41	19 U	18 U	70	55	68	54 J	290 Y	38 U	140	110	40
Total PCBs	130	1,000	101	22	261	50	21	280	175	148	54 J	2,380	38 U	1,020	360	180
Other organic compounds (ug/kg dw)																
1,2,4-Trichlorobenzene			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
1,2-Dichlorobenzene			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
1,3-Dichlorobenzene			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
1,4-Dichlorobenzene			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
1-Methylnaphthalene			93 U	17 J	94 U	19 U	19 U	190 U	200 U	98 U	140 J	1,900	270 J	1,400	37 J	180
2,2'-Oxybis(1-chloropropane)			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	RCB273-3	RCB273-12	RCB274-0	RCB274-3	RCB274-12	RCB275-0	RCB275-3	RCB275-12	CB108	CB206	CB210	CB211	CB212	CB213
Outfall			7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	2nd Ave S SD	Private SD	Norfolk CSO/SD/P S17 EOF	S Myrtle St SD	S Myrtle St SD	Norfolk CSO/SD/P S17 EOF
Sample type			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	RCB	CB	CB	CB	CB	CB
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			SX83	SX83	SX83	SX83	SX83	SX83	SX83	SX83	SR72	SR72	SS85	SU75, SW05	SU75, SW05	SV01
Date			05/20/11	05/20/11	05/20/11	05/20/11	05/20/11	05/20/11	05/20/11	05/20/11	04/13/11	04/13/11	04/20/11	04/29/11	04/29/11	05/02/11
2,4,5-Trichlorophenol			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 UJ	280 UJ	630 U
2,4,6-Trichlorophenol			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 UJ	280 UJ	630 U
2,4-Dichlorophenol			460 U	180 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 UJ	280 UJ	630 U
2,4-Dimethylphenol[a]	29	29	93 U	36 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 UJ	57 UJ	130 U
2,4-Dinitrophenol			990 U	770 U	1,000 U	210 U	200 U	2,000 U	2,100 U	1,000 U	2,000 UJ	6,000 UJ	3,100 U	610 UJ	600 UJ	1,400 U
2,4-Dinitrotoluene			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 U	280 UJ	630 U
2,6-Dinitrotoluene			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 U	280 UJ	630 U
2-Chloronaphthalene			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
2-Chlorophenol			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 UJ	57 UJ	130 U
2-Methylnaphthalene			93 U	**19**	94 U	19 U	19 U	190 U	200 U	98 U	**170** J	**3,300**	**420**	**2,000**	**65** J	**260**
2-Methylphenol[a]	63	63	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 UJ	57 UJ	130 U
2-Nitroaniline			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 U	280 UJ	630 U
2-Nitrophenol			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 UJ	280 UJ	630 U
3,3'-Dichlorobenzidine			460 U	140 UJ	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 U	280 UJ	630 U
3-Nitroaniline			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 U	280 UJ	630 U
4,6-Dinitro-2-methylphenol			930 U	180 U	940 U	190 U	190 U	1,900 U	2,000 U	980 U	1,900 U	5,600 U	2,900 U	570 UJ	570 UJ	1,300 U
4-Bromophenyl-phenylether			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
4-Chloro-3-methylphenol			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 U	280 UJ	630 U
4-Chloroaniline			460 U	240 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 U	280 UJ	630 U
4-Chlorophenyl-phenylether			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
4-Methylphenol[a]	670	670	93 U	36 U	94 U	19 U	19 U	190 U	200 U	98 U	**1,300**	**340** J	**260** J	**1,400** J	**6,500** J	**88** J
4-Nitroaniline			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 UJ	290 U	280 UJ	630 U
4-Nitrophenol			460 U	91 U	470 U	97 U	93 U	950 U	990 U	490 U	950 U	2,800 U	1,400 U	290 UJ	280 UJ	630 U
Benzoic acid[a]	650	650	930 U	360 U	**440** J	**150** J	190 U	**340** J	**690** J	980 U	1,900 U	5,600 U	2,900 U	**1,400** J	**130** J	1,300 U
Benzyl alcohol[a]	57	73	**320**	18 U	**2,000**	**250**	19 U	**110** J	**280**	98 U	**230**	**390** J	290 U	57 UJ	57 UJ	130 U
bis(2-Chloroethoxy) methane			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
Bis-(2-chloroethyl) ether			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
Carbazole			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	**620**	**490**	57 U	**68** J	130 U
Dibenzofuran	540	540	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	**420** J	**240** J	57 U	57 UJ	**150**
Hexachlorobenzene	22	70	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
Hexachlorobutadiene	11	120	93 U	91 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
Hexachlorocyclopentadiene			460 UJ	360 UJ	470 UJ	97 UJ	93 UJ	950 UJ	990 UJ	490 UJ	950 U	2,800 U	1,400 U	290 U	280 UJ	630 U
Hexachloroethane			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
Isophorone			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	**1,100**	290 U	57 U	57 UJ	130 U
Nitrobenzene			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
N-Nitroso-di-n-propylamine			93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	190 U	560 U	290 U	57 U	57 UJ	130 U
N-Nitrosodiphenylamine	28	40	93 U	18 U	94 U	19 U	19 U	190 U	200 U	98 U	**130** J	**990**	290 U	57 U	57 UJ	130 U
Pentachlorophenol[a]	360	690	460 UJ	180 UJ	470 UJ	97 UJ	93 UJ	950 UJ	990 UJ	490 UJ	950 UJ	2,800 UJ	1,400 UJ	290 UJ	280 UJ	630 U
Phenol[a]	420	1,200	93 U	18 U	**75** J	**27**	19 U	**100** J	**150** J	98 U	**690**	**9,300**	290 U	**340** J	**420** J	**240** NJ

a. Sediment management standards based on dry weight concentration.
b. Sediment quality standard/lowest apparent effects threshold
c. Cleanup screening level/second lowest apparent effects threshold
d. MTCA Method A soil cleanup level
Bold = Compound detected in sample.

J Value is an estimate
U Target analyte not detected at the reported concentration
R Analytical result is rejected and cannot be used.
Y Analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. Y flag is equivalent to U flag with a raised reporting limit.

RCB = Right-of-way catch basin
CB = Onsite catch basin
CSS = Combined sewer system
Inline = Inline grab sample
Dirt = Street dirt sample

Exceeds SQS/LAET/MTCA Method A
Exceeds CSL/2LAET

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	CB165	RCB276	RCB277	RCB278	RCB279	RCB280	MH210	T2B	MH245	ST1	MH246	RCB281	MH116	MH101
Outfall			Port SD-T115	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Norfolk CSO/SD/P S17 EOF	Norfolk CSO/SD/P S17 EOF	WSDOT S Ryan St SD	S Brighton St CSO/SD
Sample type			Inline	RCB	RCB	RCB	RCB	RCB	Inline	Inline	Inline	Inline	Inline	RCB	Inline	Inline
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			TM02, TN38	TR70, TT18	TR70	TR70	TR70, TT18	TR70	TS74	TS74	TT36	TT36	TT60	TT60	TT60	TV56
Date			09/12/11	10/12/11	10/12/11	10/12/11	10/12/11	10/12/11	10/19/11	10/19/11	10/24/11	10/24/11	10/25/11	10/25/11	11/02/11	11/04/11
Total solids (%)			24.9	71.7	33.7	49.3	72.2	64.9	80.8	46.4	86.1	76.4	75.0	68.5	83.7	85.4
TOC (%)			9.85	9.11	9.95	11.30	5.56	4.90	6.57	6.68	1.56	2.88	0.78	8.21	1.17	1.23
Metals (mg/kg dw)																
Arsenic	57	93	12	6	20	20	15	9	6 U	10	6 U	6 U	7	7 U	10 U	6
Copper	390	390	501	532	320	372	119	110	46	143	39	51	24	175 J	44 J	36 J
Lead	450	530	255	230	387	538	86	40	21	83	49	44	10	32 J	330 J	15 J
Mercury	0.41	0.59	0.13	0.58	0.41	1.47	0.32	0.13	0.03	0.17	0.02 U	0.06	0.03	0.03	0.03 U	0.02 U
Zinc	410	960	5,000	858	1,660	3,670	539	312	139	402	145 J	184	105	355	201	143 J
Total petroleum hydrocarbons (mg/kg dw)																
TPH-diesel	2,000[b]	2,000[b]	3,500	1,500	2,500	2,000 U	2,500	270	120	650	59 U	110	64 U	88	44	35
TPH-oil	2,000[b]	2,000[b]	13,000	5,300	11,000	6,700	5,400	1,700	710	2,900	250	660	130 U	690	240	110
LPAH (ug/kg dw)																
Acenaphthene	500	500	320 U	190 U	340 U	280 U	220 U	97 U	10 J	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Acenaphthylene	1,300	1,300	320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Anthracene	960	960	440	190 U	340 U	320	220 U	97 U	10 J	230 U	59 U	19 U	55 U	41 J	58 U	18 U
Fluorene	540	540	520	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	33 J	58 U	58 U	18 U
Naphthalene	2,100	2,100	320	190 U	340 U	280 U	220 U	97 U	22	230 U	59 U	19 U	55 U	41 J	58 U	18 U
Phenanthrene	1,500	1,500	2,200	320	1,500	1,500	1,100	97 U	67	140 J	30 J	19 U	880	200	58 U	11 J
Total LPAH	5,200	5,200	3,480	320	1,500	1,820	1,100	97 U	109	140 J	30 J	19 U	913	282 J	58 U	11 J
HPAH (ug/kg dw)																
Benzo(a)anthracene	1,300	1,600	580	190 U	1,000	2,300	830	97 U	44	140 J	59 U	19 U	310	180	58 U	18 U
Benzo(a)pyrene	1,600	1,600	420	190 U	890	2,400	570	97 U	62	170 J	30 J	9 J	290	260	58 U	13 J
Total benzofluoranthenes	3,200	3,600	1,700	450	2,200	4,600	1,300	220	120	460	59	20	660	480	58	26
Benzo(g,h,i)perylene	670	720	730	250	970	1,900	410	130	72	340	59 U	19 U	170	340	58 U	21
Chrysene	1,400	2,800	1,700	400	1,800	2,700	1,000	200	100	350	62	10 J	690	290	58 U	22
Dibenz(a,h)anthracene	230	230	320 U	190 U	340 U	560	220 U	97 U	20	230 U	59 U	19 U	61	61	58 U	18 U
Fluoranthene	1,700	2,500	2,900	440	2,800	4,200	2,800	160	140	400	56 J	10 J	1,800	420	35 J	20
Indeno(1,2,3-c,d)pyrene	600	690	370	190 U	570	1,500	270	97 U	42	160 J	59 U	19 U	150	190	58 U	11 J
Pyrene	2,600	3,300	2,600	480	2,200	3,600	2,100	260	150	680	65	16 J	1,400	450	40 J	23
Total HPAH	12,000	17,000	11,000	2,020	12,430	23,760	9,280	970	750	2,700 J	272	65 J	5,531	2,671	133 J	136 J
Phthalates (ug/kg dw)																
Bis(2-ethylhexyl)phthalate	1,300	1,900	25,000	14,000 B	20,000 B	37,000 B	4,000 B	1,700 B	1,400 B	6,800 B	500	57	870	1,900	350 B	170 B
Butylbenzylphthalate	63	900	7,200 J	700	2,300	7,500	220 U	130	92	180 J	59 U	19 U	71,000	310	58 U	48
Diethylphthalate	200	1,200	810 U	480 U	840 U	700 U	540 U	240 U	48 U	570 U	150 U	46 U	140 U	140 U	140 U	46 U
Dimethylphthalate	71	160	320 U	190 U	350	510	220 U	620	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Di-n-butylphthalate	1,400	1,400	260 J	210	1,100	2,300	220 U	97 U	19 U	230 U	59 U	19 U	130	67	58 U	18 U
Di-n-octylphthalate	6,200	NA	8,500	470 U	1,900 U	7,700	500 U	110 U	140	420	59 U	47	3,800	170	35 J	18 U
PCBs (ug/kg dw)																
Aroclor 1016			20 U	92 U	98 U	980 U	94 U	96 U	18 UJ	19 U	20 U	19 U	19 U	19 U	18 U	18 U
Aroclor 1221			20 U	92 U	98 U	980 U	94 U	96 U	18 U	19 U	20 U	19 U	19 U	19 U	18 U	18 U
Aroclor 1232			20 U	92 U	98 U	980 U	94 U	96 U	23 Y	19 U	20 U	19 U	19 U	19 U	18 U	18 U
Aroclor 1242			20 U	360	200	4,300	94 U	96 U	18 UJ	19 U	20 U	19 U	19 U	19 U	18 U	18 U
Aroclor 1248			160	92 U	98 U	980 U	94 U	96 U	18 UJ	130	30	21	19 U	19 U	18 U	18 U
Aroclor 1254			92	160 Y	180	1,000	110	100	18 UJ	140	20 U	22	19 U	19 U	18 U	18 U
Aroclor 1260			61	100 J	210 J	980 U	260 J	380 J	18 UJ	150	20 U	19 U	19 U	19 U	18 U	18 U
Total PCBs	130	1,000	313	460	590	5,300	370	480	23 Y	420	30	43	19 U	19 U	18 U	18 U
Other organic compounds (ug/kg dw)																
1,2,4-Trichlorobenzene			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
1,2-Dichlorobenzene			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
1,3-Dichlorobenzene			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
1,4-Dichlorobenzene			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
1-Methylnaphthalene			490	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
2,2'-Oxybis(1-chloropropane)			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	CB165	RCB276	RCB277	RCB278	RCB279	RCB280	MH210	T2B	MH245	ST1	MH246	RCB281	MH116	MH101
Outfall			Port SD-T115	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	7th Ave S SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Diagonal Ave S CSO/SD	Norfolk CSO/SD/P S17 EOF	Norfolk CSO/SD/P S17 EOF	WSDOT S Ryan St SD	S Brighton St CSO/SD
Sample type			Inline	RCB	RCB	RCB	RCB	RCB	Inline	Inline	Inline	Inline	Inline	RCB	Inline	Inline
Conveyance type[c]			SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD	SD
Lab reference			TM02, TN38	TR70, TT18	TR70	TR70	TR70, TT18	TR70	TS74	TS74	TT36	TT36	TT60	TT60	TT60	TV56
Date			09/12/11	10/12/11	10/12/11	10/12/11	10/12/11	10/12/11	10/19/11	10/19/11	10/24/11	10/24/11	10/25/11	10/25/11	11/02/11	11/04/11
2,4,5-Trichlorophenol			1,600 U	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 U	300 U	93 U	280 U	290 U	290 U	92 U
2,4,6-Trichlorophenol			1,600 U	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 U	300 U	93 U	280 U	290 U	290 U	92 U
2,4-Dichlorophenol			3,200 U	1,900 U	3,400 U	2,800 U	2,200 U	970 U	190 U	2,300 U	590 U	190 U	550 U	580 U	580 U	180 U
2,4-Dimethylphenol[a]	29	29	650 U	380 U	670 U	560 U	430 U	190 U	38 U	460 U	120 U	37 U	110 U	120 U	120 U	37 U
2,4-Dinitrophenol			14,000 R	8,200 UJ	14,000 UJ	12,000 UJ	9,100 UJ	4,100 UJ	810 U	9,700 U	2,500 U	790 U	2,400 U	2,500 U	2,400 U	780 U
2,4-Dinitrotoluene			1,600 UJ	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 U	300 U	93 U	280 U	290 U	290 U	92 U
2,6-Dinitrotoluene			1,600 UJ	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 U	300 U	93 U	280 U	290 U	290 U	92 U
2-Chloronaphthalene			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
2-Chlorophenol			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
2-Methylnaphthalene			**700**	**220**	**370**	280 U	220 U	97 U	**14** J	230 U	59 U	19 U	55 U	58 U	58 U	18 U
2-Methylphenol[a]	63	63	320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
2-Nitroaniline			1,600 U	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 U	300 U	93 U	280 U	290 U	290 U	92 U
2-Nitrophenol			1,600 R	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 U	300 U	93 U	280 U	290 U	290 U	92 U
3,3'-Dichlorobenzidine			2,400 R	1,400 U	2,500 U	2,100 U	1,600 U	720 U	140 U	1,700 U	440 U	140 U	420 U	440 U	430 U	140 U
3-Nitroaniline			1,600 UJ	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 U	300 U	93 U	280 U	290 U	290 U	92 U
4,6-Dinitro-2-methylphenol			3,200 U	1,900 U	3,400 U	2,800 U	2,200 U	970 U	190 U	2,300 U	590 U	190 U	550 U	580 U	580 U	180 U
4-Bromophenyl-phenylether			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
4-Chloro-3-methylphenol			1,600 R	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 U	300 U	93 U	280 U	290 U	290 U	92 U
4-Chloroaniline			4,400 U	2,600 U	4,500 U	3,800 U	2,900 U	1,300 U	260 U	3,100 U	800 U	250 U	750 U	790 U	780 U	250 U
4-Chlorophenyl-phenylether			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
4-Methylphenol[a]	670	670	**320** J	**3,200**	**1,000**	**11,000**	430 U	190 U	38 U	460 U	120 U	37 U	110 U	120 U	120 U	**16** J
4-Nitroaniline			1,600 U	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 UJ	300 UJ	93 UJ	280 UJ	290 UJ	290 U	92 U
4-Nitrophenol			1,600 U	960 U	1,700 U	1,400 U	1,100 U	480 U	96 UJ	1,100 U	300 UJ	93 UJ	280 UJ	290 UJ	290 U	92 U
Benzoic acid[a]	650	650	2,300 R	3,800 U	6,700 U	5,600 U	4,300 U	1,900 U	**100** J	4,600 U	1,200 U	370 U	1,100 U	**380** J	1,200 U	**150** J
Benzyl alcohol[a]	57	73	320 U	190 U	340 U	280 U	220 U	**220**	22 Y	230 U	59 U	19 U	55 U	**740**	58 U	18 U
bis(2-Chloroethoxy) methane			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Bis-(2-chloroethyl) ether			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Carbazole			**260** J	190 U	**390**	**460**	220 U	97 U	**14** J	230 U	59 U	19 U	**170**	**38** J	58 UJ	18 UJ
Dibenzofuran	540	540	**200** J	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Hexachlorobenzene	22	70	320 U	190 U	340 U	280 U	220 U	97 U	19 UJ	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Hexachlorobutadiene	11	120	1,600 U	960 U	1,700 U	1,400 U	1,100 U	480 U	96 U	1,100 U	300 U	93 U	280 U	290 U	290 U	92 U
Hexachlorocyclopentadiene			6,500 R	3,800 U	6,700 U	5,600 U	4,300 U	1,900 U	380 UJ	4,600 U	1,200 UJ	370 UJ	1,100 UJ	1,200 UJ	1,200 U	370 U
Hexachloroethane			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Isophorone			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Nitrobenzene			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
N-Nitroso-di-n-propylamine			320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
N-Nitrosodiphenylamine	28	40	320 U	190 U	340 U	280 U	220 U	97 U	19 U	230 U	59 U	19 U	55 U	58 U	58 U	18 U
Pentachlorophenol[a]	360	690	3,200 U	1,900 U	3,400 U	2,800 U	2,200 U	970 U	190 UJ	2,300 U	590 UJ	190 UJ	550 UJ	580 UJ	580 U	180 U
Phenol[a]	420	1,200	**1,200**	190 U	**420**	**1,800**	220 U	**100**	**14** J	230 U	59 U	19 U	55 U	**50** J	58 U	**11** J

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	MH14	
Outfall			Diagonal Ave S CSO/SD	
Sample type			Inline	
Conveyance type[c]			SD	
Lab reference			TW91	
Date			11/14/11	
Total solids (%)			81.2	
TOC (%)			1.59	
Metals (mg/kg dw)				
Arsenic	57	93	6	U
Copper	390	390	**36**	J
Lead	450	530	**20**	
Mercury	0.41	0.59	**0.04**	
Zinc	410	960	**161**	J
Total petroleum hydrocarbons (mg/kg dw)				
TPH-diesel	2,000[b]	2,000[b]	**80**	
TPH-oil	2,000[b]	2,000[b]	**320**	
LPAH (ug/kg dw)				
Acenaphthene	500	500	20	U
Acenaphthylene	1,300	1,300	20	U
Anthracene	960	960	20	U
Fluorene	540	540	20	U
Naphthalene	2,100	2,100	**22**	
Phenanthrene	1,500	1,500	**54**	
Total LPAH	5,200	5,200	**76**	
HPAH (ug/kg dw)				
Benzo(a)anthracene	1,300	1,600	**25**	
Benzo(a)pyrene	1,600	1,600	**36**	
Total benzofluoranthenes	3,200	3,600	**68**	
Benzo(g,h,i)perylene	670	720	**26**	
Chrysene	1,400	2,800	56	
Dibenz(a,h)anthracene	230	230	20	U
Fluoranthene	1,700	2,500	**89**	
Indeno(1,2,3-c,d)pyrene	600	690	**15**	J
Pyrene	2,600	3,300	**88**	J
Total HPAH	12,000	17,000	**403**	J
Phthalates (ug/kg dw)				
Bis(2-ethylhexyl)phthalate	1,300	1,900	**1,000**	B
Butylbenzylphthalate	63	900	**40**	
Diethylphthalate	200	1,200	49	U
Dimethylphthalate	71	160	**32**	
Di-n-butylphthalate	1,400	1,400	20	U
Di-n-octylphthalate	6,200	NA	**610**	
PCBs (ug/kg dw)				
Aroclor 1016			20	U
Aroclor 1221			20	U
Aroclor 1232			20	U
Aroclor 1242			20	U
Aroclor 1248			20	U
Aroclor 1254			20	UJ
Aroclor 1260			20	U
Total PCBs	130	1,000	20	UJ
Other organic compounds (ug/kg dw)				
1,2,4-Trichlorobenzene			20	U
1,2-Dichlorobenzene			20	U
1,3-Dichlorobenzene			20	U
1,4-Dichlorobenzene			20	U
1-Methylnaphthalene			20	U
2,2'-Oxybis(1-chloropropane)			20	U

Table 2: Ecology interagency agreement (2010-2011): SPU source tracing sample results (dry weight).

Sample ID	SQS/ LAET	CSL/ 2LAET	MH14	
Outfall			Diagonal Ave S CSO/SD	
Sample type			Inline	
Conveyance type[c]			SD	
Lab reference			TW91	
Date			11/14/11	
2,4,5-Trichlorophenol			97	U
2,4,6-Trichlorophenol			97	U
2,4-Dichlorophenol			200	U
2,4-Dimethylphenol[a]	29	29	39	U
2,4-Dinitrophenol			830	UJ
2,4-Dinitrotoluene			97	U
2,6-Dinitrotoluene			97	U
2-Chloronaphthalene			20	U
2-Chlorophenol			20	U
2-Methylnaphthalene			20	U
2-Methylphenol[a]	63	63	20	U
2-Nitroaniline			97	U
2-Nitrophenol			97	U
3,3'-Dichlorobenzidine			150	U
3-Nitroaniline			97	U
4,6-Dinitro-2-methylphenol			200	U
4-Bromophenyl-phenylether			20	U
4-Chloro-3-methylphenol			97	U
4-Chloroaniline			260	U
4-Chlorophenyl-phenylether			20	U
4-Methylphenol[a]	670	670	39	U
4-Nitroaniline			97	U
4-Nitrophenol			97	U
Benzoic acid[a]	650	650	390	U
Benzyl alcohol[a]	57	73	**2,600**	
bis(2-Chloroethoxy) methane			20	U
Bis-(2-chloroethyl) ether			20	U
Carbazole			20	U
Dibenzofuran	540	540	20	U
Hexachlorobenzene	22	70	20	U
Hexachlorobutadiene	11	120	97	U
Hexachlorocyclopentadiene			390	U
Hexachloroethane			20	U
Isophorone			20	U
Nitrobenzene			20	U
N-Nitroso-di-n-propylamine			20	U
N-Nitrosodiphenylamine	28	40	20	U
Pentachlorophenol[a]	360	690	200	U
Phenol[a]	420	1,200	**21**	

Table 3: Ecology interagency agreement (2010-2011): dioxins/furans (ng/kg).

	ST1-043010G	ST3-043010	ST5-043010	EWWST5-050310	1ST-ST1-110410-G	HC-ST1-110410-G	HC-ST1-110410	1st-ST3-111110-G	ID-ST2-111810-G	96-ST2-120110-G	KCIA2-ST1-120310 G	KCIA1-ST1-120310 G	RCB232-032411	RCB233-032411	RCB234-032411
	E1100372-001	E1100372-002	E1100372-003	E1100454-001	E1100374-001	E1100374-002	E1100374-003	E1100373-001	E1100371-001	E1100455-001	E1100370-001	E1100370-002	E1100318-001	E1100318-002	E1100318-003
Analyte Name	04/30/10	04/30/10	04/30/10	05/06/10	11/04/10	11/04/10	11/04/10	11/11/10	11/18/10	12/01/10	12/03/10	12/03/10	03/24/11	03/24/11	03/24/11
2,3,7,8-TCDD	4.93	0.0735 U	0.317 U	1.16 J	0.47 U	0.0772 U	0.0608 U	0.146 U	0.431 U	0.319 U	0.182 U	0.207 U	0.181 U	0.148 U	0.113 U
1,2,3,7,8-PeCDD	12.9	0.428 J	2.02 J	8.45	1.57 J	0.171 J	0.215 J	0.119 U	2.79 J	0.577 J	0.157 U	0.448 J	0.562 J	2.99 J	0.775 U
1,2,3,4,7,8-HxCDD	19.7	0.725 J	4.66	14.2	3.18 J	0.223 J	0.343 J	0.427 U	4.96	0.926 J	0.169 U	0.333 J	0.92 J	5.29 J	1.1 J
1,2,3,6,7,8-HxCDD	76.6	2.69 J	16.9	39.1	15	0.527 J	0.729 J	0.723 J	20.5	2.24 J	0.798 U	1.36 J	2.79 J	15	3.52 J
1,2,3,7,8,9-HxCDD	53.2	1.86 J	10.5	30.1	9.5	0.55 J	0.651 J	0.86 J	13.7	1.46 J	0.493 J	1.21 J	2.16 J	10.8	3.42 J
1,2,3,4,6,7,8-HpCDD	2030	58.2	284	922	409	20.4	11.6	8.54	353	52.8	4.67 J	17.9	69.2	273	88.6
OCDD	24,700 J	551	1,850	6,420 J	3,340	301	80	48	2,650	391	22.5	120	952	2,350	671
2,3,7,8-TCDF	34.3	0.627 J	0.683 U	2.38	1.25 J	0.0562 U	0.11 U	0.149 U	2.96	0.73 U	0.241 U	0.252 UJ	0.386 U	1.65 J	0.8 J
1,2,3,7,8-PeCDF	13.1	0.266 U	0.573 U	6.44	0.78 U	0.0858 U	0.0511 U	0.188 U	1.37 U	0.769 U	0.208 U	0.108 U	0.117 U	0.855 U	0.157 U
2,3,4,7,8-PeCDF	37.7	0.279 U	0.93 J	3.87 J	1.08 J	0.117 U	0.0975 U	0.181 U	2.1 J	0.822 U	0.204 U	0.133 U	0.365 J	1.56 J	0.158 U
1,2,3,4,7,8-HxCDF	45.5	0.839 J	2.86 J	15.2	7.57	0.204 U	0.266 J	0.257 U	6.42	1.72 U	0.874 J	0.463 J	0.661 J	3.45 J	1.19 J
1,2,3,6,7,8-HxCDF	14.4	0.42 J	2 J	11.7	2.16 J	0.0789 U	0.137 J	0.232 U	3.29 J	0.953 U	0.243 U	0.276 U	0.463 J	2.83 J	0.723 J
1,2,3,7,8,9-HxCDF	1.71 U	0.103 U	0.178 U	2.91 U	0.213 U	0.0908 U	0.0988 U	0.313 U	1.06 U	1.46 U	0.292 U	0.184 U	0.229 U	0.703 U	0.176 U
2,3,4,6,7,8-HxCDF	22.6	0.393 U	2.98 J	11.5	3.32 J	0.13 U	0.175 U	0.274 U	3.38 J	1.14 U	0.331 U	0.334 J	0.497 U	4.7 J	0.681 J
1,2,3,4,6,7,8-HpCDF	281	11.3	41.5	220	63.1	1.8 J	2.31 J	1.06 U	61.7	11.7	1.29 J	2.54	11.1	53.3	10.8
1,2,3,4,7,8,9-HpCDF	23.2	0.62 J	2.77 J	12	14	0.163 U	0.138 U	0.471 U	3.95 U	1.71 U	0.199 U	0.166 U	0.301 U	3.65 J	0.315 U
OCDF	885	63.7	134	626 J	183	3.79 J	3.72 J	2.79 J	177	39.2	1.33 J	4.25 J	29.9	105	23.5
Total Tetra-Dioxins	24.9	0.559 J	0.767 J	6.23	4.13	0.287 J	0.535 J	0.146 U	0.927 J	0.319 U	0.182 U	0.531 J	0.181 U	0.148 U	0.113 U
Total Penta-Dioxins	52.3	1.89 J	6.66	37.6	8.93	0.755 J	0.586 J	0.428 J	12.9	2.07 J	1.36 J	2 J	2.03 J	14	2.57 J
Total Hexa-Dioxins	471	16.2	84.3	238	87.7	5.16	5.48	3.22	107	9.65 J	4.00 J	10	18.3	88.7	38.9
Total Hepta-Dioxins	3,950	106	483	1,670	739	42.1	22	15.7	638	103	9.34 J	37.7	134	502	267
Total Tetra-Furans	514	4.71	15.3	53.5	18.5	0.771 J	1.61	0.149 U	9.5	0.73 U	0.241 U	2.26	2.69	32.1	3.78
Total Penta-Furans	413	7.51	41.6	211	20	2.09 J	2.07 J	0.445 J	40.6	9.01	6.55 J	9.15	11.2	87	12.4
Total Hexa-Furans	484	14	68	393	71	2.54 J	2.65	0.6 U	87.9	16	6.20 J	6.81	13	90.5	17.7
Total Hepta-Furans	1,010	46	139	597	235	5.5	5.84	4.21	187	28.8	2.89 J	6.82	35	153	30.8
Total TEQ (ng/kg TEQ) [a]	87.2 J	2.03 J	10.2 J	37 J	12 J	0.614 J	0.592 J	0.184 J	13.9 J	1.81 J	0.203 J	1.06 J	2.47 J	11.9 J	2.35 J

Table 3: Ecology interagency agreement (2010-2011): dioxins/furans (ng/kg).

Analyte Name	RCB235-032411 E1100318-004 03/24/11	RCB236-032411 E1100318-005 03/24/11	RCB237-040111 E1100342-001 04/01/11	RCB238-040111 E1100342-002 04/01/11	RCB239-040111 E1100342-003 04/01/11	RCB240-040111 E1100342-004 04/01/11	RCB241-040111 E1100342-005 04/01/11	RCB242-040111 E1100342-006 04/01/11	RCB243-040811 E1100369-001 04/08/11	RCB244-040811 E1100369-002 04/08/11	RCB245-040811 E1100369-003 04/08/11	RCB246-040811 E1100369-004 04/08/11	RCB247-040811 E1100369-005 04/08/11	RCB248-040811 E1100369-006 04/08/11	RCB267-051311 E1100546-001 05/13/11
2,3,7,8-TCDD	0.085 U	0.0863 U	1.26 J	0.0884 U	0.135 U	0.0982 U	1.34 U	1.97	0.0617 U	0.205 U	0.241 J	1.21 J	0.0956 U	0.177 U	0.144 U
1,2,3,7,8-PeCDD	0.553 U	1.25 J	8.32	0.687 U	3.04 J	1.67 J	10.1	16.5	1.37 J	11.8	2.77 J	5.38	1.66 U	0.673 J	0.511 U
1,2,3,4,7,8-HxCDD	1.04 J	2.5 J	21.4	1.12 U	5.34 J	2.51 J	16.7	33.8	2.07 U	28.5	4.5	9.49	3.48 J	0.942 J	0.818 J
1,2,3,6,7,8-HxCDD	2.61 J	6.81	55.4	2.72 J	10.5	11.3	46.7	81.1	6.79	64.3	11.2	33.8	12.1	3.26 J	2.08 J
1,2,3,7,8,9-HxCDD	2.55 J	5.77	45.4	2.72 J	11.6	8.34	41.5	81.2	6.63	82.5	21.4	28.1	8.6	2.94 J	2.31 J
1,2,3,4,6,7,8-HpCDD	46.8	162	1380	50.1	216	136	786	1920	110	1300	146	660	216	48.1	45.9
OCDD	314	1,190	10,200	351	2,360	606	5,750	15,500 J	618	8,600	490	4,230	1,640	315	334 J
2,3,7,8-TCDF	0.544 J	0.341 U	2.34 J	0.745 U	1.25 J	1.4 J	2.32	5.51	0.114 U	1.8 J	0.113 U	1.41 J	0.709 J	0.601 J	0.36 U
1,2,3,7,8-PeCDF	0.107 U	0.105 U	1.3 U	0.161 U	0.606 U	1.06 J	2.37 J	4	0.492 J	1.11 U	0.516 J	1.05 J	0.362 U	0.122 U	0.404 J
2,3,4,7,8-PeCDF	0.252 U	0.106 U	2.07 J	0.56 U	0.832 U	1.05 J	3.51 J	5.46	0.94 J	1.91 J	0.709 J	1.57 J	0.767 J	0.314 U	0.417 U
1,2,3,4,7,8-HxCDF	1.37 J	2.86 J	15.4	1.14 J	3.15 J	3.78 J	11.2	24.7	3.33 J	8.63	2.85 J	5.02	2 J	0.855 J	1.07 J
1,2,3,6,7,8-HxCDF	0.476 J	1.81 J	7.71	0.813 U	2.21 J	2.65 J	11.6	17.8	5.28	9.85	2.32 J	4.4 J	1.71 U	0.679 U	0.595 U
1,2,3,7,8,9-HxCDF	0.136 U	0.195 U	0.635 U	0.14 U	0.831 U	0.233 U	0.446 U	0.434 U	0.222 U	2.46 U	0.416 U	0.288 U	0.769 U	0.309 U	0.152 U
2,3,4,6,7,8-HxCDF	0.39 U	1.59 U	7.11	0.987 J	2.79 J	2.38 J	13.7	15.6	4.74	8.59	1.98 J	4.78	2.07 J	0.975 U	0.34 J
1,2,3,4,6,7,8-HpCDF	7.76	59.8	269	10.9	40.6	27.6	214	421	91.5	259	20.2	101	32	13.2	9.31
1,2,3,4,7,8,9-HpCDF	0.248 U	3.14 J	18.4	0.559 J	2.59 J	1.58 J	8.72	24.7	2.06 J	4.12 U	0.207 U	5.86	1.97 J	0.519 U	0.594 J
OCDF	17.2	156	863	20.8	113	27.5	431	1,440	84.4	874	13.2	242	87.7	22.7	18.6 J
Total Tetra-Dioxins	0.085 U	1.07 J	1.26 J	1.83	0.135 U	0.0982 U	6.7	19.6	0.0617 U	0.205 U	0.468 J	2.72	0.0956 U	0.188 J	0.718 J
Total Penta-Dioxins	3.05 J	7.38	33.6	2.77 J	13.2	4.6 J	45.4	70.3	7.59	46.8	23.1	32.5	4.91	3.27 J	1.4 J
Total Hexa-Dioxins	19.6	46.9	321	22.3	82.7	74.4	297	651	48.6	423	135	273	70.1	20.9	18.1
Total Hepta-Dioxins	92	310	2,680	102	402	247	1,550	5,050	208	2,360	346	1,390	384	89	88
Total Tetra-Furans	2.24	0.104 U	28.3	14.1	7.14	19.4	48.6	71	14	45.6	28.1	31.9	11.7	5.03	5.15
Total Penta-Furans	6.28	13.7	106	37	36.1	47.4	238	144	73.1	122	40.5	72.2	38.9	23.5	10.4
Total Hexa-Furans	12.1	56	299	23.3	69	64.5	327	456	120	255	32	116	55	18.6	15
Total Hepta-Furans	21.4	178	991	27.3	113	71	496	1,190	156	620	30	258	88	31.9	23
Total TEQ (ng/kg TEQ) [a]	1.5 J	5.88 J	45.7 J	1.48 J	10.1 J	7.09 J	37.5 J	74.9 J	6.59 J	51.2 J	9.48 J	24.8 J	6.14 J	2.25 J	1.34 J

Table 3: Ecology interagency agreement (2010-2011): dioxins/furans (ng/kg).

Analyte Name	RCB268-051311 E1100546-002 05/13/11		RCB269-051311 E1100546-003 05/13/11		RCB270-051311 E1100546-004 05/13/11		RCB271-051311 E1100546-005 05/13/11		RCB272-051311 E1100547-001 05/13/11	
2,3,7,8-TCDD	0.0608	U	0.107	U	0.116	U	0.221	U	0.137	U
1,2,3,7,8-PeCDD	**0.324**	J	0.0909	U	1.37	U	**2.06**	J	**0.575**	J
1,2,3,4,7,8-HxCDD	**0.452**	J	0.19	U	2.03	U	**3.8**	J	**0.779**	J
1,2,3,6,7,8-HxCDD	**1.14**	J	**0.46**	J	**4.6**		**10.1**		**1.59**	J
1,2,3,7,8,9-HxCDD	**1.17**	J	**0.363**	J	**4.4**		8.53	U	**1.78**	J
1,2,3,4,6,7,8-HpCDD	**23.6**		**9.22**		**112**		**238**		**36.7**	
OCDD	**167**	J	**68**	J	**811**	J	**1,520**	J	**266**	J
2,3,7,8-TCDF	0.139	U	0.0784	U	0.386	UJ	**0.836**	J	0.203	U
1,2,3,7,8-PeCDF	0.132	U	0.058	U	**0.425**	J	0.963	U	0.0765	U
2,3,4,7,8-PeCDF	**0.139**	J	0.0628	U	**0.559**	J	**1.17**	J	0.0828	U
1,2,3,4,7,8-HxCDF	**0.451**	J	0.109	U	**2.23**	J	**4.26**	J	**0.672**	J
1,2,3,6,7,8-HxCDF	0.28	U	0.106	U	**1.1**	J	**2.69**	J	0.446	U
1,2,3,7,8,9-HxCDF	0.0717	U	0.157	U	0.331	U	0.549	U	0.223	U
2,3,4,6,7,8-HxCDF	**0.3**	J	0.12	U	1.23	U	**3.63**	J	0.17	U
1,2,3,4,6,7,8-HpCDF	**5.32**		1.73	U	**18.9**		**46.5**		**8.69**	
1,2,3,4,7,8,9-HpCDF	**0.34**	J	0.19	U	**1.69**	J	2.77	U	0.404	U
OCDF	17.1	UJ	4.15	UJ	**39.4**	J	**110**	J	**27.3**	J
Total Tetra-Dioxins	**0.141**	J	0.107	U	0.116	U	**2.91**		0.137	U
Total Penta-Dioxins	**0.867**	J	0.0909	U	**4.49**		**16.9**		**0.972**	J
Total Hexa-Dioxins	**9.12**		**2.78**		**28.9**		**73.2**		**13.6**	
Total Hepta-Dioxins	**44.5**		**18**		**208**		**449**		**71.2**	
Total Tetra-Furans	**2.12**		0.0784	U	**3.05**		**12.7**		**2.2**	
Total Penta-Furans	**4.3**		**0.907**	J	**12.3**		**36.2**		**6.66**	
Total Hexa-Furans	**7.81**		**2**	J	**26.4**		**80**		**12.7**	
Total Hepta-Furans	**15.8**		2	U	**50.9**		**126**		**25.3**	
Total TEQ (ng/kg TEQ) [a]	**1.05**	J	**0.195**	J	**2.99**	J	**8.28**	J	**1.6**	J

U = compound not detected at reported concentration.
J = estimated
a. Toxic equivalency concentrations of 2,3,7,8-tetrachlordibenzo-p-dioxin were calculated using mammalian toxic equivalency factors (TEF) from Van den Berg et al. (2006).
TEQ concentration is the sum of the detected concentrations for individual congeners.

Van den Berg, M., L.S. Birnbaum, M. Denison, M. De Vito, W. Farland, M. Feeley, H. Fiedler, H. Hakansson, A. Hanberg, L. Haws, M. Rose, S. Safe, D. Schrenk, C. Tohyama, A. Tritscher, J. Tuomisto, M. Tysklind, N. Walker, and R.E. Peterson. 2006. The 2005 World Health Organization re-evaluation of human and mammalian toxic equivalency factors to dioxins and dioxin-like compounds. Toxicol. Sci. 92(2):223-241.