Lower Duwamish Waterway Source Control Status Report July 2009 through September 2010

August 2011

Publication No. 11-09-169

Printed on recycled paper

This report is available on the Department of Ecology home page on the World Wide Web at
http://www.ecy.wa.gov/programs/tcp/sites_brochure/lower_duwamish/source_control/sc.html

For a printed copy of this report, contact:

Department of Ecology
Toxics Cleanup Program
Phone: 360-407-7170

Refer to Publication Number 11-09-169

If you need this publication in an alternate format, please call the Toxics Cleanup Program at 360-407-7170. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Lower Duwamish Waterway Source Control Status Report July 2009 through September 2010

Produced by

Dan Cargill
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

With Assistance from:
City of Seattle
King County
Port of Seattle
U.S. Environmental Protection Agency

August 2011

Waterbody No. WA-09-1010
Publication No. 11-09-169

This page intentionally left blank.

Table of Contents

Figures

Tables

Appendices

This page intentionally left blank.

List of Acronyms

2LAET	Second Lowest Apparent Effects Threshold
ACZA	ammoniacal copper zinc arsenate
AOC	Administrative Order on Consent
ASAOC	Administrative Settlement Agreement and Order on Consent
BBP	butylbenzylphthalate
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
CJM	concrete joint material
CMS	Corrective Measures Study
CNE	Conditional No Exposure
COC	chemical of concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSCSL	Confirmed or Suspected Contaminated Sites List
CSL	Cleanup Screening Level
CSO	combined sewer overflow
DCE	cis-1,2-dichloroethene
DDT	dichloro-diphenyl-trichloroethane
DMR	discharge monitoring report
DRCC	Duwamish River Cleanup Coalition
DSOA	Duwamish Sediment Other Area
DW	dry weight
EAA	Early Action Area
Ecology	Washington State Department of Ecology
EE/CA	Engineering Evaluation/Cost Analysis
EMF	Electronics Manufacturing Facility
EOF	Emergency Overflow
EPA	U.S. Environmental Protection Agency
ERD	enhanced reductive dechlorination
ERTS	Environmental Report Tracking System
FS	Feasibility Study
GSA	General Services Administration
GTSP	Georgetown Steam Plant
HPAH	high molecular weight PAH
HWTR	Hazardous Waste and Toxics Reduction
IAAI	Insurance Auto Auctions, Inc.
ISGP	Industrial Stormwater General Permit
KCIA	King County International Airport
KCIW	King County Industrial Waste
LAET	Lowest Apparent Effects Threshold

List of Acronyms (Continued)

LDW	Lower Duwamish Waterway
LDWG	Lower Duwamish Waterway Group
LPAH	low molecular weight PAH
LUST	leaking underground storage tank
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MTCA	Model Toxics Control Act
NA	not applicable or not analyzed
NBF	North Boeing Field
ND	not detected
ng/kg	nanograms per kilogram
NOAA	National Oceanic and Atmospheric Administration
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
OC	organic carbon
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PCHB	Pollution Control Hearings Board
PEL	Propulsion Engineering Laboratory
PHSKC	Public Health – Seattle and King County
PLP	potentially liable party
PPA	Prospective Purchaser Agreement
PSCAA	Puget Sound Clean Air Agency
RCRA	Resource Conservation and Recovery Act
RDL	reporting detection limit
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RM	river mile
ROD	Record of Decision
SAIC	Science Applications International Corporation
SCAP	Source Control Action Plan
SCL	Seattle City Light
SCWG	Source Control Work Group
SEPA	State Environmental Policy Act
SD	storm drain
SHA	Site Hazard Assessment
SIM	Seattle Iron & Metals
SMS	Washington State Sediment Management Standards
SPU	Seattle Public Utilities
SQS	Sediment Quality Standard
STST	short-term stormwater treatment
SWPPP	Stormwater Pollution Prevention Plan
SVE	soil vapor extraction

List of Acronyms (Continued)

SVOC	semivolatile organic compound
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
TSS	total suspended solids
ug/L	micrograms per liter
UPRR	Union Pacific Railroad
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VCP	Voluntary Cleanup Program
VOC	volatile organic compound
WDOH	Washington State Department of Health
WQ	Water Quality
WSDOT	Washington State Department of Transportation

This page intentionally left blank.

Executive Summary

This report summarizes source control activities conducted by the Lower Duwamish Waterway (LDW) Source Control Work Group between July 1, 2009 and September 30, 2010. Previous status reports ((Ecology 2007b, 2008b, 2008e, 2009k) 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 June 2009. 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 July 2009 and September 2010 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) 0.1-0.9 East (EAA-1, Duwamish/Diagonal CSO/SD Basin), RM 1.0-1.2 East (King County Lease Parcels) and RM 4.3-4.9 East (Boeing Developmental Center). These reports, known as Data Gaps Reports, are being used to prepare SCAPs for these source control areas. No new SCAPs were published during the current reporting period (July 2009 through September 2010); however, additional action items for EAA-1 were identified in the Duwamish/Diagonal CSO/SD Data Gaps Report.

A total of 484 source control action items have been identified based on the 15 SCAPs published as of September 30, 2010; 153 of these action items have been completed, and 5 are not needed or have been combined with another action item (a total of 33 percent). Of the remaining 326 action items, 98 (30 percent of the remaining action items) are considered high priority (to be completed prior to sediment cleanup), 152 (47 percent) are medium priority (to be completed prior to or concurrent with sediment cleanup), and 76 (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 27 action items during the current reporting period as a result of the completion of the Duwamish/Diagonal CSO/SD Data Gaps report. A total of 42 action items were completed during this period. Additional action items will be identified as SCAPs are completed for the remaining nine source control areas. High priority action items which are not yet complete, as identified in or subsequent to SCAPs completed through September 2010, 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 Department of Ecology's (Ecology) Water Quality (WQ) and Hazardous Waste and 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 388 inspections at 213 facilities between July 2009 and September 2010, and Ecology conducted or participated in over 200 inspections at 153 facilities within the LDW basin during this period.

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 at various locations in the LDW study area. In addition, SPU collected 16 in-line and 43 catch basin samples between July 2009 and September 2010 under the interagency agreement. The catch basin and in-line sampling has helped to identify a number of pollutant sources to the LDW, as described in Section 3.2.3.

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; and soil and groundwater at Basin Oil Company.

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. The projected schedule in previous reports assumed that a fifth site manager will be

required by October 2010. Under the current hiring freeze and budget restrictions, a fifth manager has not been hired. No date has been identified to add additional site managers.

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 July 2009 through September 2010, in addition to the business inspections and source tracing described above, are summarized below. Additional information is provided in Sections 4 through 27.

EAA-1 (Duwamish/Diagonal Way)

- The Port of Seattle submitted a *Terminal 108—Western Parcel Source Control Strategy Plan* to Ecology on October 30, 2009. The Strategy Plan proposes to address contaminant pathways by employing capital improvement projects and physical best management practices in the short-term, followed by longer-term implementation of regulatory compliance, Port-tenant coordination, and public outreach programs.
- The Port of Seattle entered the Voluntary Cleanup Program (VCP) in the spring of 2010 to formalize interactions with Ecology on LDW Source Control efforts at Terminal 108 and a portion of T-106W.
- In a letter dated October 21, 2009, Ecology determined that further remedial action is necessary to clean up contamination at the GSA Federal Center South facility, under 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 underground storage tanks (USTs) T8 and T7 and near groundwater monitoring well FC9.
- Ariel Development contracted with Clean Harbors Environmental Services to conduct cleanout of catch basins, storm drain, sanitary sewer, and combined sewer lines, and a trench at the Rainier Commons property. The cleanout began on May 24, 2010 and consisted of flushing lines associated with catch basins located near the western property boundary.
- In September 2009, EPA conducted sampling of exterior paint at Rainier Commons. Concentrations of 700 to 18,000 milligrams per kilogram (mg/kg) polychlorinated biphenyls (PCBs) were found in exterior paints. Due to various construction activities at the complex, it is possible that PCBs may be "tracked-in" to buildings due to dust and paint chip accumulation. This concern prompted EPA to recommend sampling of PCB concentrations on interior surfaces.
- The Washington State Department of Health (WDOH) conducted an initial health consultation in March 2010 to address questions about inhalation of PCBs in paint chip dust. The report concluded that accidental inhalation of paint chip dust while visiting or

working at Rainier Commons was not expected to result in human health impacts; however, WDOH recommended additional sampling of building exterior paint.

- EPA is working with Rainier Commons LLC on a plan to further assess and clean up areas where PCBs are found above 50 mg/kg.
- At the request of Ecology and SPU, Adapt Engineering, Inc. (for North Star Casteel) collected soil samples in several areas on and surrounding the North Star Casteel property where potentially hazardous materials had historically been stored. The site is currently occupied by a foundry facility and a chain manufacturing facility. Soil samples were analyzed for total petroleum hydrocarbons (TPH), PCBs, polycyclic aromatic hydrocarbons (PAHs), and metals. Motor oil-range petroleum hydrocarbons were detected at 440 mg/kg to 780 mg/kg in three of the five composite samples. PCBs were not detected. Carcinogenic PAHs (cPAH) and metals were detected at relatively low concentrations in all samples.
- SPU observed a large purple stain on the road shoulder near the North Star Casteel facility on March 26, 2010, in an area where a phenolic spill was observed in May 2008. The spill was likely composed of resin. The spill appeared to have been carried by rain to a gravel area, and forklift tracks through the spilled material were observed. Site managers cleaned the spilled area in the road shoulder and arranged for disposal of the material. The spill did not appear to impact any storm drains, but may have resulted in soil contamination due to infiltration in the gravel area. SPU issued a Notice of Violation.

EAA-2 (Trotsky Inlet)

- 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). The Agreed Order requires that the property owner/operator conduct a Remedial Investigation/Feasibility Study (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 Cleanup Action Plan (CAP) that identifies the preferred cleanup action and develops a schedule to remediate the contamination.
- The Industrial Container services property owner/operator submitted an agency review draft RI/FS Work Plan, prepared by Dalton, Olmsted and Fuglevand, Inc., dated July 16, 2010. A final draft was scheduled to be submitted to Ecology in January 2011.
- A combined Early Notice and Preliminary Status Letter was issued to Douglas Management Company on August 13, 2009. As of September 2010, Ecology and the potentially liable party (PLP) were finalizing negotiations on an Agreed Order.

EAA-3 (Slip 4)

- Ecology and 8th Avenue Terminals, Inc. negotiated Agreed Order No. 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, 1009.
- 8th Avenue Terminals submitted a Draft RI/FS Work Plan on December 10, 2009 in accordance with the terms of the Agreed Order. Activities will include: (1) soil and

groundwater sampling at western and southern portions of the property; (2) analysis of stormwater and solids; and (3) design and installation of a stormwater collection system to meet City stormwater codes and City/State permit requirements.

- Deconstruction of the Georgetown Steam Plant (GTSP) Flume began on May 11, 2009 and was issued a notice of physical completion on September 24, 2009. The flume was replaced with a pipe that has no inputs other than surface runoff from the GTSP building roof, S Myrtle Street, and areas immediately adjacent to the west side of the flume.
- King County International Airport (KCIA) has been covered under the Industrial Stormwater General Permit (ISGP) since 1993. The airport is in the transportation category and requires coverage if they have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Previously, the ISGP was interpreted to apply only to the King County Airport Maintenance Shop located outside the airport. King County was notified by Ecology WQ in 2009 that the permit should also apply to the industrial activity areas of the airport itself. KCIA planned to update the stormwater pollution prevention plan (SWPPP) to cover the industrial activity areas of the airport by February 2011. This will include stormwater monitoring of four discharge points on East Marginal Way S.
- Source control activities conducted at the North Boeing Field (NBF)/GTSP Site since publication of the August 2009 Source Control Status Report are listed below. Additional detail is provided in Section 6.
    - Storm drain investigation and cleanout (Boeing; May – September 2009)
    - Preparation of a supplemental data gaps report (Ecology; August 2009)
    - Preliminary stormwater sampling (Ecology; October 2009 – February 2010)
    - Surface cleaning, storm drain structure cleaning, and soil removal (Boeing; March – April 2010)
    - Storm drain structure grouting (Boeing; March – April 2010)
    - Storm drain structure sampling (Boeing; March – May 2010)
    - Expanded stormwater sampling (Ecology; March – June 2010)
    - Infiltration and inflow assessment (Ecology; April – July 2010)
    - Slip 4 sediment recontamination modeling (Ecology; May – September 2010)
    - Storm drain structure and line cleaning (Boeing; May – July 2010)
    - Soil and groundwater sampling at GTSP (Seattle City Light [SCL]; June 2010)
    - Source evaluation, north lateral storm drain area (Boeing; July – October 2010)
    - Focused soil investigation – Propulsion Engineering Laboratory (PEL) area (Boeing; July – October 2010)
    - Concrete joint removal in the PEL area (Boeing; July – October 2010)
    - Video-inspection of north lateral storm drain line (Boeing; August 2010)
    - Removal and replacement of storm drain lines (Boeing; September – October 2010)

- Additional NBF/GTSP Site source control activities in progress as of September 2010 include:
    - GTSP continuing site characterization (scheduled for completion in January 2011);
    - Cleanout of all accessible lines, catch basins, manholes, and oil/water separators in the north-central, south-central, and south lateral storm drain lines (scheduled for completion in early 2011);
    - Soil and groundwater investigation for the PEL area — soil results are pending, and will be used to identify appropriate groundwater sampling locations (scheduled for completion in early 2011);
    - A human health risk assessment and transport evaluation for concrete joint material in the flightline area (scheduled for completion in early 2011);
    - Video inspection of storm drain lines in the north-central, south-central, and south lateral storm drain lines (all but approximately 350 feet completed in late 2010; remaining to be completed in early 2011 subject to weather conditions);
    - Source removal in the north lateral storm drain area, including removal of paint from bollards, and removal of building caulk and other materials at Building 3-326 (removal of paint from bollards completed in October 2010; removal of other source material to be scheduled); and
    - Planning for an interim remedial action near the fenceline between GTSP and NBF (scheduled for the 2011 construction season).
- In late September 2010, EPA and Boeing entered into an Administrative Settlement Agreement and Order on Consent (ASAOC). Under this agreement, Boeing agreed to implement short-term and long-term treatment of stormwater in the north lateral storm drain. The short-term stormwater treatment facility for the north lateral storm drain began operation in October 2010.

EAA-4 (Boeing Plant 2/Jorgensen Forge)

- In September 2009, Golder Associates (for Boeing) prepared a *2009 Addendum to 2008 Stormwater Source Control Interim Measure Work Plan.* The addendum addresses additional catch basin sampling to be conducted at Boeing Plant 2 to evaluate and identify potential sources of PCBs and metals in the Round 3 (2008-2009) stormwater and suspended solids samples to gauge the effectiveness of the 2008 Interim Measure.
- Boeing issued a *Volume VIIb Corrective Measures Study: North Area Data Gap Investigation* in October 2009. This report describes field work and laboratory analysis of groundwater samples performed at the North Area of Plant 2.
- On October 12, 2009, Boeing finalized the *Other Area 12 ERD Interim Measure — Semiannual Report* detailing groundwater data generated during the period from December 2008 through June 2009. Subsequent remediation was set to continue through April 2010.
- In February 2010, Golder Associates (for Boeing) submitted a *Stormwater Source Control Round 3 Sampling Report 2008-2009 for Boeing Plant 2*. It was determined that

Round 3 solids data demonstrate an improvement from Round 1 and 2 sampling, but indicate that PCBs and metals remain at concentrations above their respective action levels. The fourth round of source control sampling began on November 9, 2009 and was completed on April 22, 2010. This consisted of sampling and analysis of suspended solids and/or water along seven of 24 active storm lines at Boeing Plant 2. Results indicate that PCBs and metals remain variably present in Plant 2 stormwater solids in some lines at concentrations above their respective action levels.

- Boeing prepared an Addendum to the Stormwater Source Control Work Plan and Sampling and Analysis Plan in July 2010 which presents the approach and procedure for implementation of automated composite stormwater sample collection as part of the annual source control sampling program at Plant 2. Boeing submitted a *Draft Stormwater System Work Plan to Control Storm Drain Discharges for Plant 2* to EPA in July 2010. The fifth round (2010-2011) of sampling was set to begin in October 2010.
- During October and November of 2009, Boeing completed the removal of caulk materials containing > 25 mg/kg PCBs in concrete pavements in the 2-60s area at Plant 2, as detailed in *Preliminary IM Completion Report: Removal of PCB-Containing Caulk in Concrete Pavements*. The second phase of field work for the removal of caulk in the 2-31 and 2-10 Areas began August 2, 2010 and continued through the month.
- Boeing conducted groundwater monitoring activities at Plant 2 as detailed in *CMS Phase Semiannual Groundwater Monitoring Report, February 2010*. Volatile organic compounds (VOCs), metals, and PCBs were detected at concentrations greater than screening levels for the protection of surface water. The second semiannual round of Shoreline Corrective Measures Study sampling was conducted in August 2010; results were not available at the time this report was prepared.
- The National Oceanic and Atmospheric Administration (NOAA), Department of the Interior, Ecology, Muckleshoot Indian Tribe, and Suquamish Tribe filed a complaint against The Boeing Company for the damage, destruction, and loss of natural resources resulting from releases of hazardous substances into the LDW. All parties entered into a Consent Decree on May 4, 2010. Boeing, in lieu of and as equivalent to monetary damages, agreed to implement a habitat restoration project along the shoreline of Plant 2.
- Boeing submitted an *Interim Measure Work Plan: 2010 Soil and Stormwater Management Plan* for Plant 2 in July 2010. The work plan describes activities that will be conducted during 2010 to manage excavated and exposed soil during demolition, and to manage stormwater until such a time that a stormwater system is installed in 2012.
- In July 2010, Jorgensen Forge Corporation and Boeing submitted the *15-Inch and 24-Inch Property Line Storm Pipes Cleanup Work Plan* to EPA. Phase I pipe and storm drain lateral cleanout was proposed to be completed by the end of 2010.
- A *Draft Engineering Evaluation/Cost Analysis* (EE/CA) was submitted to EPA in March 2009 on behalf of Jorgensen Forge for a removal action of contaminated sediments and associated bank soils within the removal action boundary. Included in the EE/CA is a Draft Biological Assessment along with a Draft Clean Water Act Evaluation.

- 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, to be conducted by Boeing and the Jorgensen Forge Corporation, consists of cleaning and closure of existing 15- and 24-inch public lateral storm drain pipes. This removal action is intended to prevent continued discharge of stormwater through known PCB contamination to the LDW.

EAA-5 (Terminal 117)

- In September 2009, all catch basins in the Terminal 117 Upland Study Area were inspected. Only CB-3 and CB-5 had accumulated sufficient solids to be analyzed for dioxins and furans, arsenic, copper, silver, TPH, PCBs, and PAHs. Due to higher than expected PCB and dioxin and furan concentrations, site inspections were conducted in November 2009 resulting in preparation of a stormwater solids control plan and site maintenance. Site maintenance activities were documented in the sixth semi-annual Time Critical Removal Action (TCRA) Operations & Maintenance report and submitted to EPA on December 28, 2009.
- On June 3, 2010, the Port of Seattle and City of Seattle submitted a Revised EE/CA to EPA, which incorporated all relevant upland and right-of-way data, including assessments of portions of the site formerly occupied by the Malarkey Plant. The EE/CA also established boundaries for the removal areas and proposed two removal action alternatives.
- On September 30, 2010, EPA issued its Action Memorandum for a Non-Time-Critical Removal Action. The Removal Action consists of the removal and disposal of approximately two acres of contaminated marine sediments, three acres of Terminal upland soils (formerly an industrial facility), and 10 acres of soils in specified adjacent streets, rights-of-way, and residential yards. EPA is preparing an Enforcement Order on Consent to be negotiated with the Port of Seattle and City of Seattle.
- In 2010, SPU cleaned all the catch basins, pump stations, and storage tanks on the temporary stormwater collection system that serves Dallas Avenue S, S Donovan Street, and 17th Avenue S adjacent to Terminal 117. In addition, the catch basins, inlets, and pipes on the combined sewer system on Dallas Avenue S, S Cloverdale Street, and S Donovan Street were cleaned and the streets in this area were swept.
- 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. Basin Oil will contribute $17,000 to the state's General Fund as well as $13,000 to a Chelan County salmon restoration project as part of an Innovative Settlement Project.
- In August 2010, SAIC, on behalf of Ecology, summarized findings of a May 2009 soil and groundwater characterization. SAIC found that one or more soil samples exceeded MTCA Method A or Method B soil cleanup levels for the following chemicals: arsenic, chromium, heavy oil-range and gasoline-range petroleum hydrocarbons, benzo(a)pyrene, benzene, and carbazole. However, because the site is small, elevated soil contaminant concentrations are localized and near the surface, and no contaminants (except arsenic)

were detected in groundwater at concentrations above screening levels, the Basin Oil property is not believed to represent a significant potential source of contaminants to Terminal 117 or Dallas Avenue.

EAA-6 (Boeing Isaacson/Central KCIA)

- A property boundary investigation was conducted in late July 2009 at Boeing Isaacson/Thompson, and consisted of collecting soil samples at locations along the west property boundary adjacent to the Port of Seattle property and at the south property adjacent to the PACCAR site. Soil samples were analyzed for arsenic, cadmium, chromium, copper, lead, and zinc.
- Boeing and Ecology entered into Agreed Order No. DE-7088, effective April 23, 2010, to conduct an RI/FS and prepare a draft CAP.
- On June 21, 2010, Boeing submitted a draft RI/FS Work Plan to Ecology for review. The draft Work Plan summarized previous environmental investigations and voluntary remedial actions at the site, described current environmental site conditions and data gaps, and listed proposed groundwater, soil, storm drain, and vapor investigations. As of September 30, 2010, Ecology was reviewing the draft Work Plan.
- In 2010, King County began design/construction of improvements to Taxiway Alpha, which is located primarily within this source control area. The project includes construction of a pump station and water quality vault that will provide basic water quality treatment for this portion of the airport.
- In-line sediment traps were installed at the Airport's discharge point to the KCIA SD#2/PS45 EOF outfall. The sediment traps were sampled in March 2009 and October 2009, and were scheduled to be resampled in December 2010. Zinc (5,559 mg/kg), phenanthrene (3.2 mg/kg dry weight [DW]), various high molecular weight PAH (HPAH) compounds (total HPAH at 32.7 mg/kg DW), and bis(2-ethylhexl)phthalate (3.7 mg/kg DW) were detected at concentrations above storm drain screening levels.

EAA-7 (Norfolk CSO/SD)

- In December 2009, Boeing's contractor published the *2009 Annual Sampling Report, South Storm Drain System, Boeing Developmental Center*. This report presents the results of the post-removal monitoring associated with the south storm drain line at the Boeing Developmental Center (BDC) during 2009. Activities and results are summarized below.
- Annual cleanout of accumulated solids from the Vortechnics 9000 unit was completed, and further pressure washing (jet-rodding) of the storm drain line was conducted from the Vortechnics 9000 unit approximately 350 feet upstream towards and beneath Building 9-101.
- Boeing collected storm drain solids from Manhole #3, upstream of the Vortechnics 9000 unit; PCBs were detected at 33 mg/kg DW. Two samples of the solids material captured by the Vortechnics 9000 unit were also collected; samples contained 21.7 mg/kg DW and 23.5 mg/kg DW. Another sample was collected at Manhole #2, downstream from the Vortechnics 9000 unit; PCBs were detected at 16.2 mg/kg DW.

RM 0.0 – 0.1 East (Spokane Street to Ash Grove Cement)

- The City of Seattle approved a Land Use Application to allow maintenance and repairs to three docks for the Ash Grove Cement Company on August 10, 2009. The project includes the replacement of 9 steel piles on two docks, 14 wooden piles and an existing dolphin. Non-significant short-term impacts to water and air quality from construction are expected to be mitigated through permitting agencies and compliance with best management practices (BMPs). No long-term impacts are anticipated from maintenance activities.

RM 1.0-1.2 East (King County Lease Parcels)

- In early July 2010, Ecology received a telephone call indicating that pressure washing of a conveyer containing limestone sediment at the J.A. Jack & Sons facility had resulted in a release to the LDW. Ecology WQ sent J.A. Jack & Sons a warning letter requiring that wastewater discharges to the river be eliminated and that a conveyor belt maintenance plan be developed. The plan was submitted to Ecology on August 8, 2010.

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

- Ecology issued a draft Agreed Order for corrective action and a draft CAP for the Burlington Environmental site in February 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.
- Under Agreed Order No. DE-5296 with Ecology, Art Brass Plating began conducting and RI. High levels of trichloroethylene (TCE) have been detected in groundwater as far west as 1st Avenue S. Elevated levels of nickel have also recently been found in some groundwater samples. The draft RI report is scheduled to be completed in June 2011.
- Under Agreed Order No. DE-5479 with Ecology, Blaser Die Casting sampled groundwater monitoring wells in June, August, and November 2009, and February 2010. Blaser Die Casting submitted a draft memo to Ecology on July 30, 2010 regarding fate and transport modeling related to the remedial investigation at the site.
- Under Agreed Order No. DE-5348, Capital Industries conducted Tier II Reconnaissance Sampling during June/July 2009, and submitted a draft *Remedial Investigation Field Program, First Phase Report* to Ecology on September 18, 2009. The report acknowledged remaining data gaps associated with characterizing the nature and extent of vinyl chloride contamination.
- Capital Industries submitted a draft Groundwater Monitoring Plan to Ecology on March 22, 2010. Ecology approved the Groundwater Monitoring Plan on June 2, 2010. A total of 13 wells were installed within the Capital Area of Investigation during the 1st quarter of 2010; 12 offsite monitoring wells were installed at adjacent properties owned by CalPortland, Gull Industries, Inc., and Michigan Properties during the 2nd quarter of 2010.

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

- An RI Report was submitted to Ecology for the Duwamish Marine Center on May 11, 2009. The report presents results and conclusions of subsurface investigation activities conducted in accordance with a Compliance Sampling Plan. Ecology is currently negotiating an Agreed Order to continue contaminant cleanup.
- AMEC, on behalf of Kelly-Moore Paint Company, conducted a PCB investigation and cleanup in preparation of lease or sale of the facility as light manufacturing or warehousing space. A PCB Closure and Characterization Work Plan was submitted to EPA in July 2009; EPA subsequently approved the plan. Collection of wipe, concrete, and sediment samples indicated elevated PCB concentrations which warranted further investigations to characterize the nature and extent of PCBs within the buildings. Kelly-Moore is evaluating potential demolition of Building 8, where PCB concentrations exceeded 1 mg/kg in floor samples and wall samples.
- An addendum to the Kelly-Moore January 2010 PCB report describes the cleanup and sampling of three separate areas in Building 6 where PCB concentrations exceeded the high-occupancy screening criterion of 1 mg/kg. After jack hammering and scarification, concentrations of PCBs in all composite samples were below 1 mg/kg.

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

- In November 2009, SPU requested that Seattle Iron & Metals (SIM) collect samples of roof drains and parking lot catch basins (which discharge without treatment to the S Garden Street SD) to determine whether this stormwater should be routed to the facility's treatment system.
- In an April 28, 2010 email to EPA, SPU expressed concern that pollutants from the SIM property is contaminating the City storm drain system and could, over the long-term, affect sediment quality in the LDW. Specific concerns include the potential for track-out of contaminated material onto S Myrtle and adjacent streets, atmospheric deposition of dust and debris that could migrate onto adjacent streets and properties, and the proposed expansion of SIM operations to the former Trim Systems property at 701 S Orchard Street.
- In May 2010, SPU and EPA collected samples from two roof drains, two onsite catch basins (parking lot), and one right-of-way catch basin (next to the facility entrance driveway). The samples contained elevated levels of PCBs and metals.
- In July 2010, Ecology requested EPA review of the Stormwater Engineering Report, Stormwater Quality Report, and Mixing Zone Report prepared by SIM. Ecology intended to approve the reports on a conditional basis so that SIM could make necessary improvements during the 2010 construction season. EPA recommended the inclusion of additional language in Ecology's conditional approval letter to indicate that, for reissuance of SIM's stormwater permit (WA-003196-8), additional studies to characterize and rectify stormwater, atmospheric deposition, and all other potential source control issues would be required.

- Also in July 2010, staff at Seattle Boiler Works, located adjacent to SIM on the north, provided Ecology with analytical results for a dust sample that was collected from the windshield wiper of a car parked at the facility. The windshield had been cleaned at the beginning of the work shift. The sample contained high concentrations of copper, lead, chromium, and zinc.

RM 3.9-4.3 East (Slip 6)

- Insurance Auto Auctions, Inc. submitted a *Stormwater System Investigation—First Quarterly Data Report* to Ecology on August 27, 2010. The first quarterly report documents results of the inspections and sampling performed in accordance with the *Stormwater System Investigation Plan*.
- AMEC, on behalf of 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.

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

- Lafarge announced on April 29, 2010 that the company will cease clinker production at the Seattle plant at the end of 2010. At that time, the facility will be transitioned from a clinker/cement manufacturing operation to a cement grinding, blending and shipping operation. The frequency and volume of stormwater discharge is expected to increase in 2010, when the cement manufacturing process is discontinued at this site. Stormwater was recycled and used in the cement manufacturing process.

RM 1.3-1.6 West (Glacier Bay)

- Duwamish Shipyard, Inc. entered into an Agreed Order with Ecology, effective September 13, 2010. Under Agreed Order DE-6735, Duwamish Shipyard will conduct an RI/FS at the site. In accordance with the Agreed Order, Anchor (for Duwamish Shipyard) submitted a Final Work Plan for a Remedial Investigation/Feasibility Study to Ecology in August 2010. The report describes the scope of upland and sediment investigations to be performed at Duwamish Shipyard and adjacent aquatic areas.
- Glacier Northwest, Inc. and Reichhold, Inc. entered into an Agreed Order with Ecology in May 2009. Under Agreed Order No. DE 6000, effective July 28, 2009, Glacier and Reichhold will conduct an RI/FS at the site.
- During July and October of 2009, Glacier Northwest conducted a historical stormwater piping investigation on the southern portion of the property. Field activities confirmed the presence of a portion of a 15-inch diameter pipe and a pipe that ties into the SPU storm drain south of the site. Five catch basins from historical records were not located during the investigation.
- In November 2009, Glacier Northwest submitted a Technical Memorandum summarizing the historical stormwater piping investigation to Ecology; the Memorandum concludes that, based on a records review, an in-pipe camera survey, and multiple test pit excavations, the stormwater piping does not appear to present a contaminant migration

pathway to the LDW. In addition, the Memorandum recommended that the 15-inch pipe be abandoned by cutting and capping near the south entrance of the property.

- In April 2010, the PLPs for the Glacier Northwest/Reichhold site notified Ecology of their plans to commence groundwater sampling, and submitted a Sampling and Analysis Plan. Ecology requested that additional parameters be added for analysis, including the full suite of priority pollutant metals, semivolatile organic compounds (SVOCs), and dioxins/furans for two specific wells. The PLPs declined to add the requested parameters. Ecology notified the PLPs that they may need to resample in the future under an approved sampling plant that meets RI/FS requirements. The PLPs conducted groundwater sampling on May 27 and 30, 2010, and submitted results to Ecology on August 5, 2010. Results were not available as of September 2010.
- The Port of Seattle drilled monitoring wells and collected soil and groundwater samples at N Terminal 115 between October 27 and November 12, 2009. Ecology had not reviewed the Work Plan for this activity. Ecology collected split samples where possible.
- On January 5, 2010, the Port of Seattle submitted a Final Environmental Investigation Report for the N Terminal 115 site.
- Ecology prepared a draft Agreed Order, Scope of Work, and Schedule for the N Terminal 115 site in January 2010. The Agreed Order documents were revised in response to Port of Seattle comments, and re-sent to the Port of Seattle on May 4. The Port of Seattle and Ecology are currently negotiating the details of the Agreed Order.

RM 1.6-2.1 West, Terminal 115

- In October and December 2009, two rounds of groundwater monitoring were performed at Terminal 115's Cardlock Facility. Arsenic, barium, cadmium, chromium, lead, and selenium were detected in groundwater. Arsenic concentrations exceeded the MTCA Method A cleanup level in wells MW-15 and MW-19 in the October and December samples. Chromium and lead exceeded the MTCA Method cleanup level in well MW-15 in December. Cadmium was detected in well MW-15 at a concentration below the MTCA Method A cleanup level.
- In March 2010, TEC Inc. (for the Port of Seattle) prepared the *Recontamination Study for T-115 Work Plan*. The study includes installation of sediment traps at five locations selected to represent drainage sub-basins. Dry season and wet season sediment trap samples will be collected in October 2010 and April 2011, respectively.
- In April 2010, the Port of Seattle collected inline solids samples from storm drain lines connected to Outfalls 2123, 2124, 2125, and 2220. The samples were analyzed for metals, SVOCs, and dioxins. Mercury, zinc, and phthalates were detected at concentrations above storm drain screening levels. Dioxin concentrations ranged from 0.7 to 1,252 nanograms per kilogram (ng/kg). A report summarizing results of inline solids and sediment trap sampling will be published in spring 2011.

This page intentionally left blank.

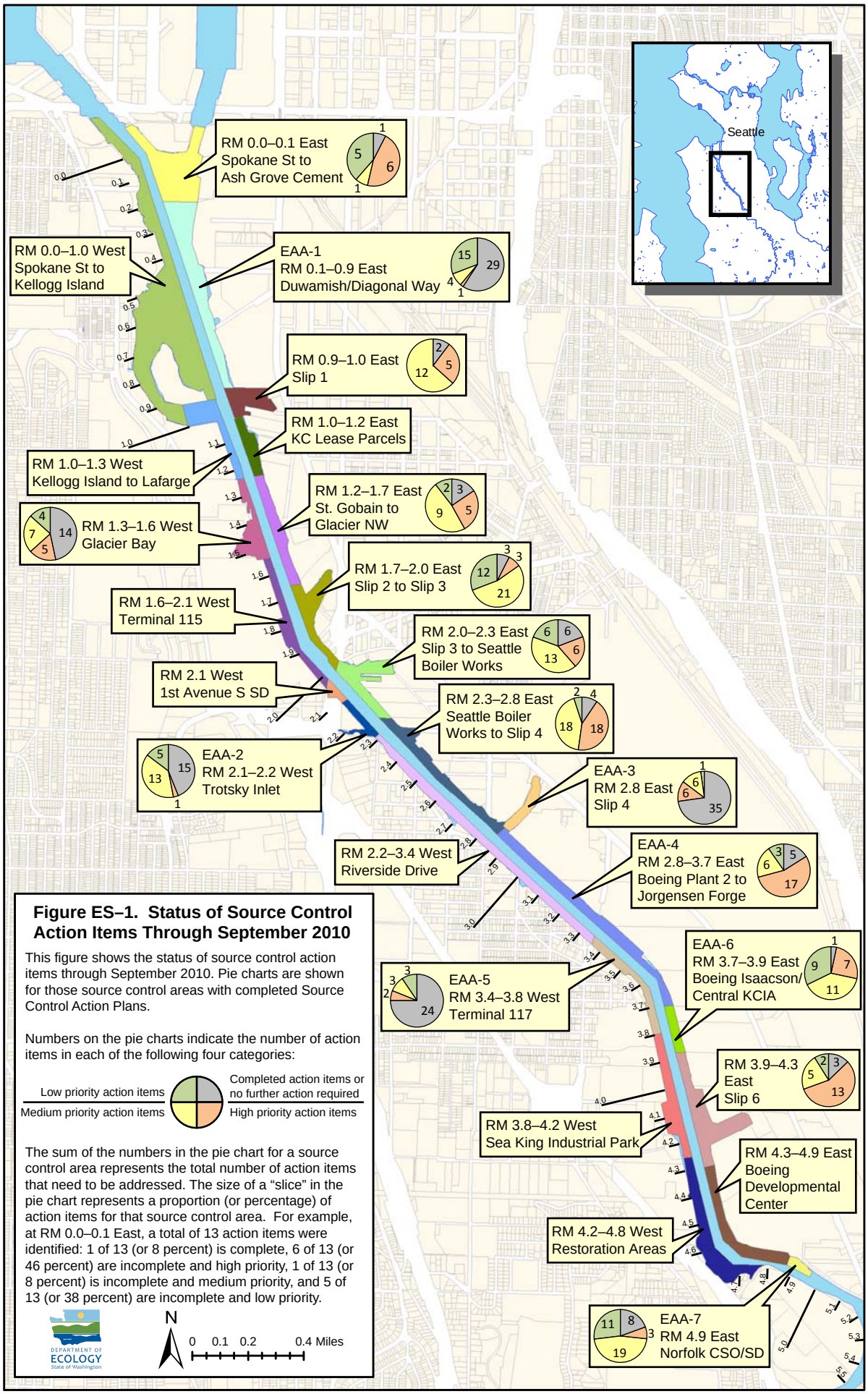


Figure ES–1. Status of Source Control Action Items Through September 2010

This figure shows the status of source control action items through September 2010. Pie charts are shown for those source control areas with completed Source Control Action Plans.

Numbers on the pie charts indicate the number of action items in each of the following four categories:

Low priority action items / Medium priority action items

Completed action items or no further action required / High priority action items

The sum of the numbers in the pie chart for a source control area represents the total number of action items that need to be addressed. The size of a "slice" in the pie chart represents a proportion (or percentage) of action items for that source control area. For example, at RM 0.0–0.1 East, a total of 13 action items were identified: 1 of 13 (or 8 percent) is complete, 6 of 13 (or 46 percent) are incomplete and high priority, 1 of 13 (or 8 percent) is incomplete and medium priority, and 5 of 13 (or 38 percent) are incomplete and low priority.

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	2011
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)					
North Boeing Field / KCIA / I-5 Storm Drains	Reinstall sediment traps and continue monitoring as needed	SCAP	SPU, Boeing	Ongoing	2014
GTSP	Conduct sitewide site characterization to assess need for additional remediation	SCAP	SCL	In Progress	Jan-11
North Boeing Field	Characterize extent of PCBs in new joint sealant material	Follow-On	Boeing	In Progress	2011
	Continue source tracing in north drain line to identify and/or eliminate transport of PCBs to Slip 4	Follow-On	Boeing	In Progress	2011
KCIA	Complete source tracing	SCAP	KCIA	In Progress	2011
NBF-GTSP	Conduct RI/FS and implement interim actions (as needed).	New	Ecology, Boeing, City of Seattle, King County	In Progress	2013
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 (DSOA) Interim Measure	SCAP	EPA, Ecology, Boeing	In Progress	TBD
	Remove contaminated bank fill material	SCAP	EPA, Boeing	Planned	TBD
	Continue quarterly shoreline groundwater monitoring	SCAP	EPA, Boeing	In Progress	TBD
	Excavate PCB-contaminated soil in the substation area (southwest corner of Plant 2)	New	Boeing, Jorgensen	Planned	TBD
	Address removal of materials containing PCBs, including joint caulk material	SCAP	EPA, Boeing	In Progress	2010
	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
	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
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	TBD
	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	SCAP	Ecology, Jorgensen	Planned	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
	Remove PCB-contaminated sediments from the 24-inch storm drain line	Follow-On	Boeing, Jorgensen	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
	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	TBD
	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 on Consent (AOC) 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
Early Action Area 5 (RM 3.4-3.8 West; Terminal 117)					
Terminal 117	Conduct removal action in accordance with EPA Enforcement Order on Consent	Follow-On	City of Seattle, Port of Seattle	Planned	May-12
Adjacent Streets/Dallas Avenue	Continue monitoring of stormwater and catch basin sediments	Follow-On	SPU, Port of Seattle	Ongoing	TBD
Early Action Area 6 (RM 2.7-2.9 East; Boeing Isaacson/Central KCIA)					
KC Airport SD #2/PS45 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
	If COCs are present in the storm drain line, conduct source tracing to identify potential contaminant sources at KCIA.	SCAP	King County, SPU	In Progress	2011
	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.	SCAP	Ecology, SPU, King County	In Progress	2011
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	2010
	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	2010
	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	2010
KCIA	Determine the presence or absence of PCB-containing joint caulking material within the central KCIA drainage basin.	SCAP	King County	In Progress	TBD
Early Action Area 7 (RM 4.9 East; Norfolk CSO/SD)					
Boeing Developmental Center	Continue sediment monitoring in the vicinity of the south storm drain sediment removal activities	SCAP	Boeing	In Progress	TBD
	Determine the source of PCBs in storm drain solids and conduct source control activities to remove PCBs from the system	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)					
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

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
	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 VCP and determine whether further action is needed.	SCAP	Ecology	Planned	TBD
Ash Grove Cement	Negotiate an agreed order for an RI/FS 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
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	Jun-11
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.	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
	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	Jun-11
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.	SCAP	Ecology	Planned	2011
	Determine appropriate engineering controls for the inaccessible contamination located beneath the soil/water separator described in the 1991 Limited UST Assessment.	SCAP	Property Owner/Operator	Planned	Dec-12
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	2011
	Review the latest groundwater monitoring report regarding exceedances of diesel-range hydrocarbons.	SCAP	Ecology	Planned	Dec-12
Certainteed Gypsum	Review response to EPA 104(e) Request for Information letter sent to Certainteed Gypsum in July 2008.	SCAP	Ecology	Planned	Jun-11
RM 1.7-2.0 East (Slip 2 to Slip 3)					
Duwamish Marine Center	Determine the status of Outfalls 2021 and 2022; if they are currently in use, determine the area drained by these outfalls and assess the potential for COCs to reach the LDW via this pathway.	SCAP	SPU, Ecology	Planned	TBD
	Negotiate an Agreed Order to conduct additional investigation/cleanup activities	Follow-On	Ecology	In Progress	2011

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
	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)					
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 a 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
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
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)					
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	2011
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	2011
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.	SCAP	Ecology	Planned	2011
	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
	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

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

Source Control Facility or Outfall	Action Item	Type	Responsible Party	Status	Estimated Completion Date
Seattle 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	2011
	Monitor compliance with Ecology Follow-Up Order No. 6185.	SCAP	Ecology	In Progress	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
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	2011
	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 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
Crowley Marine Services/8th Avenue Terminals	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	Jun-11
	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	May-11
	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
Former Trim Systems	Review responses to EPA's July, 2008 Request for Information 104(e) letters sent to Seattle Iron & Metals, Manson Construction, and Northwest Container Services.	SCAP	Ecology	Planned	2011
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	2011
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.	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
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	2010

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
	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	2010
	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
	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	2010
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 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.	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).	SCAP	EPA, Container Properties, Rhodia, Bayer CropScience	Planned	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
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
Boeing Developmental Center (BDC)	Conduct stormwater and/or storm drain solids monitoring for outfalls DC14 and DC15.	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	2011
	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	Nov-10
	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-11
N Terminal 115 (Former MRI Corporation)	Negotiate an Agreed Order to address soil and groundwater contamination	New	Ecology	In Progress	Mar-11

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

1.0 Introduction

This report summarizes the status of source control efforts in the Lower Duwamish Waterway (LDW) from July 1, 2009, through September 30, 2010. 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), and August 2009 (Ecology 2009k). Detailed background 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 in the waterway include mercury and other metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), phthalates, and other organic compounds. These chemicals may 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, are listed below:[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 2010c). 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;
- 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 feasibility study (FS) is being developed to address cleanup options in the LDW.

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] 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)

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

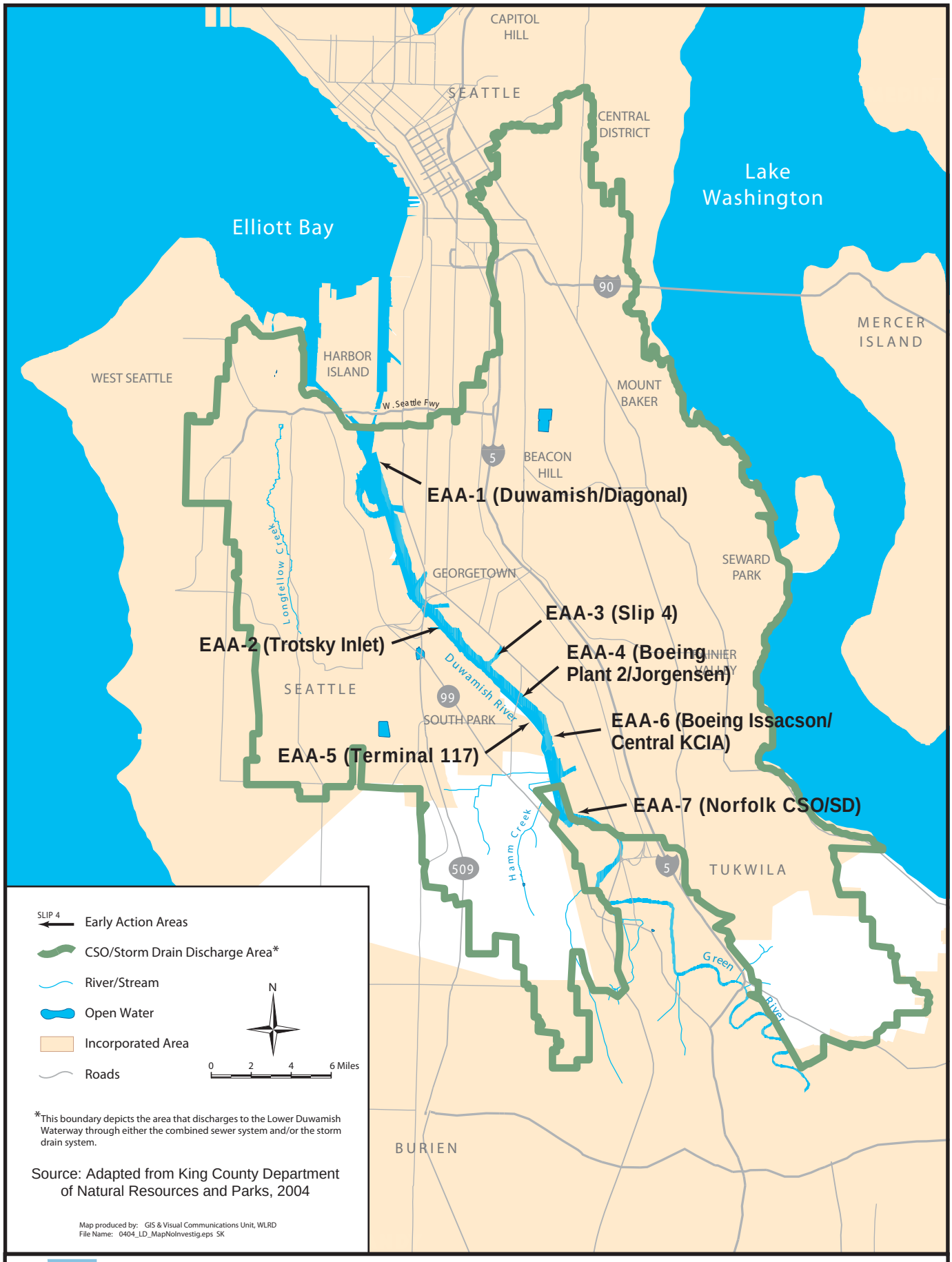
Further information about LDW source control can be found at Ecology's Lower Duwamish Source Control website:
http://www.ecy.wa.gov/programs/tcp/sites_brochure/lower_duwamish/lower_duwamish_hp.html

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 (WSDOT), Puget Sound Clean Air Agency (PSCAA), or Public Health – Seattle and King County (PHSKC), may also be developed as information collection and source control proceeds.

This page intentionally left blank.



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
- 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 FS is still being developed and 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 September 30, 2010, 15 SCAPs have been published. Publication dates for these 15 SCAPs and estimated publication dates and schedule for the remaining nine 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	December 2011
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	September 2011
RM 2.1 West (1st Avenue S SD)		September 2010	November 2011
RM 2.2-3.4 West (Riverside Drive)		March 2011	December 2011
RM 3.8-4.2 West (Sea King Industrial Park)		May 2011	January 2012
RM 4.2-4.8 West (Restoration Areas)		July 2011	March 2012

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 15 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	49	29	20
EAA-2 (Trotsky Inlet)	30	34	15	19
EAA-3 (Slip 4)	44	52	39	13
EAA-4 (Boeing Plant 2/Jorgensen Forge)	31	31	5	26
EAA-5 (Terminal 117)	19	32	24	8
EAA-6 (Boeing Isaacson/Central KCIA)	31	28	1	27
EAA-7 Norfolk CSO/SD	44	42	9	33
RM 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 1.2-1.7 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	4	38
RM 3.9-4.3 East (Slip 6)	29	23	3	20
RM 1.3-1.6 West (Glacier Bay)	32	30	14	16
Total	**435**	**484**	**158**	**326**

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

Currently, a total of 484 source control action items have been identified based on the 15 SCAPs published as of the end of September 2010:

- 153 action items (32 percent) have been completed,
- 79 action items (16 percent) are in progress,
- 239 action items (49 percent) are planned,
- 8 action items (2 percent) are ongoing, long-term actions, and
- 5 action items (1 percent) have been cancelled (not needed).

Of the 326 action items that are active (i.e., in progress, planned, or ongoing), 98 (30 percent) are considered high priority (to be completed prior to sediment cleanup), 152 (47 percent) are medium priority (to be completed prior to or concurrent with sediment cleanup), and 76 (23 percent) are low priority (ongoing actions, or actions to be completed as resources become available).

The action item tally presented above reflects a net increase of 27 action items during the current reporting period (July 2009 through September 2010) as a result of the completion of the *Summary of Existing Information and Identification of Data Gaps for the Duwamish/Diagonal CSO/SD Basin* (SAIC 2009c), which provided additional action items for EAA-1. A total of 42 action items were completed during this period. Additional action items will be identified as SCAPs are completed for the remaining nine 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, and August 2009. These projections have been updated again for the August 2011 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. Under the current hiring freeze and budget restrictions, a fifth site manager has not been hired. No date has been identified to add additional site managers.

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, 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.

This page intentionally left blank.

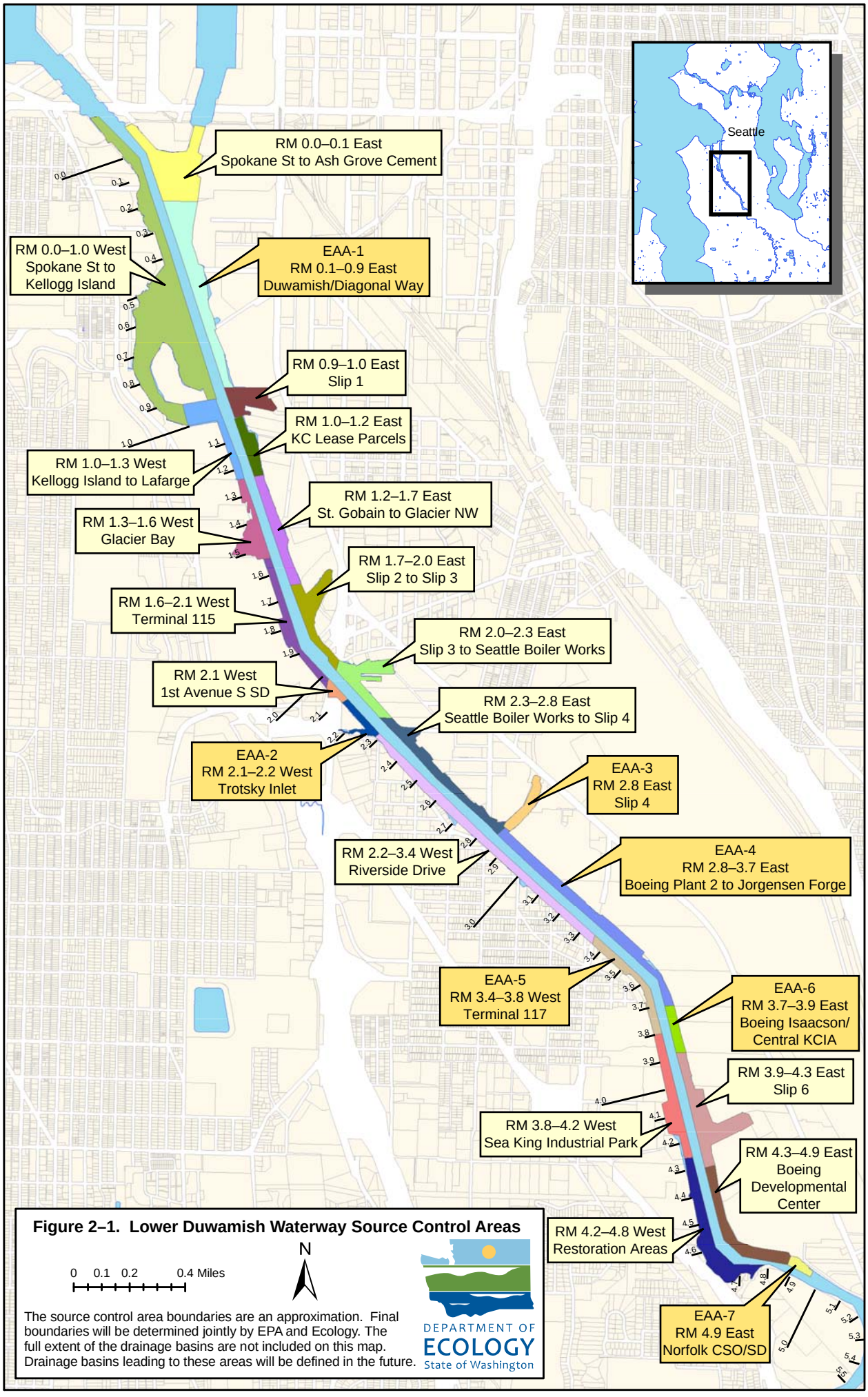


Figure 2–1. Lower Duwamish Waterway Source Control Areas

The source control area boundaries are an approximation. Final boundaries will be determined jointly by EPA and Ecology. The full extent of the drainage basins are not included on this map. Drainage basins leading to these areas will be defined in the future.

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, and August 2009 Source Control Status Reports (Ecology 2008b, 2008e, 2009k). 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 [DRCC])
- 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 September 2010, EPA had issued Request for Information letters to 228 entities (current or previous property owners and operators); a list of entities who have received these letters is available at EPA's LDW web site: http://yosemite.epa.gov/r10/CLEANUP.NSF/sites/LDuwamish.

In November 2009, EPA sent postcards to 30 businesses within the LDW basin indicating that they may be required to obtain stormwater permit coverage from Ecology, and that they may be subject to formal enforcement action if they discharge stormwater to the LDW without a permit (McCauley 2009).

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 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.

3.1.1 SPU Business Inspection Program

During the current reporting period (July 2009 through September 2010), 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 383 screening visits and inspections at 213 facilities during the period from July 2009 through September 2010 (SPU 2010, Stewart 2010). This includes 35 screening visits, 166 initial inspections, and 182 follow-up inspections. Of the 166 facilities with new (initial) inspections during this reporting period, 133 required one or more corrective actions, and 102 of these were able to achieve compliance as of September 30, 2010. In addition, nine facilities that were inspected during a previous reporting period were able to achieve overall compliance.

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 July 2009 through September 2010, inspections were conducted in the following source control areas:

Source Control Area	Sub-Basin	No. of Facilities Inspected	No. of Facilities In Compliance as of 9/30/2010
RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way)	Diagonal SD, Duwamish/Diagonal CSO	65	51
RM 1.0-1.2 East (King County Lease Parcels)	Duwamish East (Direct)	1	1
RM 1.2-1.7 East (St. Gobain to Glacier NW)	Duwamish East (Direct)	3	2
RM 1.7-2.0 East (Slip 2 to Slip 3)	S River Street SD	3	3
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)	S Brighton Street SD	6	4

Source Control Area	Sub-Basin	No. of Facilities Inspected	No. of Facilities In Compliance as of 9/30/2010
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)	S Garden Street SD, Duwamish East (Direct)	2	1
RM 2.8 East (EAA-3: Slip 4)	Slip 4	6	5
RM 2.8-3.7 East (EAA-4: Boeing Plant 2/ Jorgensen Forge)	16th Avenue Street SD	1	0
RM 4.9 East (EAA-7: Norfolk CSO/SD)	Norfolk CSO/SD/Emergency Overflow (EOF)	3	2
RM 0.0-1.0 West (Spokane St to Kellogg Island)	SW Dakota Street SD, SW Idaho Street SD	23	20
RM 1.3-1.6 West (Glacier Bay)	SW Kenny Street SD	4	4
RM 1.6-2.1 West (Terminal 115)	Highland Way SW SD	5	5
RM 2.1 West (1st Avenue S SD)	1st Avenue S SD	18	16
RM 2.1-2.2 West (EAA-2: Trotsky Inlet)	Trotsky Inlet, 2nd Avenue S SD	14	11
RM 2.2-3.4 West (Riverside Drive)	7th Avenue S SD, South Park/Riverside Drive, Duwamish West (Direct)	55	53
RM 3.8-4.2 West (Sea King Industrial Park)	S 96th Street SD	4	0
	Total	**213**	**178**

Between 2003 and September 30, 2010, SPU has conducted inspections at 1,276 facilities. A total of 3,002 corrective actions were required at 684 (54 percent) of the businesses that have been inspected. Of the corrective actions identified, approximately 44 percent related to spill response, 36 percent related to stormwater issues, 18 percent related to hazardous waste, and 2 percent related to industrial waste issues. Additional information, including a detailed list of corrective actions at each site inspected, is provided in the December 2010 SPU source control program update (SPU 2010).

A total of 139 illicit connections or illicit discharges to the storm drain system have been discovered since the business inspection program began in 2003 (SPU 2010). During the current reporting period (July 2009 through September 2010), a total of 18 illicit connections/discharges were identified:

Stormwater Basin	Facility Name	Address
Diagonal Avenue S CSO/SD	Alaskan Copper & Brass	3405 6th Avenue S
	Ballard Organics	2028 21st Avenue S
	City of Seattle	2700 Airport Way S
	Colorado Building	5021 Colorado Avenue S

Stormwater Basin	Facility Name	Address
	ConGlobal Industries	1 S Idaho Street
	Davis Door Service, Inc.	2021 S Grand Street
	John Perrine Co.	820 S Adams Street
	Plymouth Poultry	4500 7th Avenue S
	Seattle Barrel Company	4716 Airport Way S
	Twinline Motorcycles LLC	2106 S Holgate Street
S River Street SD	Commercial Floor Distributors, Inc.	210 S River Street
Slip 4	Boom Boys Cranes LLC	7400 8th Avenue S
	Essential Baking Company	1001 S Myrtle Street
	Heko Services, Inc.	7400 8th Avenue S
SW Idaho Street SD	Aquatic Enterprises, Inc.	4101 West Marginal Way SW
SW Kenny Street SD	Emswiler Construction	6045 West Marginal Way SW
7th Avenue S SD	All Metal Arts Seattle	7800 7th Avenue S
	Tours Northwest	8221 7th Avenue S

3.1.2 Ecology NPDES Inspections

Ecology issues NPDES permits for some businesses in the LDW. While the permits limit and control the discharge of a number of water quality pollutants, they do not necessarily control contaminants that pose a threat to sediments, such as PCBs, phthalates, arsenic, mercury, and PAHs. As of September 2010, Ecology has approximately 90 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. Approximately 10 new NPDES ISGP applications are currently on hold due to a Pollution Control Hearings Board (PCHB) stay on new permit issuance. These new permit applications will be processed and issued after PCHB makes a final ruling on the ISGP appeal, expected sometime in April or May 2011.

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 (see Section 3.1.3 below) 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.

3.1.3 Urban Waters Initiative

The Urban Waters Initiative, a component of the Puget Sound Initiative, proposed 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, and
- 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 has provided a list to Ecology of King County Industrial Waste (KCIW) permittees in the LDW. Between July 2009 and September 2010, KCIW submitted 15 surveys to industries in the LDW basin. In addition, KCIW investigators conducted four inspections and issued one discharge authorization and one zero discharge permit based on Ecology or SPU referrals (Tiffany 2010).

The multiple-agency team continued to hold monthly meetings to coordinate inspections and cross-train during this reporting period. The number of referrals, follow-up inspections, and resulting enforcements is presenting a significant challenge to the WQ inspectors.

Between July 2009 and September 2010, the Ecology inspectors conducted over 200 inspections at 153 facilities within the LDW source area, as listed in Appendix C (Gray 2010, Wright 2010a, 2010b, Best 2010). Inspections were conducted at a variety of business types including: wholesale/retail, chemical formulators, vehicle/equipment repair, machine shops, transportation-related businesses, electronics repair, printers, and boat/ship repair and manufacturing.

Between January 2008 and July 2010 (the most recent data for which statistics were available at the time this Status Report was prepared), Ecology inspectors issued 55 certified warning letters, eight Notices of Violations (NOVs), four Administrative Orders, four financial penalties, and issued NPDES permits to 25 previously unpermitted facilities (Wright 2010a).

Examples of source control activities that resulted from these inspections include (Wright 2010b):

- A penalty and settlement agreement at FogTite resulted in construction of a covered work area, installation of a stormwater treatment system, upgrade of the Stormwater Pollution Prevention Plan (SWPPP), and consistent monitoring. This was a follow-up to a referral from an SPU business inspection.
- An Immediate Action Order was issued to control and clean up an ammoniacal copper zinc arsenate (ACZA)-treated lumber storage yard at Marine Lumber Services. High

concentrations of arsenic, copper, and zinc found in the paved storage yard were migrating offsite. The facility moved treated lumber to another yard with better controls, and cleaned up or sealed existing ACZA staining on pavement.

- Jorgensen Forge implemented 80 percent of significant corrective actions noted in an inspection report. A pressure wash station was removed, covers were installed for all scrap metal dumpsters and bins, containment was provided for all petroleum containers stored outside, and scrap metal piles were moved under cover.
- Alaska Copper Works installed double-walled fuel tanks, downspout treatment, covered containment, cover for scrap metal bins, and increased sweeping frequency. This was a follow-up to a referral from an SPU business inspection.
- Stormwater treatment systems were installed at Independent Metals (Plant 2) and Puget Sound Coatings. This was a follow-up to a referral from an SPU business inspection.
- Closed-loop truck wash systems were installed at King County Biosolids and at the Waste Management Alaska Street Reload facility.
- At Seattle Lighthouse, the dust collection baghouse was completely enclosed.
- Standard Steel installed downspout treatment and catch basin filter inserts.
- The Gear Works converted to plastic gutters and downspouts, and installed a stormwater treatment system.
- At Icicle Seafoods (formerly known as Smoki Foods), a fish pump system was reconfigured to pump fish and wastewater directly inside the processing building. The ice-melt pad was upgraded to eliminate wastewater flow to the LDW.
- A penalty issued to Selland Auto Transport resulted in secondary containment for all waste oil drums and consistent monitoring.
- Glacier Northwest (CalPortland) installed proper secondary containment for all drums and totes of chemicals and petroleum products/wastes.

3.1.4 Surface Water Quality Complaints

Between July 2009 and September 2010, SPU inspectors responded to 67 surface water quality issues in the LDW study area. Water quality concerns are reported either through SPU's hotline number for citizens (206-684-7587), or from internal or external agencies. The most common water quality issue involved automobile-related fluids such as gasoline, diesel, oil, and antifreeze (30 percent). The remaining issues involved a variety of materials that included wash water, sewage, sediment, chemicals (paint, solvent, acid), and general flooding.

3.2 Source Tracing

Source tracing activities include identification and assessment of potential sources of contaminants to the LDW through the drainage/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)
- CSO water and in-line solids sampling (King County)
- Sampling of metal recycling industrial users (King County)
- 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.

In this document, values described above (SQS/CSL, LAET/2LAET, and MTCA Method A) 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 new interagency agreement was signed in September 2010 to facilitate collection of additional sediment trap, in-line, and catch basin samples. The new agreement includes 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 selected residential areas within the LDW basin (Ecology 2010o).

Source tracing sample locations are shown on Figure 3-2. Sampling results for the current reporting period are provided in Appendix D, and complete sampling results are presented in SPU's *December 2010 Progress Report* (SPU 2010). Results are discussed as relevant in subsequent sections for the source control areas in which they are located.

3.2.1 Outfall Survey and Sediment Sampling Study (Ecology)

Approximately 250 outfalls were identified within the LDW study area, based on a comprehensive survey of outfall or outfall-like structures terminating in the LDW conducted in 2004 by SPU, information from the LDW RI, and updated information from Ecology, EPA, the City of Seattle, the City of Tukwila, the Port of Seattle, King County, and Boeing. The July 2007 Source Control Status Report listed 39 "unknown" outfalls. Of these, 17 have been resolved and are now identified as private outfalls, abandoned outfalls, or in some cases were determined not to be an outfall based on subsequent investigation. A total of 22 outfalls are currently identified as a "pipe of unresolved origin and/or use." The source of discharge, if any, to these outfalls needs to be determined; this is considered a source control action item (Table 3-1).

Ecology is currently conducting an outfall survey and sediment sampling study, which includes updating the inventory of LDW outfalls, adding information on NPDES permits and available sampling data associated with each outfall, and collecting and analyzing LDW surface sediment samples in the vicinity of outfalls for which no sediment data had previously been collected. This study is expected to be completed in August 2011.

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 Ave 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 (July 2009 through September 2010), sediment trap samples were collected in the following areas (Figure 3-2):

Outfall	No. of Traps	No. of Samples
KC Airport SD#3/PS44 EOF[a]	9	11
I-5 SD at Slip 4	1	2
KC Airport at Jorgensen SD	1	1
KC Airport SD#2	1	1
Norfolk CSO/EOF/SD	5	5

a - SPU collected two rounds of samples at three traps and Boeing collected one round of samples at seven traps.

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

In addition, four sediment trap samples collected in the Duwamish/Diagonal CSO/SD basin in April and May 2010 were analyzed for dioxins. Total dioxin/furan toxic equivalent (TEQ) concentrations ranged from 2.0 nanograms per kilogram (ng/kg) at ST3 to 87.2 ng/kg at ST1.

Under Ecology's updated 2010 interagency agreement with SPU, additional sediment trap samples will be collected between September 2010 and June 2011 in the following areas:

- Central KCIA (four locations);
- 1st Avenue S SD (four locations);
- 7th Avenue S SD (three locations);
- S 96th Street SD (three locations);
- SW Idaho Street SD (three locations);
- Highland Way SW SD (two locations);
- SW Kenny Street SD/T115 CSO (one location);
- Hamm Creek (one location).

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 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 was available for chemical analysis.

Between January 2002 and September 2010, SPU collected a total of 187 in-line solids samples, 153 onsite catch basin samples, and 157 right-of-way catch basin samples from various locations in the LDW study area (SPU 2010). Collection of 124 of these samples was funded by an Ecology interagency agreement in 2009-2010. SPU will collect an additional 65 in-line and catch basin samples as part of the 2010-2011 interagency agreement. Results for all 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 (July 2009 through September 2010) is also shown. Results specific to each source control area are discussed in Sections 4 through 27.

LDW East Side	No. Samples Jul 09 – Sep 10	LDW West Side	No. Samples Jul 09 – Sep 10
S Nevada Street SD	0	SW Idaho Street SD	0
Diagonal Avenue S CSO/SD	16 (a)	SW Dakota Street SD	2
S River Street SD	0	SW Kenny Street SD	1
S Brighton CSO/SD	6 (b)	Highland Way SW SD	0
S Myrtle Street SD	4	1st Avenue S SD	2
S Garden Street SD	3	2nd Avenue S SD	4
KCIA SD#3/PS44 EOF	0	7th Avenue S SD	3
I-5 SD at Slip 4	0	8th Avenue S CSO	8
16th Avenue S SD	0	S 96th Street SD	0
KCIA SD#2/PS45 EOF	2	Hamm Creek	0
KCIA-Jorgensen SD	0		
KCIA SD#1	0		
Norfolk CSO/SD/PS17 EOF	5 (c)		

(a) 11 samples were collected from catch basins plumbed to the separated SD system; five samples were collected from catch basins plumbed to the combined sewer system.
(b) All six samples were collected from catch basins plumbed to the separated SD system.
(c) All five samples were collected from catch basins plumbed to the separated SD 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.

The catch basin and in-line sampling has helped to identify a number of pollutant sources to the LDW (SPU 2010):

- Seattle Iron & Metals, 601 S Myrtle Street: arsenic, copper, mercury, lead, zinc, PCBs, bis(2-ethylhexyl)phthalate (BEHP);
- Seattle Barrel, 4716 Airport Way S and 4520 7th Avenue S: mercury;
- Former Sternoff Property, 7123 East Marginal Way S: PCBs;
- Chemithon, 5430 West Marginal Way SW: PCBs;
- Independent Metals (Plant 2), 816 S Kenyon Street: copper, lead, mercury, zinc, PAHs, BEHP, PCBs;
- Marine Lumber, 525 S Chicago Street: arsenic, copper, zinc.

3.2.4 CSO Sampling (King County)

In December 2009, KCIW published a data report summarizing aqueous sampling in CSO regulator stations or outfall structures within the LDW and East Waterway (King County 2009).

The data report covered data collection activities between September 2007 and April 2009. A total of 12 aqueous samples were collected from the following locations within the LDW basin:

- Michigan Street Regulator
- West Michigan Regulator
- Brandon Street CSO
- Duwamish Siphon, Forebay

The samples were submitted for analysis of PCB congeners, semivolatile organic compounds (SVOCs), metals, mercury, organochlorine pesticides, and conventional parameters.[4] Selected results are summarized below:

Analyte (units)	Michigan Street Regulator 5 samples (LDW East Side)	Brandon Street CSO 3 samples (LDW East Side)	West Michigan Regulator 1 sample (LDW West Side)	Duwamish Siphon, Forebay 3 samples (LDW West Side)
TSS (mg/L)	43.5 - 227	103 - 640	149	97 - 320
TOC (mg/L)	21.9 – 60.7	18.8 – 81	34.7	29.1 – 62.9
Total PCBs (ug/L)	0.040 – 0.14	0.072 – 0.46	0.013	0.032 – 0.14
Arsenic, total (ug/L)	1.4 – 2.9	1.9 – 7.0	1.8	2.4 – 8.1
Copper, total (ug/L)	14.9 – 76.3	53.3 – 279	24.7	51.3 – 80.7
Lead, total (ug/L)	13.6 – 49.9	22 – 157	12.4	14.2 – 96.4
Zinc, total (ug/L)	88.3 – 244	165 – 753	84.3	107 – 326
Mercury, total (ug/L)	0.039 – 0.26	0.042 – 0.43	0.015	0.051 – 0.16
Benzo(a)pyrene (ug/L)	0.058 – 0.27	0.061 – 0.37	ND	0.14 – 0.16
Chrysene (ug/L)	0.039 – 0.24	0.082 – 0.50	ND	0.042 – 0.18
Naphthalene (ug/L)	0.037 – 0.30	0.028 – 0.12	0.041	0.34 – 0.69
Phenanthrene (ug/L)	0.059 – 0.85	0.091 – 0.62	ND	0.13 – 0.25
Total LPAH (ug/L)	0.13 – 2.0	0.12 – 1.2	0.088	0.98 – 1.4
Total HPAH (ug/L)	0.13 – 2.6	0.53 – 4.1	ND	0.77 – 1.6
1,4-Dichlorobenzene (ug/L)	0.081 – 0.85	0.15 – 0.31	0.68	0.51 – 1.9
Phenol (ug/L)	0.052 – 0.48	0.98 – 1.5	ND	1.2
Butyl benzyl phthalate (ug/L)	0.26 – 1.2	0.33 – 0.74	0.35	0.72 – 0.88

ND = Not detected
TSS = total suspended solids
LPAH = low molecular weight PAH
mg/L = milligrams per liter
ug/L = micrograms per liter
HPAH = high molecular weight PAH

A data report that includes results of all sampling between September 2007 and January 2010 is planned for production in early 2011. This report will present data for a total of 42 samples plus field duplicates that have been collected and analyzed from the locations listed above.

[4] Not all samples were analyzed for all parameters; sample volume limited the possible analyses.

3.2.5 In-Line Combined Sewer Sediment Sampling in Brandon and Michigan Street CSO Basins (King County)

King County collected in-line sediment samples at three locations in the Brandon Street CSO basin in June 2010 and at one location in the Michigan Street CSO basin in June and December 2010 (Tiffany 2010). These samples were submitted to the King County Environmental Laboratory for the analysis of metals (including mercury), particle size distribution, PCBs, SVOCs, and TOC. Samples were also submitted to Axys Analytical Services (Sidney, BC) for dioxin/furan analysis. Validated data for all analyses were not available at the time this Status Report was prepared. Additional sampling is planned for 2011.

3.2.6 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 facility in 2010. As of September 30, 2010, one storm event sample had been collected from each of the following five industrial users:

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

The second storm event sample for each facility was collected by the end of 2010, beyond the cutoff date of this Status Report. A technical memorandum summarizing the sampling results will be completed in early 2011.

3.2.7 Accelerated Source Tracing Study (Ecology)

In September 2010, Ecology began an accelerated source tracing study to evaluate stormwater contaminant concentrations and identify potential sources in two LDW sub-basins. The study is intended to conduct simultaneous measurement of contaminant concentrations associated with stormwater discharges at eight locations in the S Snoqualmie Street and S Dakota Street sub-basins of the Diagonal CSO/SD basin during the 2010/2011 wet season. The study will assess the practicality and effectiveness of an “up-the-pipe” approach, where stormwater sampling data throughout a drainage sub-basin is used to prioritize further investigation of potential contaminant sources. The study will include collection of stormwater, filtered solids, sediment trap solids, and bedload solids during both storm and base flow conditions. A summary report is scheduled to be completed during summer of 2011.

3.2.8 Lateral Loading Study (Ecology)

Also in September 2010, Ecology began a stormwater lateral loading study to collect stormwater, storm drain solids, and flow measurements from four LDW storm drain lines representative of different land use types. These data will be collected during the 2010/2011 wet season, and will

be used to estimate lateral contaminant loadings from significant storm drain outfalls in the LDW. In addition, the study will correlate, to the extent possible, the results of inline sediment trap, filtered suspended solids, and catch basin solids data with stormwater data. The study will include collection of stormwater, filtered solids, sediment trap solids, and bedload solids during both storm and base flow conditions. A summary report is scheduled to be completed during summer of 2011.

3.2.9 Survey of PCBs in Building Materials (Ecology)

Ecology prepared a scope of work in September 2010 for a study to evaluate the potential contribution of building material sources to PCB concentrations in LDW sediments. According to the Draft Final Feasibility Study for the LDW (AECOM 2010), PCBs have been detected in 84 percent of storm drain solids samples collected in the LDW basin. In many areas of the LDW, source tracing efforts and business inspections have not identified a specific source of PCBs. The contribution of PCBs from building materials (primarily paints and caulks) to LDW sediments is not fully understood. The Ecology study will include collection of paint and building caulk samples in a representative storm drain basin, and if possible, will evaluate the potential contribution of these PCB sources to LDW sediments. The study will be conducted during November 2010 through April 2011, with a summary report scheduled to be completed in June 2011.

3.2.10 Bank Sampling (Ecology)

In September 2010, Ecology prepared a scope of work for a bank sampling study to characterize the shoreline along the LDW at 10 locations. Work was scheduled to be conducted during November 2010 through June 2011, and a summary report is scheduled to be completed in fall 2011.

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 September 30, 2010, Ecology and its contractors had conducted assessments of 456 properties in 17 source control areas (Table 3-4). These are shown in Figure 3-3. In addition, assessments have been conducted for approximately 377 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)
- Rhone-Poulenc (RM 2.9-4.4 East)
- Boeing Plant 2, including part of Jorgensen Forge (EAA-4)
- Boeing Former Electronics Manufacturing Facility (EMF)
- Slip 4 Early Action Area cleanup, including the Georgetown Flume outfall replacement

Ecology is managing the following sites under MTCA (as of September 30, 2010):

- Burlington Environmental (RM 1.2-1.7 East) – Draft Agreed Order dated February 2010
- 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 issued 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
- Duwamish Shipyard (RM 1.3-1.6 West) – Agreed Order signed July 2009
- Crowley Marine Services (EAA-3) – Agreed Order signed July 2009
- Industrial Container Services/Trotsky Property/Former Northwest Cooperage (EAA-2) – Agreed Order negotiations in progress
- Boeing Isaacson/Thompson (EAA-6) – Agreed Order negotiations in progress
- Douglas Management Company (EAA-2) – Agreed Order negotiations in progress
- Port of Seattle N Terminal 115 (RM 1.6-2.1 West) – Agreed Order negotiations in progress
- Duwamish Marine Center (RM 1.7-2.0 East) – Agreed Order negotiations in progress

In addition, Ecology contractors have 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

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: www.kingcounty.gov/CSOControl.

3.4.2 Spill Kit Incentive Program (SPU)

In 2004, SPU began a program offering free spill kits to local businesses that manufacture, store, use, or transport liquids as an incentive to improve onsite spill prevention and cleanup practices. This program is ongoing; during the current reporting period, 61 spill kits were distributed to business within the LDW study area (SPU 2010).

3.4.3 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's contractor continued to upload information into the database. The reporting function has not yet been developed. A publicly available version is planned, but at this time no date has been established.

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

Ecology has contracted with Science Applications International Corporation (SAIC) 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 will be given to those reviews that address specific action items as listed in Tables 3-2 and 3-3. These reviews are currently in progress (Ecology 2010o).

3.5 Source Control Area-Specific Activities

Based on results of the LDW Phase 1 RI, seven early action candidate sites were proposed. These 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.[5] 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 2009k, published in August 2009)

The current status report describes source control actions that were conducted from July 1, 2009 through September 30, 2010.

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 July 2009 and September 2010 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 or not the sediments it drains to need cleanup. Since the RI is still being developed and

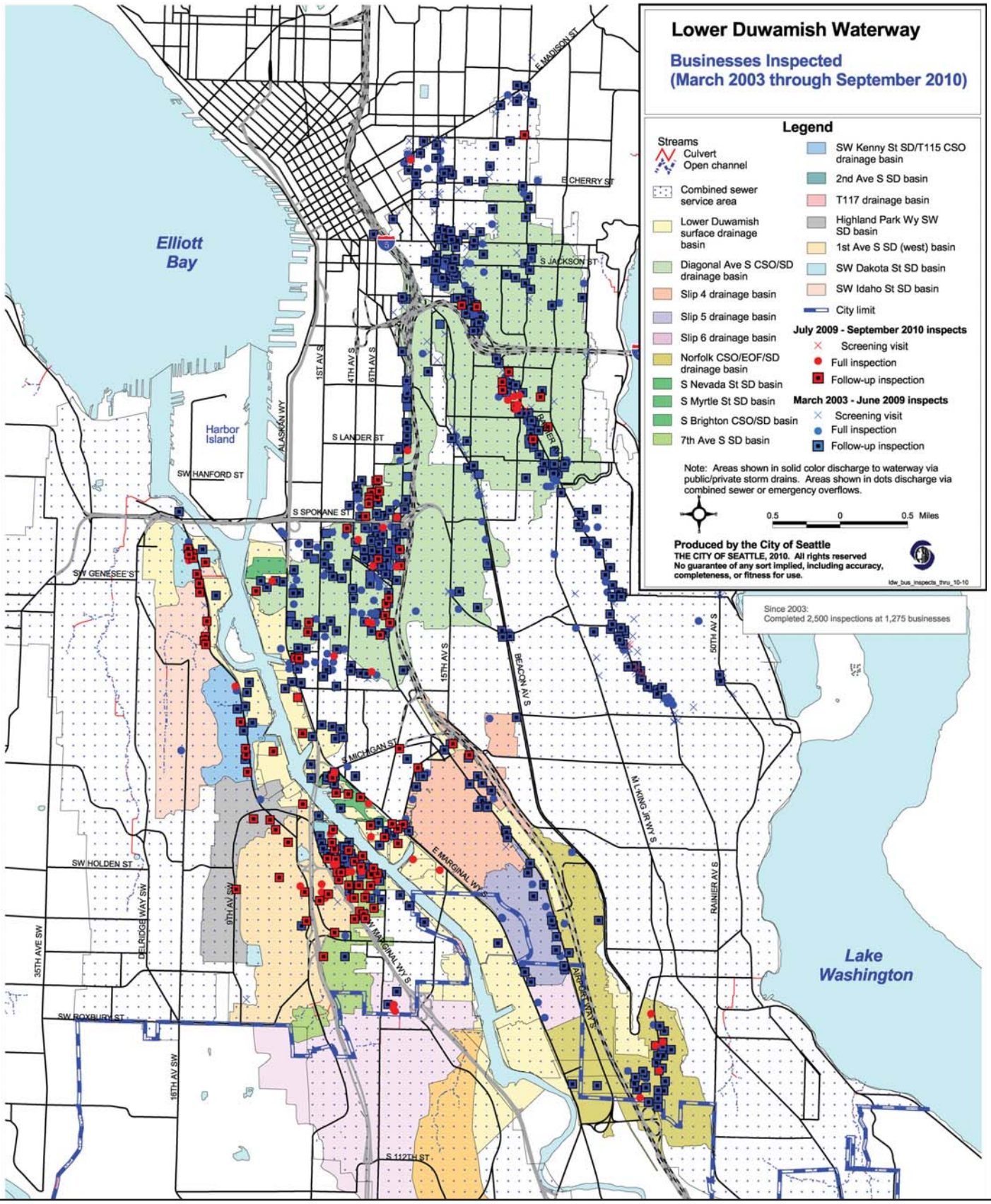
[5] http://www.ecy.wa.gov/programs/tcp/sites_brochure/lower_duwamish/lower_duwamish_hp.html

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 with completed SCAPs; 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.

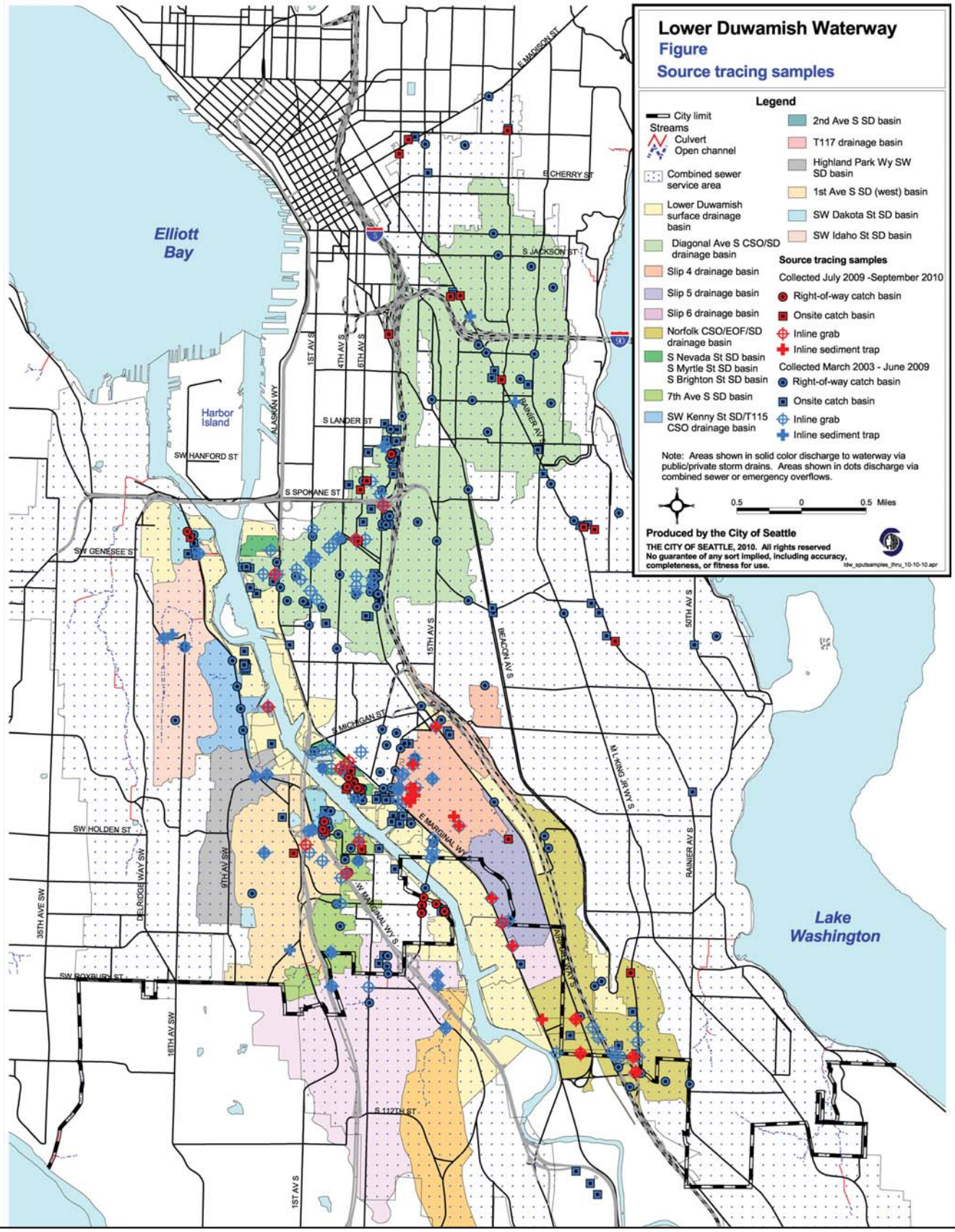
Site maps are presented for those Tier 2/3 source control areas with completed SCAPs; these maps are intended to help identify locations discussed in the text. Additional figures are available in the referenced reports.



DEPARTMENT OF ECOLOGY
State of Washington

Figure 3–1. SPU Business Inspections through September 2010

SAIC®
From Science to Solutions



DEPARTMENT OF ECOLOGY
State of Washington

Figure 3–2. Source Tracing Sample Locations through September 2010

SAIC® From Science to Solutions

DEPARTMENT OF ECOLOGY
State of Washington

Figure 3–3. Ecology Property Assessments Through September 2010

SAIC® From Science to Solutions

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	In Progress	Summer 2011	Ecology is currently updating and expanding the inventory of LDW outfalls, and will collect surface sediment samples near outfalls for which data are unavailable
Conduct sampling of bank soils and high intertidal sediments	Medium	Ecology	In Progress	Fall 2011	Ecology bank sampling study to begin Fall 2010
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	
Continue study of the air-to-stormwater-to-sediment contaminant pathway	Medium	City of Tacoma, City of Seattle, King County, Ecology, EPA	Ongoing	TBD	
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	
Monitor upland spills	Low	Ecology	Ongoing	NA	
Continue source control and NPDES inspections as needed within the LDW drainage basin	Medium	SPU, Ecology, KC	Ongoing	NA	
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		

	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	In Progress	2011		As of September 2010, follow-up inspections had been conducted at 11 of these facilities.
	Conduct initial inspections at properties/facilities identified in the Duwamish/Diagonal CSO/SD Data Gaps Report.	Low	New	SPU/Ecology	In Progress	2011		None completed as of September 2010.
	Remove accumulated sediment from the lower portion of the Diagonal Ave. 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	No further actions identified.
UPRR Argo Yard	Review existing information to assess the potential for sediment recontamination from this property	Low	SCAP	Ecology, SPU, UPRR	Complete	--	Dec-05	Refer to King County for Site Hazard Assessment; source control staff will remain vigilant for evidence of contaminant infiltration.
	Conduct Site Hazard Assessment	Low	Follow-On	King County	Planned	TBD		
Terminal 108	Conduct groundwater investigation to quantify levels of COCs in groundwater, obtain information about groundwater flow, and assess the potential for sediment recontamination	Medium	SCAP	Port of Seattle	Complete	--	Oct-07	
	Develop work plan describing source control strategy to be implemented	Medium	New	Port of Seattle	Complete	--	Feb-08	
	Develop Environmental Conditions Report; identify data gaps	Medium	New	Port of Seattle	Complete	--	Jan-09	Develop Source Control Strategy Plans for Eastern and Western parcels.
	Develop Source Control Strategy Plan for Western parcel	Medium	New	Port of Seattle	Complete	--	Oct-09	
	Develop Source Control Strategy Plan for Eastern Parcel	Medium	New	Port of Seattle	In Progress	Mar-11		

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
	Implement appropriate source control actions	Medium	New	Port of Seattle	Planned	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.
	Sample and remove PCB-contaminated building materials, including interior paint, as needed.	High	New	EPA/Property Owner	In Progress	2011		
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	SPU inspection conducted on May 27, 2010, with follow-ups on September 1 and September 15, 2010. Facility in compliance at that time. 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		

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 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	Ecology WQ inspection on August 12, 2010; SPU follow-up on September 28. Facility in compliance at that time.
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	Planned	TBD		
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		
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 LUST 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	2011		
	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		As of September 2010, one of these 18 facilities had obtained a CNE exemption.
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	

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

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Collect 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 right-of-way catch basin samples and one onsite catch basin sample were collected during the current reporting period.
	Conduct business source control inspections/re-inspections to verify that facilities comply with applicable regulations and BMPs and to conduct source control, as needed	Medium	SCAP	SPU, Ecology	In Progress	2011		Continue business inspections/reinspections as needed. During the current reporting period, SPU inspected nine facilities; two remain out of compliance.
	Review responses to CERCLA 104(e) letters by Wells Trucking and Leasing, Inc. and Ferguson Enterprises, Inc.	Low	New	Ecology, EPA	Planned	2011		
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	Planned	2011		
	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
	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.
	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 [4092] and Supplemental Data Gaps Report [4093].
	Conduct cleanup as needed to eliminate sources of contaminants to EAA-2; negotiate Agreed Order.	Medium	SCAP	Property owner/operator, Ecology	In Progress	2011		Agreed Order negotiations in progress as of September 2010.
	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

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 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.
	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	Planned	TBD		Action item identified in Supplemental Data Gaps Report.
	Verify storm drainage pathway on the southern portion of the property.	Medium	SCAP	Ecology/SPU	In Progress	2010		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	2010		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.
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	Supplemental Data Gaps report prepared [2331]; additional action items 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.
	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)	Low	New	SPU/Ecology	Planned	TBD		Action item identified in Supplemental Data Gaps Report.

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

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
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 / Alaska Logistics	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	
	Review CERCLA 104(e) responses submitted by Crowley Marine Services, Inc. and Samson Tug & Barge Company, Inc.	Medium	New	Ecology, EPA	Planned	2011		
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	

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
	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	2011		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	In Progress	Jan-11		To be done as part of Agreed Order No. DE-5685 (see NBF-GTSP below).
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	In Progress	2011		To be done as part of Agreed Order No. DE-5685 (see NBF-GTSP below).
	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	2011		To be done as part of Agreed Order No. DE-5685 (see NBF-GTSP below).
	Slip-line and/or replace sections of the north storm drain line to reduce the potential for PCB transport to Slip 4	High	New	Boeing	Complete	--	Mar-08	
	Characterize the extent of PCBs in soil adjacent to the north drain line	High	New	Boeing	Complete	--	Nov-07	
	Clean Oil/Water Separator 640 and catch basins	High	SCAP	Boeing	Complete	--	Aug-06	
	Clean out catch basins	High	SCAP	Boeing	Complete	--	--	Continue source tracing in north drain line
	Review results of Ecology's TCP, Waste and Water programs, and King County/Hazardous Waste Inspections of NBF (Nov -Dec 2005)	Medium	SCAP	Ecology, EPA	Complete	--	Feb-07	
	Revise Stormwater Pollution Prevention Plan; conduct additional inspections of the NBF facility as necessary	Medium	SCAP	Ecology, Boeing	In Progress	2010		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	In Progress	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

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 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
	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 (CMS) 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 (DSOA) Interim Measure	High	SCAP	EPA, Ecology, Boeing	In Progress	TBD		
	Remove contaminated bank fill material	High	SCAP	EPA, Boeing	Planned	TBD		
	Conduct monthly sampling, including groundwater sampling and vapor sampling of the DDC wells and multiple points along the vapor treatment system	Medium	SCAP	EPA, Boeing	In Progress	TBD		
	Continue quarterly shoreline groundwater monitoring	High	SCAP	EPA, Boeing	In Progress	TBD		
	Re-evaluate the SWPPP and make necessary changes if process/operational changes are made at Plant 2	Low	SCAP	Ecology, Boeing	Ongoing	TBD		
	Excavate PCB-contaminated soil in the substation area (southwest corner of Plant 2)	High	New	Boeing, Jorgensen	Planned	TBD		
	Address removal of materials containing PCBs, including joint caulk material	High	SCAP	EPA, Boeing	In Progress	2010		Characterization of caulk in concrete pavement completed in October 2008; work plan for caulk removal/stabilization to be prepared following EPA approval of characterization report.
	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		

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 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	TBD		
	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	Planned	TBD		To be completed under Agreed Order No. DE-4127 (see above).
	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.
	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 NOV 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	In Progress	TBD		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	Planned	TBD		
	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	TBD		
	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 (AOC) 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		

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
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		
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.
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	Planned	May-12		Sediment removal to begin with spring low tides in May 2012.

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

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	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		
	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	2010		
	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	2010		
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	

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 6 (RM 2.7-2.9 East; Boeing Isaacson/Central KCIA)								
KC Airport SD #2/PS45 EOF (King County Storm Drain / Seattle Public Utilities [SPU] Emergency Overflow [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 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.
	If COCs are present in the storm drain line, conduct source tracing to identify potential contaminant sources at KCIA.	High	SCAP	King County, SPU	In Progress	2011		Sediment trap sample during current reporting period 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	In Progress	2011		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	2011		Ecology inspection conducted March 2009.
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	2010		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	2010		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	2010		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	2010		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	2010		
	Clarify the purpose, function, and configuration of the edge drains along the Boeing Isaacson shoreline.	Low	SCAP	Boeing, Port of Seattle	In Progress	2010		

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

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Collect stormwater solids samples from the catch basins on the Boeing Isaacson property that drain to the Boeing Thompson stormwater system.	Medium	SCAP	Boeing	Planned	2010		
	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	2010		
	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	2010		
	Collect storm drain solids samples from the Boeing Thompson stormwater system to assess concentrations of contaminants.	Medium	SCAP	Boeing	Planned	2010		
	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	2010		
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	TBD		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.
	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	In Progress	2011		Eastern and western airport catch basins were cleaned in 2008 and 2010, respectively. The central portion, which includes runways and taxiways, is planned for cleaning in 2011.
	Determine the presence or absence of PCB-containing joint caulking material within the central KCIA drainage basin.	High	SCAP	King County	In Progress	TBD		Sediment trap samples collected in March 2009 indicated a total PCB concentration of 0.057 mg/kg. Grab samples showed no detections of PCBs.
	Conduct a follow-up inspection at United Parcel Service (UPS) Boeing Field to verify that corrective actions have been taken with regard to elevated copper and zinc in stormwater.	Low	SCAP	Ecology	Planned	TBD		
	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 (LUSTs) 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.

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

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
	Conduct a follow-up inspection at 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	In Progress	2011		
	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		
	Conduct further source tracing and sampling within the Norfolk CSO/SD	Medium	SCAP	Ecology, property owners	In Progress	TBD		Sediment traps installed at five locations; four rounds of sampling conducted as of September 2010.
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 collected in September 2009 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	In Progress	TBD		Completed further pressure washing of storm drain line from Vortechnics unit upstream toward and beneath Building 9-101.
	Continue monitoring storm drain solids	High	SCAP	Boeing	In Progress	TBD		PCB concentrations declining. Solids samples collected upstream (33 mg/kg DW PCBs) and downstream (16.2 mg/kg DW PCBs) of Vortechnics sediment trap unit in September 2009. Additional sampling scheduled for Fall 2010.
	Determine need for cleanup of PCB-containing caulk and other building materials	Medium	SCAP	Ecology, Boeing	Planned	TBD		
	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	Planned	TBD		
	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	Planned	TBD		
Military Flight Center (MFC)	Conduct testing to assess the effectiveness of removal of PCB-contaminated material; provide caulk removal and testing reports to Ecology	Medium	SCAP	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
	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		
	Conduct inspection to ensure that pollution prevention practices are adequate and the facility is in compliance with its stormwater permit	Low	SCAP	Ecology	Planned	TBD		
	Monitor stormwater for PCBs at discharge points to assess potential ongoing sources	Medium	SCAP	Boeing	Planned	TBD		
	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.
	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.
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	Planned	TBD		
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 a NPDES permit and SWPPP are required	Low	SCAP	Ecology	Not Required	--	Jul-07	Not required; 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
	Obtain information pertaining to the storm drain system from Northwest Auto Wrecking to assess potential historic and ongoing sources	Low	SCAP	Ecology	Complete	--	2005	Business has closed; property is vacant
	Determine whether the storm drain system connects to the Norfolk CSO/SD	Medium	SCAP	Northwest Auto Wrecking	Complete	--	2005	Business has closed; property is vacant
	Once a new business is operating at this site, conduct a facility inspection to assess the potential for sediment recontamination associated with this property	Low	Follow-On	Ecology, city of Tukwila, KCIW	Planned	TBD		
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	n item identified in a SCAP
Follow-On	w-on to an action item identified in a SCAP
New	ntified 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 (HMCC) / 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 HMCC.	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	
	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	2011		
	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	Jun-11		
	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	Jun-11		
	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		

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
Manson Construction Company	Obtain laboratory data and site plans from historical site assessment(s) and remediation performed at the property. Confirm that satisfactory completion of soil cleanup activities was achieved. Determine if arsenic or other sediment COCs are present in soil and groundwater beneath the facility at concentrations that may recontaminate sediments.	High	SCAP	Ecology	Planned	TBD		
	If satisfactory soil cleanup was not achieved, require the property owner/operator to conduct a site assessment to determine residual concentrations of sediment COCs in soil and groundwater beneath the property.	High	SCAP	Ecology	Planned	TBD		
	Collect additional samples from Seep 76 to determine if the arsenic concentration reported in 2004 was an anomaly. Analyze sample for all sediment COCs.	High	SCAP	Ecology	In Progress	Jun-11		
	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	Jun-11		
	Review responses to EPA’s Request for Information 104(e) letter sent to Manson Construction in July 2008.	Medium	SCAP	Ecology	Planned	2011		
	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 1.2-1.7 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	2011		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	Planned	Dec-11		
	Sample catch basins as needed.	Medium	SCAP	Ecology, SPU	Planned	Oct-10		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	2011		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	Oct-10		
	Sample catch basins as needed.	Medium	SCAP	Ecology, SPU	Planned	Oct-10		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	Jun-11		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	Oct-10		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	Oct-10		
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-5296 for eastern portion of site issued by Ecology in February 2010.
	Implement Cleanup Action Plan as specified in Agreed Order and Dangerous Waste Permit.	Medium	Follow-on	PSC	Planned	Dec-14		
Art Brass Plating	Complete interim action and RI in accordance with Agreed Order.	Medium	SCAP	Art Brass Plating	In Progress	Dec-14		
	Conduct a source control inspection to confirm compliance with regulations/permits and implementation of BMPs.	Medium	SCAP	Ecology, King County	Planned	Oct-10		
Blaser Die Casting	Complete RI in accordance with MTCA Enforcement Order.	Medium	SCAP	Blaser Die Casting	In Progress	Dec-14		Enforcement Order DE-5479
Capital Industries Inc.	Complete RI report in accordance with Agreed Order.	Medium	SCAP	Capital Industries	In Progress	Dec-14		Agreed Order DE-5348
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	Sep-11		
	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	Dec-10		King County conducted in-line solids sampling in the Michigan CSO basin. Validated data were not available as of the end of the current reporting period (September 2010).
	Conduct business inspections within the Michigan Street CSO basin to identify undocumented industrial operations, if any, that may represent sediment recontamination sources.	Low	SCAP	SPU	Planned	Dec-11		
	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		

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
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	2011		
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	2011		
Seattle Biodiesel	Conduct a follow-up source control inspection to verify compliance with Ecology recommendations and applicable regulations/codes.	Medium	SCAP	Ecology	Planned	TBD		
	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	2011		
Duwamish Marine Center	Conduct a follow-up source control inspection at Duwamish Marine Center to verify compliance with applicable regulations/code and implementation of appropriate stormwater BMPs.	Medium	SCAP	Ecology, SPU	Planned	TBD		
	Conduct a follow-up business inspection at Samson Tug and Barge to verify compliance with corrective actions requested by SPU in July and October 2008. Also verify that the cleaning solution tank belonging to Burgess Enterprises has been removed.	Medium	SCAP	SPU	Planned	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.	High	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
	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	2011		
	Require the property owner/operator to collect data on concentrations of chemical contaminants in river bank soils to assess the potential for sediment recontamination by erosion.	High	SCAP	Ecology	Planned	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	2011		
Seattle Department of Transportation Parcel	Complete discussions with the adjacent property owner to prevent parking and vehicle maintenance on the Seattle DOT 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	Dec-10		
	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	2011		
Fittings, Inc.	Determine whether this facility should apply for coverage under the Industrial Stormwater General Permit	Medium	SCAP	Ecology	Planned	TBD		
Former Consolidated Freightways	Conduct a site inspection to identify whether activities along the western edge of the property (in the area that drains to Slip 2) could be a source of sediment recontamination via stormwater discharge.	Low	SCAP	Ecology, SPU	Planned	TBD		
	Locate and review the results of soil and groundwater sampling proposed in 2000 (if the sampling plans were implemented), and assess the potential for sediment recontamination via groundwater transport.	Medium	SCAP	Ecology	Planned	TBD		
	Search for additional information regarding the two dump areas located at this property in 1940, as identified in historical aerial photographs, and evaluate the potential for sediment recontamination associated with these areas.	Medium	SCAP	Ecology	Planned	Dec-10		

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

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
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	Dec-10		
	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	Dec-10		
	Kelly Moore Paint Company: Determine the current status of cleanup efforts to evaluate whether additional remedial activities are required.	Low	SCAP	Ecology	In Progress	Dec-10		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	Dec-10		
	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	Dec-10		
	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	Dec-10		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 six source tracing samples in this basin during the current reporting period.
	Review VCP files pertaining to four former facilities at South Seattle Community College (Arrow Transportation, Inland Transportation Company, Ben's Truck Repair, and Hat n' Boots Gas Station). Investigate the South Seattle Community College property to determine what cleanup actions may have been conducted during development, and whether potential sources of sediment recontamination may remain onsite from the four former facilities.	Medium	SCAP	Ecology	Planned	TBD		

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
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	2011		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	2011		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	2011		
	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	2011		
	Determine whether a UST may have been removed from the property without a proper closure.	Medium	SCAP	Ecology	Planned	TBD		
	Conduct a source control inspection to verify compliance with applicable regulations/codes	High	SCAP	SPU, Ecology	Complete	--	May-09	SPU inspections conducted on March 19 and May 5, 2009. Facility in compliance with applicable codes and regulations.
	Locate and review additional reports related to V. Van Dyke property that are missing from Ecology's files.	Medium	SCAP	Ecology	Planned	Oct-11		

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
	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	2011		
	Conduct a source control inspection to address the two former shop building floor drains, determine if storm drain lines between the shop building and office building pass through areas where contaminated soil has been excavated, and conduct in-line storm drain sampling as needed.	High	SCAP	Ecology, SPU	Planned	TBD		
	Determine the status of cleanup at the facility and whether to pursue additional investigation and cleanup under an administrative order.	Medium	SCAP	Ecology	Planned	TBD		
Shultz Distributing	Conduct a source control inspection to verify compliance with applicable regulations/codes, determine whether storm drain lines pass through the area of chlorinated solvent groundwater contamination near the tank farm, determine whether the storm drains discharge to the S Brighton Street CSO/SD, confirm that the pump was removed from the oil/water separator, and that stormwater now discharges to the municipal storm drain system.	High	SCAP	SPU, Ecology	Complete	--	Aug-10	SPU inspection conducted on August 18, 2010; facility in compliance.
	Conduct in-line storm drain sampling to evaluate whether COCs are migrating to LDW sediments via the Shultz Distributing storm drain system.	High	SCAP	SPU, Ecology	Complete	--	Aug-10	One on-site CB sample, three right-of-way CB samples, and two in-line samples conducted in this area; metals, PCBs, PAHs, phthalates, and other SVOCs above screening levels.
	Review AGI's results and conclusions and determine whether additional investigations should be conducted.	Medium	SCAP	Ecology	Planned	Nov-09		
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	2011		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	2011		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	2011		Identify additional source control actions as needed.
Rainier Petroleum	Review responses to EPA's CERCLA 104(e) letter sent to Rainier Petroleum Corporation in July 2008.	Medium	SCAP	Ecology	Planned	2011		Identify additional source control actions as needed.

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

Source Control Facility or Outfall	Action Item	Priority	Type	Responsible Party	Status	Estimated Completion Date	Date Completed	Comments/Follow-On Actions
Morton Marine Equipment	Review responses to EPA's CERCLA 104(e) letter sent to Morton Marine Equipment in March 2008.	Medium	SCAP	Ecology	Planned	2011		
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	2011		Three samples collected from S Garden Street SD and four samples collected from the S Myrtle Street SD during the current reporting period. Most were onsite catch basins at Seattle Iron & Metals.
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	2011		
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	2011		
	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	2011		

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	In Progress	TBD		
	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	2011		
	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	Planned	Jun-11		
	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	Jun-11		
	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.
	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	--	Sep-10	First Student needs coverage under ISGP; application was submitted and is currently on hold.
	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	May-11		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	2011		
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	In Progress	TBD		Ecology inspected Taxi King on October 20, 2009.
	Assist Svendsen Brothers with obtaining coverage under the Industrial Stormwater General Permit and KCIW discharge authorization or permit.	Medium	SCAP	Ecology, KCIW	In Progress	TBD		
	Perform a follow-up inspection at Taxi King to ensure that corrective actions identified in July 2008 have been implemented.	Medium	SCAP	Ecology, SPU	Complete	--	Sep-08	Follow-up inspection conducted 9/19/08; facility in compliance with applicable codes and regulations at that time.

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 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.
	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	Planned	2011		
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	2011		
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	1905		Draft Remedial Investigation Report submitted to Ecology on September 30, 2010.
	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	1905		
	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	2010		
	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	Planned	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.

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 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.
	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	Planned	TBD		
	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	Planned	TBD		
	Review the current SWPPP and make changes and additions necessary to prevent contaminants from entering the BDC stormwater system.	Medium	SCAP	Ecology, Boeing	Planned	TBD		
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	2011		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.

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
	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	2011		
	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	Nov-10		
	Upon approval of work plans by Ecology, conduct site investigations as specified	High	SCAP	Property owner/operator	Planned	May-12		
	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	2011		
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	In Progress	Mar-11		Draft Agreed Order No. 8099 dated 5/4/2010; final negotiations in progress as of 9/30/2010.

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 Remedial Investigation as specified in Agreed Order No. 8099	Medium	New	Port of Seattle	Planned	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		

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 September 2010

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)	In Progress	In Progress
RM 1.3-1.6 West (Glacier Bay)	11	0
RM 1.6-2.1 West (Terminal 115)	In Progress	In Progress
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 9/30/2010)	456	377

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	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)

- SAIC completed a Data Gaps Report for Duwamish/Diagonal CSO/SD basin in August 2009 (SAIC 2009c). The report reviewed information on 446 properties and facilities with Ecology Facility/Site Identification numbers to identify Confirmed or Suspected Contaminated Sites List (CSCSL), leaking underground storage tank (LUST), and underground storage tank (UST) properties and facilities in the Duwamish/Diagonal CSO/SD basin. SAIC determined that there are currently 65 properties on the CSCSL, and 38 facilities that hold NPDES permits and/or KCIW discharge authorizations or permits, located within the Duwamish/Diagonal CSO/SD basin. There are 83 LUST facilities, and 174 UST facilities within the Duwamish Diagonal CSO/SD basin.
- Data gaps and action items were identified for facilities within the Duwamish/Diagonal CSO/SD basin; new action items have been incorporated into Table 3-2 for the following facilities:
    - Alaskan Copper Works;
    - Bloch Steel Industries;
    - ColorGraphics;
    - Emerald City Bindery;
    - MacMillan-Piper, Inc.;
    - North Star Casteel Products, Inc.;
    - Pepsi Bottling Group – Seattle Plant;
    - Recycling Depot, Inc.;
    - Seattle Barrel & Cooperage;
    - Seattle Radiator;
    - Skyline Electric & Manufacturing Company; and
    - Western Peterbilt, Inc.

4.1 Business Inspections

- SPU continued conducting business inspections in the Duwamish/Diagonal Way source control area during the current reporting period (July 2009 through September 2010). A

total of 99 inspections were conducted at 54 facilities in the Diagonal Avenue SD basin (Appendix B), including five screening visits, 45 initial inspections, and 49 follow-up inspections. Of these, 14 facilities were identified by SPU as not in compliance as of the end of September 2010:

- 7-Eleven Store #2360-24497C;
- Atlantic Veterinary Hospital;
- Ballard Organics;
- City of Seattle – OCC;
- Copiers Northwest, Inc.;
- Dilettante Chocolates;
- Georgetown Brewing Co.;
- Grease Monkey #481;
- McKinstry Company;
- Skyline Electric & Manufacturing Company;
- True Fabrications;
- Twinline Motorcycles LLC;
- Union Pacific Railroad; and
- WSDOT (450 S Spokane Street).

- SPU conducted 17 inspections at 11 facilities in the Duwamish/Diagonal CSO basin, including one screening visit, eight initial inspections, and eight follow-up inspections (Appendix B). One facility (Starline, Inc.) was not in compliance as of the end of September 2010.

- During the current reporting period, SPU identified 10 facilities in the Duwamish/Diagonal Way source control area with illicit connections or discharges to the storm drain system (SPU 2010):

  - 3512 Airport Way S;
  - Alaskan Copper & Brass;
  - Ballard Organics;
  - City of Seattle – OCC;
  - Colorado Building LLC;
  - ConGlobal Industries;
  - Davis Door Service, Inc.;
  - Plymouth Poultry;
  - Seattle Barrel Company; and
  - Twinline Motorcycles, LLC.

- During the current reporting period, SPU referred six facilities within this source control area to other agencies:

  - Ballard Organics and Schooner Exact Brewing Co. (referred to KCIW and Ecology WQ);
  - Redox Inc. (referred to Ecology HWTR);
  - Franz Family Bakeries and Martin Luther King 76 (referred to Ecology WQ); and
  - Grease Monkey #481 (referred to KCIW).

- Ecology conducted 43 source control inspections at 36 facilities within this source control area during the current reporting period; these are listed in Appendix C. Ecology inspectors identified 10 facilities that need to apply for a CNE exemption or for coverage under the ISGP. Three of these subsequently applied for, and received, CNE exemptions.
- Sampling of storm drain solids during a 2009 inspection at ConGlobal (former Container Care) identified high total petroleum hydrocarbons (TPH), copper, and BEHP. The high copper concentrations may be associated with cleaning of heat exchange coils (Jeffers 2009a).
- A visible sheen and turbid discharge was observed near the park at the end of Diagonal Way on January 14, 2010 (Wisdom 2010a). SPU's complaint investigator identified the ConGlobal property as the likely source. The Port of Seattle vacated the Terminal 108 Western Parcel in spring of 2010 and temporarily disabled (plugged) the stormwater collection and conveyance infrastructure. The Port of Seattle plans to perform minor grading and hydro-seeding of unpaved portions of the Western Parcel as an erosion stabilization measure in spring of 2011 (Kuroiwa 2010b).

4.2 Source Tracing

- SPU has collected 63 sediment trap samples from six locations in the Diagonal Avenue 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 60 in-line solids grab samples, 50 onsite catch basin samples, and 54 right-of-way catch basin sample in the Diagonal Avenue SD basin. During the current reporting period, three in-line solids samples, seven onsite catch basin samples, and one right-of-way catch basin sample were collected in this drainage basin (Appendix D).
- In addition, SPU has collected 28 onsite catch basin samples and 12 right-of-way catch basin sample in the Duwamish/Diagonal CSO basin. During the current reporting period, five onsite catch basin samples were collected in this drainage basin (Appendix D).
- SPU has collected one inline 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 are presented in SPU 2010; 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			●	
	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

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

4.3 Facility-Specific Source Control Actions

Port of Seattle Terminal 108 / Former Chiyoda Property

Current Operations	The larger Eastern Parcel is leased to ConGlobal Industries for empty container and truck chassis storage and repair. The smaller Western Parcel (adjacent to river) 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 98108
Facility/Site ID	2344 (Chevron Seattle Terminal 4097)
Chemicals of Concern	PCBs, PAHs, cadmium, lead, chromium, petroleum hydrocarbons
Media Affected	Groundwater, soil

- The Port of Seattle submitted a *Terminal 108—Western Parcel Source Control Strategy Plan* to Ecology on October 30, 2009. The Strategy Plan proposes to address contaminant pathways by employing capital improvement projects and physical best management practices (BMPs) in the short-term, followed by longer-term implementation of regulatory compliance, Port-tenant coordination, and public outreach programs (Windward 2009).
- The Port of Seattle entered the Voluntary Cleanup Program (VCP) in the spring of 2010 to formalize interactions with Ecology on LDW Source Control efforts at Terminal 108 and a portion of T-106W (TCP Identification No. NW2268) (Kuroiwa 2010b).
- As described in Section 4.1, the Port of Seattle vacated the Western Parcel and temporarily disabled the stormwater collection and conveyance infrastructure. The Western Parcel will remain unoccupied while the Port evaluates long-term use options (e.g., habitat restoration and public access or return to commercial/industrial use) (Kuroiwa 2010b).
- The Port of Seattle is preparing a Source Control Strategy Plan for the T-108 Eastern Parcel, which currently comprises the entire footprint of existing tenant operation (ConGlobal). This document will be finalized in the spring of 2011. Based on the results of the Source Control Strategy Plan and subsequent implementation plan, the timing and responsibility for any identified actions will be developed at a later date (Kuroiwa 2010b).
- Ecology has determined that direct groundwater transport to the LDW from the site is not a likely source of contamination to sediments (Kuroiwa 2010b).

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

- A Data Gaps Report (SAIC 2008c) and SCAP (Ecology 2009c) prepared for the RM 0.9-1.0 East (Slip 1) source control area determined that stormwater from most of this property is discharged to Slip 1, within the RM 0.9-1.0 East (Slip 1) source control area (see Section 5.2). According to a 1976 GSA sewer map reviewed during preparation of the Slip 1 Data Gaps Report, stormwater in the northwest corner of the Federal Center South property drains to the LDW within the EAA-1 source control area.
- A Groundwater Monitoring Activities report was prepared in November 2008; this report was not available for review during preparation of the August 2009 LDW Source Control Status Report or during preparation of the current LDW Source Control Status Report. According to a 2009 Ecology letter (Ecology 2009m), oil-range petroleum hydrocarbons were not detected in well FC9. No additional information was available at the time this Status Report was prepared.
- In a letter dated October 21, 2009, Ecology determined that further remedial action is necessary to clean up contamination at the GSA Federal Center South facility, under 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 2009m). These are located in the northwest portion of the property, within the EAA-1 source control area.
- Ecology will require soil cleanup levels to be protective of worker direct contact, leaching to groundwater, and may require that they be protective of terrestrial wildlife (Ecology 2009m). Groundwater cleanup levels must be protective of surface water beneficial uses.
- Ecology and EPA conducted a source control inspection at the Federal Center South facility in August 2010 (Ecology 2010n). At that time, the 1202 building was being disassembled, and unidentified waste materials left behind by previous tenants were being collected, accumulated, and designated. Floor drains appeared to be scattered throughout Building 1201; facility representatives did not know where these structures terminated. The Ecology inspector postulated that these floor drains may be connected to the storm drain system, as they were located adjacent to internal roof rain gutters. Several pipes were also observed to be exiting the west side of Building 1201 and terminating on

the asphalt outside. The walls and asphalt near some of these pipes were stained, which may indicate a discharge.

- The following corrective actions were noted in Ecology's inspection report: properly designate and dispose of waste; properly store waste/product; properly dispose of waste; properly manage empty containers; improve or create spill response procedures; correct plumbing connections; maintain storm drains/clean out catch basins; and implement proper housekeeping (Ecology 2010n). No follow-up inspection had been conducted as of September 30, 2010.

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 milligrams per kilogram [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).

In January 2008, concentrations of PCBs were still elevated (8.4 to 189 mg/kg DW) in solids samples collected from catch basins on the north end of the property and from the catch basin on Airport Way S (2.3 mg/kg DW at RCB37). Storm drains were jetted and cleaned by the property owner, and catch basins in the portion of the property that drains to the Duwamish/Diagonal CSO/SD were cleaned in January 2008. At the same time, SPU jetted lines and cleaned catch basins downstream of this property along Airport Way S. SPU resampled RCB37 in 2009 and 2010, and PCB concentrations were relatively low (0.39 to 0.40 mg/kg dry weight [DW]).

<u>Storm Drain and Combined Sewer System:</u>

- In a letter dated August 13, 2009, from EPA to Rainier Commons, LLC, EPA expressed concerns about the Rainier Commons LLC scheduled site cleaning procedures. EPA determined that without revisions to the procedures, they will not be effective at reducing exposures to PCBs or eliminating the source of PCBs to the LDW (USEPA 2009a). EPA made the following recommendations:
    - Conduct sweeping of parking lot, roads, walkways, and sidewalks at least once per week;
    - Analyze material collected during each sweeping event for PCBs, for approximately 3 months, including dry and wet seasons;

- Inspect catch basin inserts on a weekly basis; remove and analyze material for PCBs when the insert fill level is reached;
- Use clothing or equipment to protect against dermal contact or inhalation of PCBs while conducting "cleaning" work.

- KCIW collected water samples for PCB analysis in 2008 from a manhole access point to a combined sewer line on the Rainier Commons property during three different sampling events: January 10, March 13, and June 3, 2008. Total PCBs, as the sum of detected Aroclors, were detected in two of three sampling events. Total PCBs were detected in composite samples at 0.062 ug/L (less than the reporting detection limit [RDL]) on March 13, 2008 and at 1.24 ug/L on June 3, 2008. KCIW then conducted in-line sediment sampling in the storm drain lines at Rainier Commons that connect to the combined sewer system on October 13, 2009. The two samples had total PCB concentrations of 178 mg/kg DW and 347 mg/kg DW. The PCB concentrations indicate that there are sediments in the onsite drainage system that represent an ongoing pollution source to the King County combined sewer system, specifically the King County Hanford Trunk which discharges to the East Waterway (KCIW 2010).
- Ariel Development contracted with Clean Harbors Environmental Services to conduct cleanout of catch basins, storm drain, sanitary sewer, and combined sewer lines, and a trench at the Rainier Commons property. The cleanout began on May 24, 2010 and consisted of flushing lines associated with catch basins located near the western property boundary (Clean Harbors 2010). Several of the lines appeared to be in poor condition. Approximately 1850 gallons of waste material was generated; a sample of this material contained 97.1 ug/L total PCBs and 7.42 mg/L lead (Clean Harbors 2010).

Building Material Sampling and Removal:

- In September 2009, EPA conducted sampling of exterior paint at Rainier Commons. Concentrations of 700 to 18,000 mg/kg PCBs were found in exterior paints. Due to various construction activities at the complex, it is possible that PCBs may be "tracked-in" to buildings due to dust and paint chip accumulation. This concern prompted EPA to recommend sampling of PCB concentrations on interior surfaces (Kissinger et al. 2010).
- The Washington State Department of Health (WDOH) conducted an initial health consultation in March 2010 to address questions about inhalation of PCBs in paint chip dust. The report concluded that accidental inhalation of paint chip dust while visiting or working at Rainier Commons was not expected to result in human health impacts; however, WDOH recommended additional sampling of building exterior paint (WDOH 2010). The health consultation did not address human health risks to residents of the development.
- In September 2010, EPA sent a letter to tenants of Rainier Commons; the letter summarized the results of indoor air and interior paint samples collected for the analysis of PCBs. EPA determined that PCBs were either not detected or found at extremely low levels in indoor air. While PCBs in paint samples exceeded the regulatory limit of 50 mg/kg in three of the 25 areas sampled, the likelihood of exposure to PCBs is considered very low (USEPA 2010c).

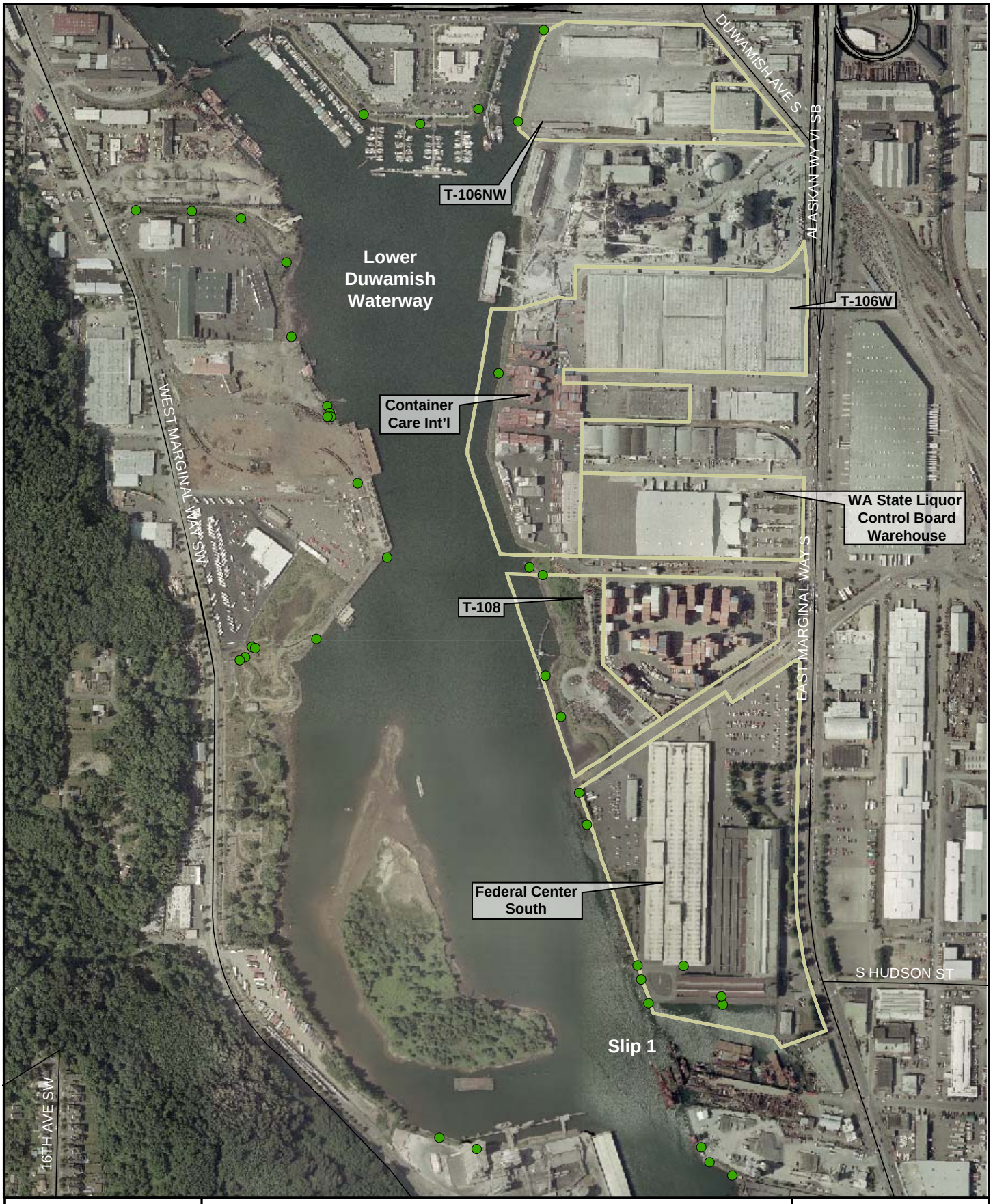
- EPA is working with Rainier Commons LLC on a plan to further assess and clean up areas where PCBs are found above 50 mg/kg. The following activities are planned (USEPA 2010c):
    - EPA will collect dust samples in the same areas where air and paint samples were taken (October 2010);
    - Rainier Commons LLC will remove paint from the stairwell inside Building 22, where PCBs in paint were measured at 22,700 mg/kg;
    - Rainier Commons LLC will develop proposals to address other areas of the buildings with PCBs above the regulatory limit of 50 mg/kg.
- Additional information is available from EPA's contacts for this project (Tristen Gardner, Renee Dagseth, and Lon Kissinger).

North Star Casteel

Current Operations	Steel foundry; chain manufacturing
Historical Operations	No information available
Address	820 S Bradford Street; 3901 9th Avenue S
Facility/Site ID	3294855; 11628955
Chemicals of Concern	Not specified
Media Affected	Soil

- At the request of Ecology and SPU, Adapt Engineering, Inc. (for North Star Casteel) collected soil samples in several areas on and surrounding the North Star Casteel property where potentially hazardous materials had historically been stored (Adapt 2009). The site is currently occupied by a foundry facility and a chain manufacturing facility. Soil samples were collected from nine locations, generally from the top 6 inches of soil, and were composited into five samples for analysis. Composite samples were analyzed for TPH, PCBs, PAHs, and metals. Motor oil-range petroleum hydrocarbons were detected at 440 mg/kg to 780 mg/kg in three of the five composite samples. PCBs were not detected. Carcinogenic PAHs (cPAH) and metals were detected at relatively low concentrations in all samples (Adapt 2009).
- SPU observed a large purple stain on the road shoulder near the North Star Casteel facility on March 26, 2010, in an area where a phenolic spill was observed in May 2008 (Ecology 2010f). The spill was likely composed of resin (Chem Rez 400 and Novaset HP Binder). The spill appeared to have been carried by rain to a gravel area, and forklift tracks through the spilled material were observed. Site managers cleaned the spilled area in the road shoulder and arranged for disposal of the material. The spill did not appear to impact any storm drains, but may have resulted in soil contamination due to infiltration in the gravel area (Ecology 2010f). SPU issued a NOV with penalty (Wisdom 2010b).

This page intentionally left blank.



Key

- Property Boundary
- Road
- Outfall

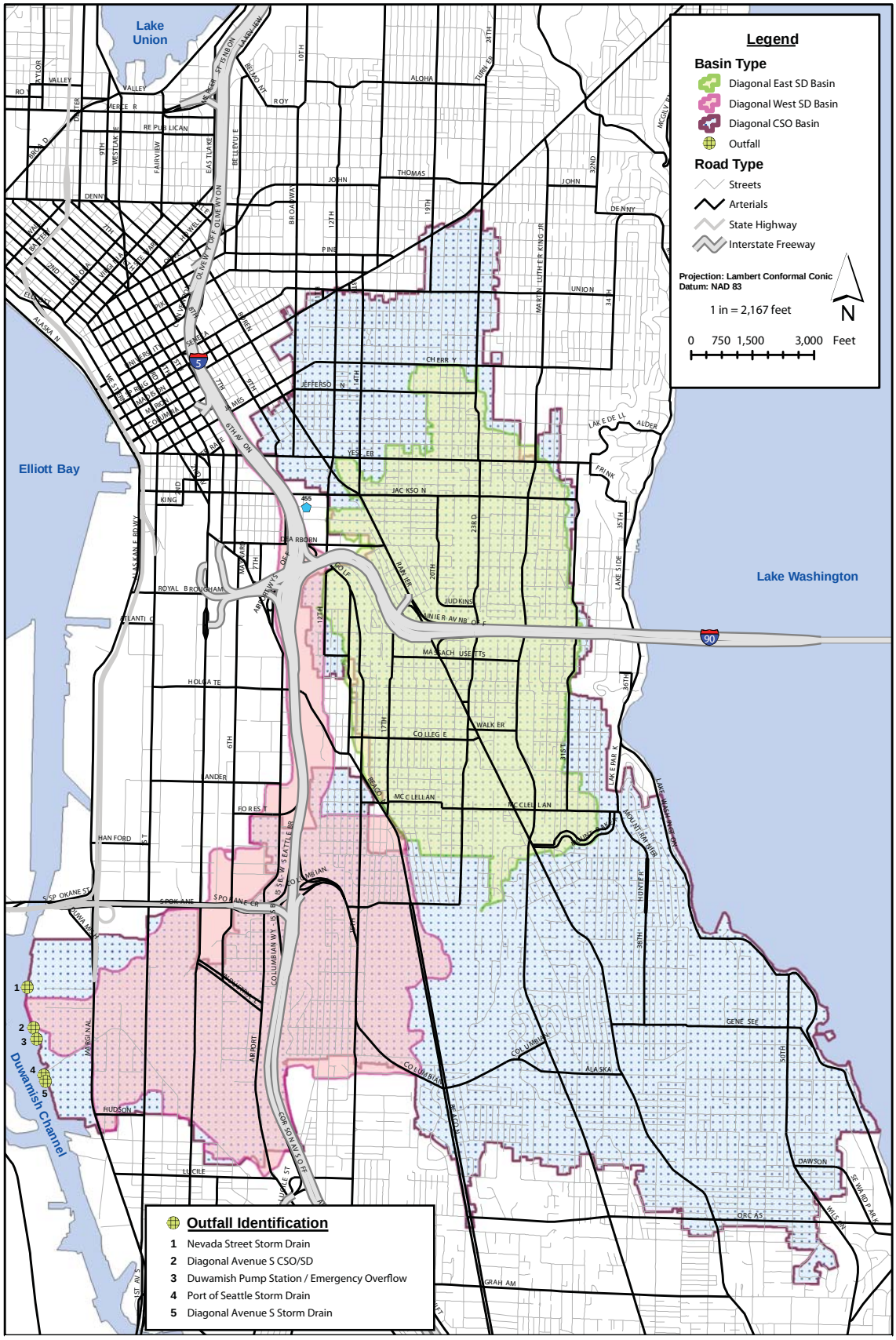
Figure 4–1. Early Action Area 1: Duwamish/Diagonal Way

0 225 450 900 1,350 1,800 Feet

WA State Plane
North, NAD83

SAIC From Science to Solutions

N



DEPARTMENT OF ECOLOGY
State of Washington

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

SAIC® From Science to Solutions

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 continued conducting business inspections in the Trotsky Inlet source control area during the current reporting period (July 2009 through September 2010). A total of 16 inspections were conducted at nine facilities (Appendix B), including nine initial inspections, and seven follow-up inspections. The following facilities were identified by SPU as not in compliance as of the end of September 2010:
  - United Iron Works;
  - Seaport Food Mart.
- During the current reporting period, SPU referred one facility (Seaport Food Mart) to other agencies (Ecology WQ).
- Ecology conducted five inspections at four businesses within this source control area during the current reporting period (Appendix C). A warning letter was issued to Boyer Logistics/Towing, and a request to terminate a stormwater permit by United Iron Works was denied.

5.2 Source Tracing

- SPU has collected two in-line solids grab samples, four onsite catch basin samples, and 15 right-of-way catch basin samples in the 2nd Avenue S SD basin. During the current reporting period, one onsite catch basin sample and three right-of-way catch basin samples were collected in this drainage basin (Appendix D).
- 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 are presented in SPU 2010; sample locations are shown in Figure 3-2. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Copper		●	
	Lead		●	
	Mercury		●	
	Zinc		●	●
PCBs	PCBs, total		●	●
PAHs	LPAH			
	HPAH		●	●
Phthalates	Bis(2-ethylhexyl)phthalate		●	●
	Butylbenzylphthalate		●	●
	Dimethylphthalate			
	Di-n-butylphthalate		●	
	Di-n-octylphthalate			●
Other SVOCs	2-Methylnaphthalene		●	
	4-Methylphenol		●	
	Benzyl alcohol			
	N-Nitrosodiphenylamine			●
	Pentachlorophenol			●
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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

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

- SPU conducted a site visit to Industrial Container Services on August 20, 2009, to investigate drainage from the roof drains on the central production building, office building, and small shed on the northwest property corner (Jeffers 2009d), in response to an action item identified in the EAA-2 SCAP. The inspection determined that roof drains from the office and small shed on the northwest corner of the property do not discharge to a structure, but instead drain to the

ground along 1st Avenue S. Based on SPU drainage maps, it is not clear where surface runoff in this area flows. Process water and stormwater from the process area is collected in three sumps at the property and is pumped to an onsite water treatment system, which discharges to the sanitary sewer line just outside the facility's front gate along 1st Avenue S. During heavy rains, some of this water is diverted directly to the sanitary sewer line untreated.

- 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 2010k). The Agreed 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 Cleanup Action Plan (CAP) that identifies the preferred cleanup action and develops a schedule to remediate the contamination (Ecology 2010h).
- The property owner/operator submitted an agency review draft RI/FS Work Plan, prepared by Dalton, Olmsted and Fuglevand, Inc., dated July 16, 2010. A final draft was scheduled to be submitted to Ecology in January 2011.

Douglas Management Company / Alaska Marine Lines

Current Operations	Shipping container storage
Historical Operations	Shipbuilding, metal and salvage, sand & 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

- A combined Early Notice and Preliminary Status Letter was issued on August 13, 2009 (Ecology 2009o). As of September 2010, Ecology and the PLP were still finalizing negotiations on an Agreed Order.
- Alaska Marine Lines operates shipping container storage and support services on this property. The ISGP formerly issued to Douglas Management Company was administratively terminated when property ownership changed. Alaska Marine Lines is operating at this location with the assumption that an ISGP applies. They have an adequate SWPPP and are conducting quarterly monitoring. Ecology WQ administrative staff are working to ensure current and proper permit coverage.

This page intentionally left blank.

Key

- Property Boundary
- Road
- Outfall

Figure 5–1. Early Action Area 2: Trotsky Inlet

0 100 200 400 600 800 Feet

WA State Plane North, NAD83

SAIC From Science to Solutions

N

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 – 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)

6.1 Business Inspections

- SPU continued conducting business inspections in the Slip 4 source control area during the current reporting period (July 2009 through September 2010). A total of 15 inspections were conducted at six facilities in the Slip 4 basin, including six initial inspections and nine follow-up inspections (Appendix B). As of the end of September 2010, one facility (First Student) was identified by SPU as not in compliance.
- During the current reporting period, SPU referred four facilities within this source control area to Ecology WQ:
    - Boom Boys Cranes LLC;
    - Heko Services, Inc.;
    - Organic Fuel Processors; and
    - First Student.
- Ecology conducted 10 inspections at six facilities in the Slip 4 source control area during the current reporting period (Appendix C). A warning letter was issued to Boeing for compliance issues at North Boeing Field (NBF).
- An ISGP application for First Student is on hold due to a PCHB stay on new NPDES permits.

6.2 Source Tracing

- Boeing and SPU have been sampling sediment traps in the Slip 4 storm drains since 2005.[6] Boeing has collected 77 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. The most recent samples for which current reporting period data are available were collected in April 2010.
- While generally decreasing over time, PCB concentrations in all but sediment trap 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 2010
T1 (Downstream end of north and north-central lateral SD)	0.68 – 420	3.95
T2 (Downstream end of south lateral SD)	0.010 – 1.46	0.46
T2A (Upstream of NBF on the south lateral SD)	<0.02 – 0.38	0.45
T3 (Downstream end of south-central lateral SD)	0.026 – 1.81	0.25
T3A (Upstream of NBF on the south-central lateral SD)	<0.02 – 0.73	<0.02
T4 (Downstream end of north-central lateral SD)	0.24 – 2.75	1.07
T4A (Upstream of NBF on the north-central lateral SD)	<0.011 – 5.60	0.68
T5 (Downstream end of north lateral SD)	2.1 – 800	2.55
T5A (Upstream of NBF on the north lateral SD)	0.086 – 0.67	0.44
T6 (I-5 SD)	<0.019 – 7.8	0.061

- To date, SPU has collected nine in-line solids grab 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. Onsite samples collected by Boeing and Ecology are described in Section 6.3 below.

[6] 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 grab samples, 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 8 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 grab samples, two onsite catch basin samples, and seven 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 Georgetown Steam Plant (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 are identified below; bullets indicate that chemical concentrations above storm drain screening levels were detected during the current reporting period. Complete sample results are presented in SPU 2010; sample locations are shown in Figure 3-2. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Sediment Traps (SPU and Boeing)	In-line Solids (SPU)	Onsite CB Solids (SPU)	Right-of-Way CB Solids (SPU)
Metals	Arsenic				
	Copper				
	Lead				
	Mercury				
	Zinc	●			
PCBs	PCBs, total	●			
PAHs	LPAH	●			
	HPAH	●			
Phthalates	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				

Chemical Class	Chemical	Sediment Traps (SPU and Boeing)	In-line Solids (SPU)	Onsite CB Solids (SPU)	Right-of-Way CB Solids (SPU)
	Benzyl alcohol				
	Dibenzofuran	●			
	Pentachlorophenol				
	Phenol				
TPH	TPH-diesel				
	TPH-oil				

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

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, 1009 (Ecology 2009l).
- 8th Avenue Terminals submitted a Draft RI/FS Work Plan on December 10, 2009 in accordance with the terms of the Agreed Order (SLR 2009). Activities will include: (1) soil and groundwater sampling at western and southern portions of the property; (2) analysis of stormwater and solids; and (3) design and installation of a stormwater collection system to meet City stormwater codes and City/State permit requirements.
- Ecology provided comments on August 17, 2010, and a final RI/FS Work Plan, Sampling and Analysis Plan, and Quality Assurance Project Plan were scheduled to be received in December 2010 (Ecology 2010o).
- A stormwater compliance inspection by SPU was conducted at the site on May 5, 2010. The stormwater system on the northern portion of the site was determined to require maintenance to make it functional. Crowley intends to construct a new stormwater collection system that will be plumbed to an existing outfall (OF6) in Slip 4. OF6 will be enlarged from 8 inches to 12 inches.

- During work to address the 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 upcoming Slip 4 sediment removal action. At this time, Crowley has not yet completed the new design for the system. The City will require 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 City of Seattle and Washington State discharge requirements (Seattle City Attorney 2010).
- Also during the May 5, 2010 inspection, Ecology determined that First Student, a tenant at the property, must apply for coverage under the ISGP. A permit application was submitted by First Student on June 7, 2010. In an email to Crowley on June 21, 2010, Ecology expressed concerns about First Student's plans for construction of a bus base on the property with regard to potential interference with the remedial investigations being conducted under the Agreed Order with 8th Avenue Terminals (Sutton 2010).

Georgetown Flume

- Deconstruction of the GTSP Flume began on May 11, 2009 and was issued a notice of physical completion on September 24, 2009. Removal Action Objectives that were met include:
    - The flume, as a conveyance structure, was replaced with a pipe that has no inputs other than surface runoff from the GTSP building roof, S Myrtle Street, and areas immediately adjacent to the west side of the flume.
    - Visual inspections of 2,450-foot long flume system were conducted to verify sediment removal.
    - Confirmation soil samples were collected from the flume alignment. The MTCA industrial properties cleanup level for cPAH of 2.0 mg/kg TEQ was not exceeded. The MTCA unrestricted properties cleanup level of 1.0 mg/kg was not exceeded in either soil or concrete.
    - A new pipe and bioswale system was installed to provide stormwater conveyance for the steam plant property and the S Myrtle Street right of way.
    - Construction was completed such that minimal sediment was disturbed in Slip 4 and no material was discharged from the flume to Slip 4 during field activities (Herrera 2010).

Additional source control actions associated with this property are described below for the NBF/GTSP Site.

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

- King County staff summarized catch basin cleaning and maintenance activities in a November 10, 2010 email (Dumaliang 2010b):
  - Catch basin/manhole cleaning is performed at east, west, and central portions of the Airport on an approximately 3-year basis. East and west structures were cleaned in November and December 2008. The central portions that drain to Slip 4, including runways, taxiways, ramps, and the service road, were cleaned in June 2010.
  - Oil-water separators were cleaned in 2006 and 2007. In 2009, oil-water separators were inspected for sediments and were found to have no measurable accumulations of sediment. These units are inspected on a weekly basis for oil boom maintenance.
  - The airport paved surfaces are swept daily, with higher priority on airside areas including runways, taxiways, roads, and ramps.
  - See information on street sweeping frequencies at KCIA in Section 9 (EAA-6, Boeing Isaacson/Central KCIA).
- According to Ecology's April 22, 2010 Site Register (http://www.ecy.wa.gov/pubs/1009041h.pdf), a Periodic Review Draft Report was completed for **American Avionics**, 7023 Perimeter Road S, a KCIA tenant. A periodic review is conducted at least every five years after the initiation of a cleanup action at a site, as required by MTCA. A "no further action" letter had been issued by Ecology in 2001 after a restrictive covenant was recorded with the county. The Periodic Review concluded that:
  - Some petroleum contaminated soils remain on-site;
  - The structure and pavement (cap) continue to prevent human exposure to contamination by methods of ingestion and direct contact with soils;
  - The Restrictive Covenant on the property protects the cap; and
  - Based on a March 17, 2010 site visit, no repair, maintenance, or contingency actions have been required.
- Ecology conducted a UST site inspection on March 30, 2010 at **Aviation Fuel Storage**, 1495 S Hardy Street, and a Notice of Non-Compliance and Notice of Penalty were issued (Ecology 2010g). Violations included failure to test cathodic protection system with required frequency; failure to properly monitor tanks and/or piping for releases; failure to conduct annual line tightness test or monthly monitoring on pressurized piping; and

failure to meet automatic line leak detector requirements including annual testing. A Notice of Non-Compliance and penalty were issued by Ecology, and all items were resolved as of May 10, 2010.

- KCIA has been covered under the ISGP since 1993. The airport is in the transportation category and requires coverage if they have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Previously, the ISGP was interpreted to apply only to the King County Airport Maintenance Shop located outside the airport. King County was notified by Ecology WQ in 2009 that the permit should also apply to the industrial activity areas of the airport itself. KCIA planned to update the SWPPP to cover the industrial activity areas of the airport by February 2011. This will include stormwater monitoring of four discharge points on East Marginal Way S.

North Boeing Field/Georgetown Steam Plant (NBF/GTSP) 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 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) 63485131 (Georgetown Steam Plant) 1549544 (Georgetown Flume Outfall) 2117 (North Boeing Field) 2753918 (Boeing North Boeing Field) 2053 (Boeing North Field JP4 Tanks)
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 2009 Source Control Status Report are listed below.

Dates	Activity	Description
May-Sep 2009	Storm Drain Investigation and Cleanout	Based on results of storm drain structure sampling throughout NBF, Boeing conducted cleanout of selected manhole, catch basin, and oil/water separator structures.
Aug 2009	Supplemental Data Gaps Report	Ecology compiled sampling data and other new information obtained since publication of the original Data Gaps Report in April 2007 in a comprehensive Supplemental Summary of Existing Information and Identification of Data Gaps report (SAIC 2009d).

Dates	Activity	Description
Oct 2009-Feb 2010	Preliminary Stormwater Sampling	Ecology conducted sampling of whole water and filtered suspended solids during five storm events at two locations: the King County Lift Station, and a manhole near the downstream end of the north lateral storm drain line (MH108) (SAIC 2010a).
Mar-Apr 2010	Surface Cleaning, Storm Drain Structure Cleaning, and Soil Removal	Boeing conducted pressure cleaning of surface areas around Buildings 3-323, 3-302, and 3-322 to remove residual PCBs from surface debris; in addition, Boeing removed asphalt and underlying soil along the north side of Building 3-322 and on the west side of Building 3-302. Catch basin filters were installed in storm drain structures in the vicinity of these buildings. Seven catch basins with PCB concentrations greater than 50 mg/kg were cleaned.
Mar-Apr 2010	Storm Drain Structure Grouting	Boeing identified 13 catch basin and/or manhole locations with observed or potential for groundwater infiltration. These were sealed with polyurethane grout.
Mar-May 2010	Storm Drain Structure Sampling	Boeing collected samples from all storm drain structures (containing sufficient material to sample) in the north lateral drainage area for metals and PCB analysis. In addition, Boeing collected samples from storm drain structures in the north-central lateral drainage area and from selected storm drain structures in the south and south-central lateral drainage areas.
Mar-Jun 2010	Expanded Stormwater Sampling	Ecology collected whole water and filtered solids samples during five additional storm events and two base flow events at the King County Lift Station and MH108 locations. In addition, Ecology collected filtered solids samples from the north-central, south-central, and south lateral storm drain lines, as well as the Building 3-380 and parking lot drainage areas, and from six additional locations in the north lateral drainage area during three storm events and one base flow event (SAIC 2010g).
Apr-Jul 2010	Infiltration and Inflow Assessment	Ecology prepared a draft assessment of potential sources and pathways for infiltration of contaminated groundwater and inflow of contaminated surface runoff to the storm drain system at NBF (SAIC 2010c).
May-Sep2010	Slip 4 Sediment Recontamination Modeling	Ecology collected Slip 4 surface sediment samples and filtered stormwater solids for particle size fractionation in support of sediment recontamination modeling. The model was calibrated using site-specific data and the maximum allowable concentration of PCBs in storm drain solids that will not cause recontamination of sediments was estimated (SAIC 2010f).
May-Jul 2010	Storm Drain Structure and Line Cleaning	Boeing completed jet cleaning of storm drain structures and lines in the north lateral; jet cleaning of structures and lines in the other storm drain lines is currently in progress.
Jun 2010	Soil and Groundwater Sampling at GTSP	The City of Seattle conducted soil and groundwater sampling to support an interim soil and groundwater cleanup action at the Low-Lying Area at the GTSP property.
Jul-Oct 2010	Source Evaluation, North Lateral Storm Drain Area	Boeing conducted a source evaluation in the north lateral drainage area to identify potential contaminant sources in areas where PCBs and metals in storm drain structures were identified at concentrations above screening levels. Sampling included paint from building and equipment surfaces, caulk from windows or door jams, surface debris, concrete, asphalt, and roofing materials.

Dates	Activity	Description
Jul-Oct 2010	Focused Soil Investigation – PEL Area	Boeing conducted a focused soil investigation in the Propulsion Engineering Laboratory (PEL) area, located in the northern portion of NBF. Sampling was conducted to provide additional characterization of PCBs in soil in the area southeast and southwest of the GTSP property (fenceline area) and in the area near Building 3-302 where Boeing plans to replace a storm drain line.
Jul-Oct 2010	Concrete Joint Material Removal in the PEL Area	Boeing removed approximately 3,900 linear feet of concrete joint material (CJM) (Landau 2010b).
Aug 2010	Video-Inspection of North Lateral Storm Drain Line	Boeing conducted a video inspection of the north lateral storm drain lines following jet cleaning of structures and lines to confirm that jet cleaning activities had adequately removed solids and debris, and to inspect for cracks, fractures, or breaks in the storm drain line segments that could allow soil intrusion or groundwater infiltration. Numerous cracks and other damage to pipes were observed, as well as 83 tap connections. Repairs to be made as needed.
Sep-Oct 2010	Removal and Replacement of Storm Drain Lines	Boeing removed and replaced storm drain lines in the vicinity of Building 3-302 in the north lateral drainage area.

- Additional activities in progress as of September 2010 include:
  - GTSP continuing site characterization (scheduled for completion in January 2011);
  - Cleanout of all accessible lines, catch basins, manholes, and oil/water separators in the north-central, south-central, and south lateral storm drain lines (scheduled for completion in early 2011);
  - Soil and groundwater investigation for the PEL area — soil results are pending, and will be used to identify appropriate groundwater sampling locations (scheduled for completion in early 2011);
  - A human health risk assessment and transport evaluation for concrete joint material in the flightline area (scheduled for completion in early 2011);
  - Video inspection of storm drain lines in the north-central, south-central, and south lateral storm drain lines (all but approximately 350 feet completed in late 2010; remaining to be completed in early 2011 subject to weather conditions);
  - Source removal in the north lateral storm drain area, including removal of paint from bollards, and removal of building caulk and other materials at Building 3-326 (removal of paint from bollards completed in October 2010; removal of other source material to be scheduled); and
  - Planning for an interim remedial action near the fenceline between GTSP and NBF (scheduled for the 2011 construction season).

- In late September 2010, USEPA and Boeing entered into an Administrative Settlement Agreement and Order on Consent (ASAOC) (USEPA 2010d, 2010e). Under this agreement, Boeing agreed to implement short-term and long-term treatment of stormwater in the north lateral storm drain. The short-term stormwater treatment (STST) facility for the north lateral storm drain began operation in October 2010. EPA's interim goals for the STST system are PCB concentrations below 0.014 µg/L in water and below 0.42 mg/kg DW in solids, with TSS below a daily maximum of 10 mg/L and a monthly average of 5 mg/L. For the long-term stormwater treatment system, EPA interim goals are PCB concentrations below 0.014 µg/L in water and below 0.10 mg/kg DW in solids.

Key

- Property Boundary
- Road
- Outfall

Figure 6–1. Early Action Area 3: Slip 4

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

WA State Plane North, NAD83

SAIC From Science to Solutions

N

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 and SPU conducted one business inspection in the 16th Avenue S SD. An initial inspection was conducted at Airgas Nor-Pac, Inc. The facility was not in compliance as of the end of September 2010 (Appendix B).
- In addition, Ecology conducted two inspections at Jorgensen Forge during the current reporting period (Appendix C). Several compliance items were noted during the November 5, 2009 permit compliance inspection; significant progress toward implementing a new SWPPP was observed during a July 7, 2010 re-inspection.

7.2 Source Tracing

- In December 2009, KCIA rerouted its storm drain lines to eliminate discharge to the City of Tukwila right-of-way drainage on East Marginal Way S. The reroute prevents KCIA stormwater from transporting downstream PCB contamination into the LDW. It also eliminated backflow from the known PCB contamination at Jorgensen Forge into the KCIA drainage system during high tide and flood events. The KCIA outlet to the City of Tukwila right-of-way was plugged with concrete. The 10-acre basin now discharges eastward toward the airport and into the KCIA SD#2 basin (EAA-6).
- An inline sediment trap, originally installed by SPU in September 2008, was moved to an upstream manhole location to characterize stormwater from the NBF Lot 12 parking area.
- SPU has collected two sediment trap samples in the KCIA-Jorgensen Forge storm drain 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 grab sample in this line. One sediment trap sample was collected during the current reporting period (Appendix D).

- SPU has collected six in-line solids grab samples and two right-of-way catch basin samples (RCB207, RCB208) in the 16th Avenue S basin. No 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 are presented in SPU 2010; 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	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		
	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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

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.

- Boeing issued a *Volume VIb Corrective Measures Study: 2-40s Area Data Gap Investigation Report* in June 2009. This report describes field work and laboratory analysis of groundwater samples performed at the 2-40s Area of Boeing Plant 2. Field work included installation of 17 groundwater

monitoring wells, 105 direct-push probe sampling locations, and soil sampling at three levels in the vadose zone where new wells or probes were installed. Metals, SVOCs, PCBs, VOCs, and TPH were detected in groundwater and soil at concentrations which exceeded screening levels for the protection of surface water (EPI and Golder 2009a).

- In September 2009, Golder Associates (for Boeing) prepared a *2009 Addendum to 2008 Stormwater Source Control Interim Measure Work Plan.* The addendum addresses additional catch basin sampling to be conducted to evaluate and identify potential sources of PCBs and metals in the Round 3 (2008-2009) stormwater and suspended solids samples to gauge the effectiveness of the 2008 Interim Measure (Golder 2009).
- Boeing issued a *Volume VIIb Corrective Measures Study: North Area Data Gap Investigation* in October 2009. This report describes field work and laboratory analysis of groundwater samples performed at the North Area of Plant 2. Field work included installation of four groundwater monitoring wells, 46 direct-push probe sampling locations and soil sampling at three levels in the vadose zone where new wells or probes were installed. In groundwater samples, metals, PCBs, and TPH were detected in groundwater at concentrations which exceeded screening levels for the protection of surface water. In soil samples, metals, PCBs, SVOCs, VOCs, and TPH were detected at concentrations which exceeded screening levels for the protection of surface water (EPI and Golder 2009b).
- On October 12, 2009, Boeing finalized the *Other Area 12 ERD Interim Measure — Semiannual Report* detailing groundwater data generated during the period from December 2008 through June 2009. Data indicate that all required components of the enhanced reductive dechlorination (ERD) remediation process were generated during the pilot test but did not produce long lasting ERD conditions for reductive degradation of chlorinated VOCs. Subsequent remediation was set to continue through April 2010 (EPI 2009).
- In February 2010, Golder Associates (for Boeing) submitted a *Stormwater Source Control Round 3 Sampling Report 2008-2009 for Boeing Plant 2*. It was determined that Round 3 solids data demonstrate an improvement from Round 1 and 2 sampling, but indicate that PCBs and metals remain at concentrations above their respective action levels. Sampling was to begin again in October 2009 and continue until sufficient sample material was collected (Golder 2010a).
- Round 4 of source control sampling began on November 9, 2009 and was completed on April 22, 2010. This consisted of sampling and analysis of suspended solids and/or water along seven of 24 active storm lines at Plant 2. Results indicate that PCBs and metals remain variably present in Plant 2 stormwater solids in some lines at concentrations above their respective action levels. Source control actions planned to address ongoing PCB and metal sources include sweeping, caulk removal, building materials assessment, catch basin sampling/cleaning, and filter fabric sampling/cleaning/replacement.
- Boeing prepared an Addendum to the Stormwater Source Control Work Plan and Sampling and Analysis Plan in July 2010 which presents the approach and procedure for implementation of automated composite stormwater sample collection as part of the annual source control sampling program at Plant 2 (Golder 2010e). Boeing submitted a

Draft Stormwater System Work Plan to Control Storm Drain Discharges for Plant 2 to EPA in July 2010 (Golder 2010d). Round 5 (2010-2011) of sampling was set to begin in October 2010 (Golder 2010c).

- During October and November of 2009, Boeing completed the removal of caulk materials containing > 25 mg/kg PCBs in concrete pavements in the 2-60s area at Plant 2, as detailed in *Preliminary IM Completion Report: Removal of PCB-Containing Caulk in Concrete Pavements* (Golder 2010b). The second phase of field work for the removal of caulk in the 2-31 and 2-10 Areas began August 2, 2010 and continued through the month (Boeing 2010).
- Boeing conducted groundwater monitoring activities at Plant 2 as detailed in *CMS Phase Semiannual Groundwater Monitoring Report, February 2010*. VOCs, metals, and PCBs were detected at concentrations greater than screening levels for the protection of surface water (EPI 2010). The second semiannual round of Shoreline Corrective Measures Study (CMS) sampling was conducted in August 2010; results are not currently available (Boeing 2010).
- The National Oceanic and Atmospheric Administration (NOAA), Department of the Interior, Ecology, Muckleshoot Indian Tribe, and Suquamish Tribe filed a complaint against The Boeing Company for the damage, destruction, and loss of natural resources resulting from releases of hazardous substances into the LDW. All parties entered into a Consent Decree on May 4, 2010. Boeing, in lieu of and as equivalent to monetary damages, agreed to implement a habitat restoration project along the shoreline of Plant 2 (USDOJ 2010b).
- On June 1, 2010, Boeing informed Ecology the company had responded to a jet fuel spill on May 28 at Plant 2. Lab analysis of an oil sheen reported to Ecology and the Coast Guard on May 29 indicate a link between the observed oil sheen on the LDW and the jet fuel spill from Boeing. Boeing was cooperative in its efforts to clean out the private storm drain that acted as a pathway to the waterway and effected media on the shoreline. At the time of this report no further information was available regarding this incident (Mansfield 2010).
- Boeing submitted an *Interim Measure Work Plan: 2010 Soil and Stormwater Management Plan* for Plant 2 in July 2010. The work plan describes activities that will be conducted during 2010 to manage excavated and exposed soil during demolition, and to manage stormwater until such a time that a stormwater system is installed in 2012 (Golder 2010f).
- Under EPA directive, Boeing is continuing to monitor the toluene plume at Plant 2. While sampling results indicate a widespread toluene plume, the plume is not reaching the LDW. Biannual monitoring was to continue in August 2010, but results were not available at the time this Source Control Status Report was prepared (USEPA 2010a).

Jorgensen Forge

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

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, if necessary (Ecology 2007c).

Source Control

- In 2010, Ecology transferred oversight of the 24-inch pipe cleanup to the EPA Office of Emergency Response. In July 2010, Jorgensen Forge and Boeing submitted the *15-Inch and 24-Inch Property Line Storm Pipes Cleanup Work Plan* to EPA. Phase I pipe and storm drain lateral cleanout was proposed to be completed by the end of 2010 (Anchor 2010a).
- On July 7, 2010, Ecology WQ conducted a site visit to assess progress towards implementation of the numerous items noted in the November 5, 2009 compliance inspection report. Good progress had been made, 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.

Contaminated Sediments and Bank Soils

- A *Draft Engineering Evaluation/Cost Analysis* (EE/CA) was submitted to EPA in March 2009 on behalf of Jorgensen Forge for a removal action of contaminated sediments and associated bank soils within the removal action boundary. Included in the EE/CA is a Draft Biological Assessment along with a Draft Clean Water Act Evaluation (Anchor 2009).
- 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 (TCRA) for the Jorgensen Forge Outfall Site. The removal action, to be conducted by Boeing and the Jorgensen Forge Corporation, consists of cleaning and closure of existing 15- and 24- inch public lateral storm drain pipes. This removal action is intended to prevent continued discharge of stormwater through known PCB contamination to the LDW (USEPA 2010g).

This page intentionally left blank.

Key

- Property Boundary
- Road
- Outfall

Figure 7–1. Early Action Area 4: Boeing Plant 2 to Jorgensen Forge

0 187.5375 750 1,125 1,500 Feet

WA State Plane North, NAD83

SAIC From Science to Solutions

N

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 a source control business inspection at Basin Oil, 8661 Dallas Avenue S, on January 21, 2010.

8.2 Source Tracing

- To date, SPU has collected four onsite catch basin samples (three discharging to the separated storm drain system and one discharging to the combined sewer system), nine right-of-way catch basin samples (two discharging to the separated storm drain system and seven discharging to the combined sewer system), and one in-line solids samples (from the stormwater storage tanks that discharge to the combined sewer) within this source control area. During the current reporting period, one onsite catch basin sample (PortCB6 at Terminal 117), one in-line solids grab sample, and seven right-of-way catch basin samples were collected (Appendix D). Only Port CB6 discharges to the separated storm drain system within EAA-5. The samples collected from structures discharging to the combined sewer system do not discharge within EAA-5; the combined sewer system in this area discharges at the 8th Avenue CSO. This CSO has not overflowed in the past 10 years.
- 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 are presented in SPU 2010; sample locations are shown in Figure 3-2. 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		●

Chemical Class	Chemical	Onsite CB Solids	Right-of-Way CB Solids
Phthalates	Bis(2-ethylhexyl)phthalate	●	●
	Butylbenzylphthalate	●	●
	Diethylphthalate		●
	Dimethylphthalate		●
Other SVOCs	2-Methylnaphthalene		
	4-Methylphenol		●
	Benzoic acid		●
	Benzyl alcohol		
	Dibenzofuran		
	Hexachlorobenzene		●
TPH	TPH-diesel		
	TPH-oil	●	●

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

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 September 2009, all catch basins on the T-117 Upland Study Area were inspected. Only CB-3 and CB-5 had accumulated sufficient solids to be analyzed for dioxins and furans, arsenic, copper, silver, TPH, PCBs, and PAHs. Due to higher than expected PCB and dioxin and furan concentrations, site inspections were conducted in November 2009 resulting in preparation of a stormwater solids control plan and site maintenance. Site maintenance activities were documented in the sixth semi-annual Time Critical Removal Action (TCRA) Operations & Maintenance report and submitted to EPA on December 28, 2009. Site maintenance activities include (AECOM 2009):
    - Cracks in the asphalt were sealed;
    - Gaps above and below the ecology block retaining wall were sealed;
    - Site vegetation was cut back;
    - Asphalt around all catch basins was washed down;
    - Interiors of all catch basins were cleaned out;
    - New hay bales and sediment filter socks were installed at all catch basins.

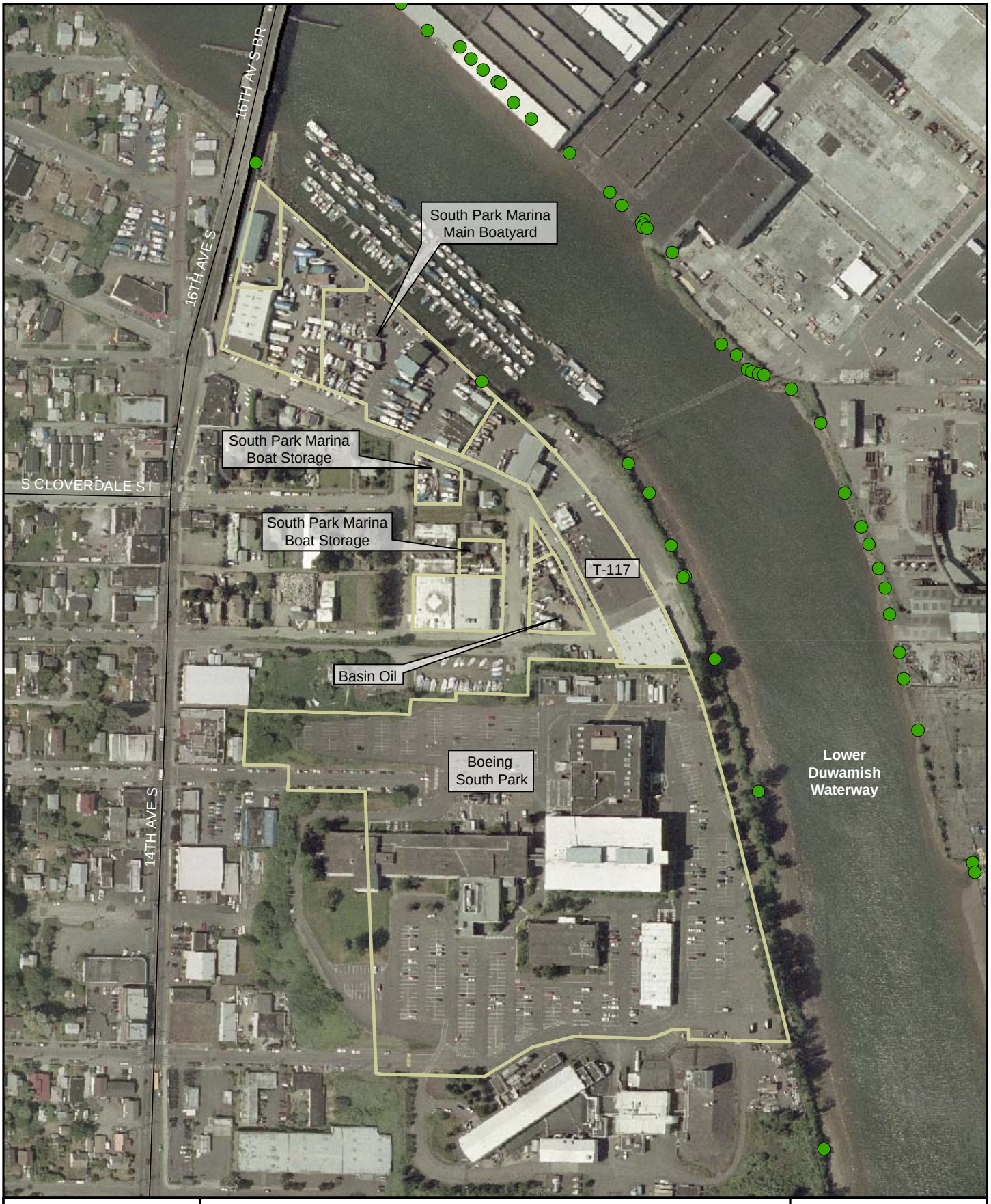
- On June 3, 2010, the Port of Seattle and City of Seattle submitted a Revised EE/CA to EPA, which incorporated all relevant upland and right-of-way data, including assessments of portions of the site formerly occupied by the Malarkey Plant (Windward 2010b). The EE/CA also established boundaries for the removal areas and proposed two removal action alternatives.
- On September 30, 2010, EPA issued its Action Memorandum for a Non-Time-Critical Removal Action (USEPA 2010f). The Removal Action consists of the removal and disposal of approximately two acres of contaminated marine sediments, three acres of Terminal upland soils (formerly an industrial facility), and 10 acres of soils in specified adjacent streets, rights-of-way, and residential yards. EPA is preparing an Enforcement Order on Consent to be negotiated with the Port and City.
- In 2010, SPU cleaned all the catch basins, pump stations, and storage tanks on the temporary stormwater collection system that serves Dallas Avenue S, S Donovan Street, and 17th Avenue S adjacent to Terminal 117. In addition, the catch basins, inlets, and pipes on the combined sewer system on Dallas Avenue S, S Cloverdale Street, and S Donovan Street were cleaned and the streets in this area were swept (SPU 2010).

Basin Oil

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

- 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. Basin Oil will contribute $17,000 to the state's General Fund as well as $13,000 to a Chelan County salmon restoration project as part of an Innovative Settlement Project (Ecology 2010a).
- In August 2010, SAIC, on behalf of Ecology, summarized findings of a May 2009 soil and groundwater characterization. SAIC found that one or more soil samples exceeded MTCA Method A or Method B soil cleanup levels for the following chemicals: arsenic, chromium, heavy oil and gasoline-range organics, benzo(a)pyrene, benzene, and carbazole. However, because the site is small, elevated soil contaminant concentrations are localized and near the surface, and no contaminants (except arsenic) were detected in groundwater at concentrations above screening levels, the Basin Oil property is not believed to represent a significant potential source of contaminants to Terminal 117 or Dallas Avenue. (SAIC 2010d).

This page intentionally left blank.



Key

- Property Boundary
- Road
- Outfall

Figure 8–1. Early Action Area 5: Terminal 117

0 100 200 400 600 800 Feet

WA State Plane
North, NAD83

SAIC From Science to Solutions

N

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

The RM 3.7-3.9 East (Early Action Area 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)

Source control actions that are area-wide (i.e., not associated with a specific adjacent or upland property) are described below.

9.1 Business Inspections

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

9.2 Source Tracing

- To date, SPU has collected two sediment trap samples, four in-line solids grab 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, one in-line solids sample, and one onsite catch basin sample (CB40 at Ameriflight) were collected in this drainage basin (Appendix D).
- 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 are presented in SPU 2010; 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	●		●	

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Phthalates	Bis(2-ethylhexyl)phthalate			●	
	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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

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

- A property boundary investigation was conducted in late July 2009 and consisted of collecting soil samples at locations along the western property boundary adjacent to the Port of Seattle property and at the southern property adjacent to the former PACCAR site. Soil samples were analyzed for arsenic, cadmium, chromium, copper, lead, and zinc (Landau 2010a).
- Boeing and Ecology entered into Agreed Order No. DE-7088, effective April 23, 2010, to conduct an RI/FS and prepare a draft CAP (Ecology 2010i).
- On June 21, 2010, Boeing submitted a draft RI/FS Work Plan to Ecology for review (Landau 2010a). The draft Work Plan summarized previous environmental investigations and voluntary remedial actions at the site, described current environmental site conditions and data gaps, and listed proposed groundwater, soil, storm drain, and vapor investigations. As of September 30, 2010, Ecology was reviewing the draft Work Plan (Ecology 2010o).
- On September 10, 2010, the Seattle Times reported that Boeing will reopen the Thompson site to install military systems hardware on P-8 Poseidon anti-submarine jets (Seattle Times 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	NA
Chemicals of Concern	PAHs, phthalates, copper, zinc, petroleum hydrocarbons, PCBs
Media Affected	Stormwater, groundwater

- In late 2008, multiple instances of discolored/turbid water discharging from the KCIA SD#2/PS45 EOF outfall were reported to Ecology. Ecology inspectors conducted a site visit on March 17, 2009 to inspect the discharge from this outfall (Jeffers 2009c, Wright 2009). They indicated that the discharge may be due to iron bacteria in the pipes, deterioration and rusting of the pipe itself, or re-suspension of mud on the bank below the outfall and backing up of river water into the pipe during high tide. It was also noted that significant groundwater infiltration to this storm drain occurs; as a result, discharges from this outfall are observed even when there is no precipitation (Wright 2009).
- Concurrent with the March 17 site visit, King County collected stormwater samples from the last manhole upstream of this outfall and from the KCIA south pump station. (Results were not available for inclusion in the August 2009 source control status report.) Samples were analyzed for metals, TSS, turbidity, and pH. Arsenic (1.9-2.2 ug/L), copper (2.6 ug/L), and zinc (25.7-35.7 ug/L) were detected at concentrations below the water quality standards. No other metals were detected (<1.0 ug/L). TSS ranged from 18 to 32 mg/L (Dumaliang 2009). Sample volume was insufficient to analyze for petroleum hydrocarbons (Wright 2009).
- King County planned to collect solids samples from the pump station primary cell, if enough material was available, and to clean out the structure. Samples were to be analyzed for PCBs, metals, and petroleum hydrocarbons (Wright 2009). No further information was available at the time this Source Control Status Report was prepared.
- In 2010, King County began 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 drainage area to Slip 4 (EAA-3). The project includes construction of a pump station and water quality vault that will provide basic water quality treatment for this portion of the airport (Bergam 2010).
- In response to questions from Ecology, King County provided the following data regarding the frequency of sweeping maintenance activities at KCIA (Dumaliang 2010a):

Airport Area	Sweeping Frequency
Main Runway	Monthly
Short Runway	Biweekly
Aircraft Ramps	Biweekly
Terminal and Aircraft Parking Ramps	Weekly

Airport Area	Sweeping Frequency
Maintenance Shop and Terminal Parking	3 Times per Month
Airport Main Road (Perimeter Road S)	4 Times per Month
Other Low Traffic Landside Areas	Quarterly to Monthly

- KCIA plans to clean catch basins/manholes in the central portion of KCIA in 2011 (Dumaliang 2010b).
- On August 13, 2009, the King County Department of Transportation issued a Determination of Nonsignificance for cleanup of soil within an area of known Jet A petroleum hydrocarbon contamination, located at the northeast portion of the Galvin Flying Services Quad 7 lease area, 7777 Perimeter Road S (KCIA 2009). The excavation area was estimated at 6,000 cubic yards. The proposal also included the installation of a barrier/gravity wall shoring system along the northeastern property boundary to mitigate recontamination of the property. Contaminated groundwater was to be pumped from the excavation and discharged to the sanitary sewer under a KCIW waste authorization. This work was completed in the third quarter of 2009. The site is currently undergoing quarterly compliance monitoring, which will be completed in the third quarter 2011.
- In-line sediment traps were installed at the Airport's discharge point to the KCIA SD#2/PS45 EOF outfall. The sediment traps were sampled in March 2009 and October 2009, and were scheduled to be resampled in December 2010. Zinc (5,559 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.
- KCIA has provided access to Ecology to investigate loading to the LDW from the KCIA SD #2/PS45 EOF outfall and other municipal outfalls as part of Ecology's Lateral Loading Study. Additional information about this study is provided in Section 3.2.8.
- In December 2009, KCIA rerouted stormwater drainage from the EAA-4 drainage basin to the KCIA SD#2 drainage basin (see Section 7.2).

Key

- Property Boundary
- Road
- Outfall

Figure 9–1. Early Action Area 6: Boeing Thompson and Isaacson Properties

0 125 250 500 750 1,000 Feet

WA State Plane North, NAD83

SAIC From Science to Solutions

N

Key

- Property Boundary
- Road
- Storm Drain

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

0 125 250 500 750 1,000 Feet

WA State Plane North, NAD83

SAIC From Science to Solutions

N

10.0 Early Action Area 7 (Norfolk CSO/SD)

The 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 continued conducting business inspections in the Norfolk CSO/SD source control area during the current reporting period (July 2009 through September 2010). Three initial inspections were conducted at three facilities in the Norfolk CSO/SD/EOF basin (Appendix B). One facility (Special Asphalt Products, Inc.) was identified by SPU as not in compliance as of the end of September 2010.
- Ecology conducted inspections at four facilities during the current reporting period: MacDonald Miller Facility Solutions, Northwest Gourmet Foods, Pape Material Handling, and Speedee Lube (Appendix C).

10.2 Source Tracing

- To date, SPU has collected 20 sediment trap samples, 31 in-line solids grab samples, six onsite catch basin samples, and 11 right-of-way catch basin samples in the Norfolk drainage basin. During the current reporting period, five sediment trap samples, four in-line solids samples, and one onsite catch basin sample (CB84 at Pacific Coatings) were collected in this drainage basin (Appendix D).
- 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 are presented in SPU 2010; 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	●	●		

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
PAHs	LPAH			●	
	HPAH	●	●	●	
Phthalates	Bis(2-ethylhexyl)phthalate	●	●	●	
	Butylbenzylphthalate		●		
	Dimethylphthalate	●			
Other SVOCs	2-Methylnaphthalene			●	
	4-Methylphenol				
	Dibenzofuran				
	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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

10.3 Facility-Specific Source Control Actions

Boeing Developmental Center (BDC)

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 December 2009, Calibre Systems (for Boeing) published the *2009 Annual Sampling Report, South Storm Drain System, Boeing Developmental Center* (Calibre 2009). This report presents the results of the post-removal monitoring associated with the south storm drain line at the BDC during 2009. Activities and results are summarized below.
- Annual cleanout of accumulated solids from the Vortechnics 9000 unit was completed, and further pressure washing (jet-rodding) of the storm drain line was conducted from the Vortechnics 9000 unit approximately 350 feet upstream towards and beneath Building 9-101. (This portion of the south storm drain system could not be accessed during initial cleaning of the system in 2002.) Sediment and wash water generated during the cleanout

process was placed into Baker tanks at two temporary processing areas (one at Boeing Plant 2 and one at NBF).

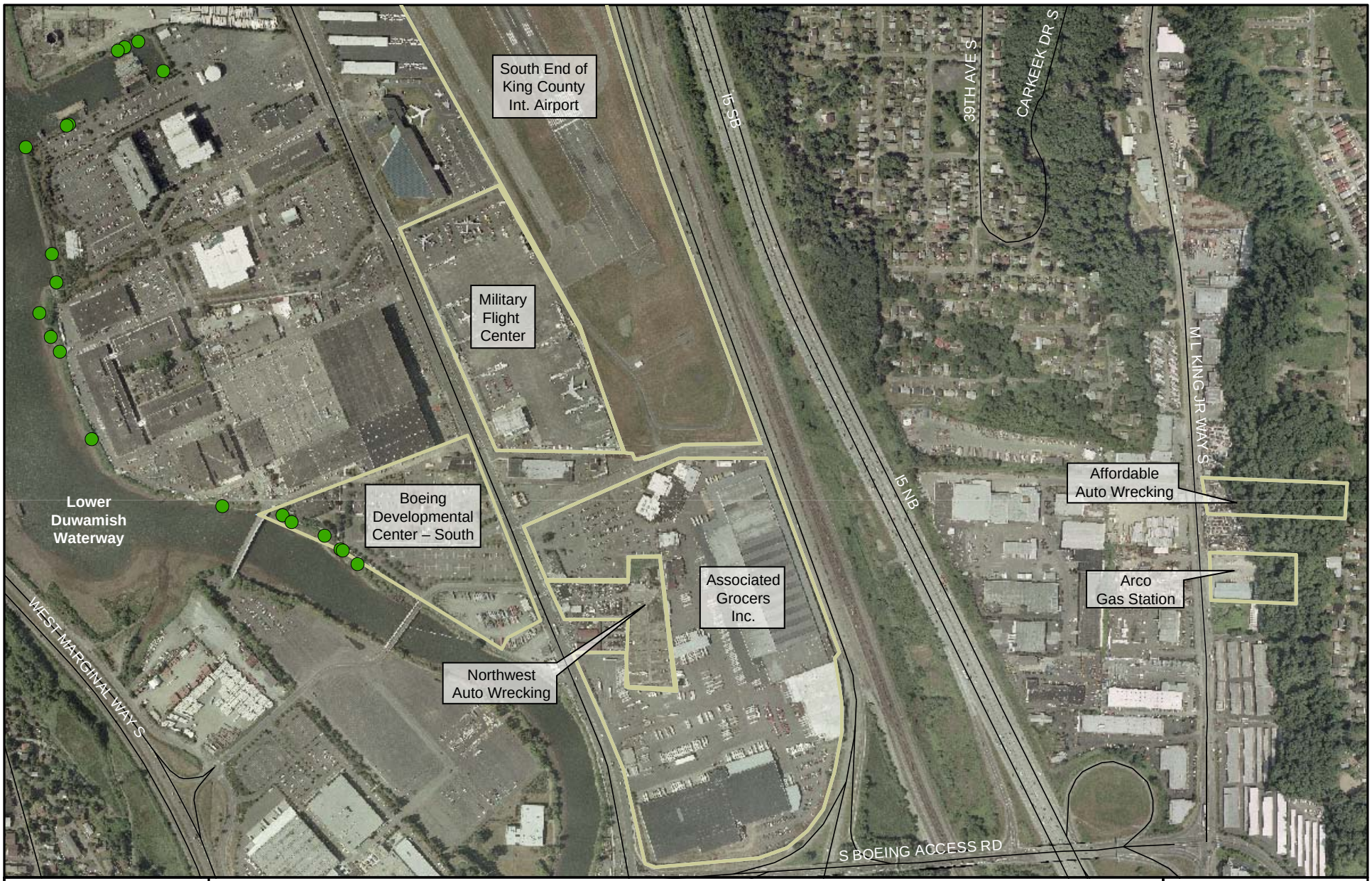
- Boeing collected three samples of backfill material located near the south storm drain outfall on September 2, 2009. Total PCBs were detected at a concentration of 34 mg/kg OC in one sample; PCBs were not detected in the other two samples.
- Boeing collected storm drain solids from Manhole #3, upstream of the Vortechnics 9000 unit; PCBs were detected at 33 mg/kg DW. Two samples of the solids material captured by the Vortechnics 9000 unit were also collected; PCBs were detected at contained 21.7 mg/kg DW and 23.5 mg/kg DW. Another sample was collected at Manhole #2, downstream from the Vortechnics 9000 unit; PCBs were detected at 16.2 mg/kg DW.
- The total PCB load to the storm drain outfall was estimated at 0.39 gram/year.
- The next round of storm drain system sampling was scheduled for Fall 2010; servicing of the Vortechnics 9000 unit was scheduled to be performed during late summer or fall of 2010 (Calibre 2009).

Boeing Military Flight Center

- Boeing collected a solids sample from an oil/water separator at the Military Flight Center; this oil/water separator is connected to the Norfolk storm drain system. Total PCBs (Aroclor 1254 and 1260) were detected at 2 mg/kg DW (Calibre 2009).

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

This page intentionally left blank.



Key

- Property Boundary
- Road
- Outfall

Figure 10–1. Early Action Area 7: Norfolk CSO/SD

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

WA State Plane North, NAD83

N

SAIC From Science to Solutions

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

- Ecology conducted a follow-up Water Quality inspection at Ash Grove Cement on August 4, 2009 (Appendix C). According to the inspector, this facility needs to apply for an individual NPDES permit. Ash Grove Cement subsequently applied for and obtained an NPDES permit (see Section 11.3 below).

11.2 Source Tracing

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

11.3 Facility-Specific Source Control Actions

Ash Grove Cement

Current Operations	Cement manufacturing
Historical Operations	Cement manufacturing, clinker production
Address	3801 East Marginal Way S
Facility/Site ID	2142
Chemicals of Concern	Copper, antimony, chromium, other heavy metals, PCBs, petroleum hydrocarbons
Media Affected	Groundwater, soil

- In January 2009, it was discovered that all stormwater from this facility is pumped to a public storm drain that discharges to the East Waterway, and not the LDW. Ash Grove Cement was issued NPDES Permit No. WA-003222-1 on April 30, 2010 (Ecology 2010j). The permit includes effluent limits for TSS, PCBs, arsenic, copper, mercury, zinc, oil & grease, turbidity, and pH.
- The City of Seattle approved a Land Use Application to allow maintenance and repairs to three docks for the Ash Grove Cement Company on August 10, 2009. The project includes the replacement of 9 steel piles on two docks, 14 wooden piles and an existing dolphin. Non-significant short-term impacts to water and air quality from construction are expected to be mitigated through permitting agencies and compliance with BMPs. No long-term impacts are anticipated from maintenance activities (Seattle DPD 2009).

This page intentionally left blank.

Key

- Property Boundary
- Road
- Outfall

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

0 150 300 600 900 1,200 Feet

WA State Plane North, NAD83

N

SAIC From Science to Solutions

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

- Ecology conducted two inspections at Manson Construction during the current reporting period (July 2009 through September 2010). Ecology issued a warning letter requiring cover and containment for petroleum containers, and improved source control measures for the shop/maintenance area (Appendix C).
- In addition, EPA and Ecology conducted a source control inspection at the GSA Federal Center South. This facility is partially located in the Slip 1 source control area. The inspection found large quantities of waste (some potentially hazardous) awaiting disposal. Numerous housekeeping issues associated with improper storage of wastes were identified. No drainage system map was available, but floor drains with unknown connections were identified in several buildings (Appendix C).

12.2 Source Tracing

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

12.3 Facility-Specific Source Control Actions

- No facility-specific source control actions were conducted during the current reporting period, other than the GSA Federal Center South inspection discussed in Section 12.1 above.

This page intentionally left blank.

Key

- Property Boundary
- Road
- Outfall

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

0 100 200 400 600 800 Feet

WA State Plane North, NAD83

N

SAIC From Science to Solutions

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

The RM 1.0-1.2 East (King County Lease Parcels) source control area is shown in Figure 13-1. The S Brandon Street CSO discharges to the LDW in addition to stormwater from storm drain outfalls within RM 1.0-1.2 East. A SCAP had not been finalized for this source control area as of the end of the current reporting period.

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 2010b)
SCAP	Draft SCAP submitted September 2010; final SCAP to be published in January 2011.

A Data Gaps Report was completed for this source control area in June 2010 (SAIC 2010b). The Data Gaps Report summarized information about three outfalls (including the S Brandon Street CSO) and four properties adjacent to the LDW (Manson Construction Company, Cadman Seattle, Inc./Lehigh Northwest, United Western Supply, and J.A. Jack & Sons). In addition, the report identified 128 facilities within the S Brandon Street CSO basin, of which 105 had not previously been included in a Data Gaps Report for another source control area.

In a memorandum dated September 9, 2010, EPA's Source Control Manager for the LDW Superfund Site expressed serious concerns about an Ecology WQ Program decision to delay sampling of CSO discharges from the S Brandon Street CSO until the year 2022. According to the memo, the S Brandon Street CSO discharges approximately 20.9 times per year with an average annual discharge volume of 32 million gallons per year; there are upstream industrial contributors to this CSO; effluent monitoring during 2007-2009 indicated higher concentrations of metals and PCBs than other outfalls; and insufficient sediment data have been collected near the outfall. EPA believes that continued discharges from the S Brandon Street CSO will have a negative impact on source control and watershed management for the LDW Superfund site (Flint 2010).

The S Brandon Street CSO is scheduled to be under control by the year 2022 (King County 2008). King County plans to conduct sampling after construction of the S Brandon Street CSO treatment facility, and after CSO discharges are considered under control. In addition, King County believes that high concentrations of certain parameters measured at the S Brandon Street CSO structure are likely skewed due to one sample with a high TSS concentration. After normalizing for TSS, solids concentrations for parameters of concern from the S Brandon Street CSO system are similar to other CSOs that King County has sampled. Because of these data anomalies, King County plans to conduct further source tracing investigations within the S Brandon Street CSO basin (Tiffany 2011).

13.1 Business Inspections

- SPU conducted two business inspections at one facility in the King County Lease Parcels source control area during the current reporting period (July 2009 through September

2010). This facility (eCullet, located at 5801 East Marginal Way S) was identified by SPU as being in compliance as of the end of September 2010 (Appendix B).

- Ecology conducted eight inspections at three facilities in the King County Lease Parcels source control area during the current reporting period (Appendix C).
- Six of these inspections were at US Starcraft, 5210 Utah Avenue S. During a June 6, 2009 inspection, Ecology identified selenium patina waste being rinsed to the ground and storm drain (Jeffers 2009b). This prompted an Environmental Report Tracking System (ERTS) report (ERTS# 613599) (Ecology 2009i). Ecology's inspector noted a spray booth which appears to be unregistered with PSCAA. The company was not able to document that spent baths of metal treatment chemicals had been properly disposed. Follow-up Ecology inspections were conducted on November 12, 2009, April 22, 2010, June 30, 2010, August 24, 2010, and September 30, 2010. During the April 2010 inspection, selenium-containing wastewater was being accumulated in 300-gallon storage tank and in 55-gallon drums. As of the end of the current reporting period (September 2010), US Starcraft had made some progress, but the facility was still largely out of compliance.

13.2 Source Tracing

- King County conducted inline sediment sampling in the S Brandon Street CSO basin and at the outfall structure during the current reporting period (King County 2010). Data validation was not complete at the time this report was prepared.
- SPU has collected one right-of-way catch basin samples 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 are identified below. Complete sample results are presented in SPU 2010; sample locations are shown in Figure 3-2. 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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

13.3 Facility-Specific Source Control Actions

J.A. Jack & Sons

Current Operations	Limestone processing and distribution
Historical Operations	Limestone processing and distribution (since 1967)
Address	5801 East Marginal Way S
Facility/Site ID	None
Chemicals of Concern	None identified
Media Affected	Additional information needed

- In early July 2010, Ecology received a telephone call indicating that pressure washing of a conveyer containing limestone sediment at the J.A. Jack & Sons facility had resulted in a release to the LDW (Anderson 2010). The caller observed a sheen, but could not identify whether it was a material sheen or an oil sheen.
- Ecology WQ sent J.A. Jack & Sons a warning letter requiring that wastewater discharges to the river be eliminated and that a conveyor belt maintenance plan be developed. The plan was submitted to Ecology on August 8, 2010.

Cadman, Inc.

Current Operations	Sand and gravel distribution; Portland cement concrete manufacturing/distribution
Historical Operations	Construction supplies, sand/gravel/cement distribution
Address	5225 East Marginal Way S
Facility/Site ID	70313617 (Cadman) 5145175 (Lehigh Northwest)
Chemicals of Concern	Petroleum hydrocarbons, toluene
Media Affected	Soil

- On December 28, 2009, Cadman submitted a Wastewater Discharge Application to the KCIW program; the facility had previously been covered under Minor Discharge Authorization No. 392-03. The application included a request to increase the total volume of Cadman's wastewater discharge and provided upgraded facility drainage maps. The permit application clarified that all emergency stormwater overflows at the stormwater detention pond discharge to the LDW and not to the KC sanitary sewer system. It is the practice at Cadman to reuse all available waters during operations and to prevent overflow of the stormwater detention pond into the LDW (Cadman 2009).

This page intentionally left blank.

Figure 13–1. King County Lease Parcels Source Control Area

0 100 200 400 Feet

SAIC From Science to Solutions

DEPARTMENT OF ECOLOGY State of Washington

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

RM 1.2-1.7 East (St. Gobain to Glacier Northwest) source control area is shown in Figure 14-1. 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 continued conducting business inspections in the St Gobain to Glacier Northwest source control area during the current reporting period (July 2009 through September 2010). A total of four inspections were conducted at two facilities with direct stormwater drainage to the LDW (Appendix B), including two initial inspections and two follow-up inspections:
  - Saint-Gobain Containers
  - Certainteed Gypsum
- SPU conducted an initial inspection at Certainteed Gypsum, 5931 East Marginal Way S, on May 12, 2009. The facility was warned not to discharge process wastewater to the storm drain. During a follow-up inspection on July 16, 2009, the SPU inspector indicated that one or more storm drain structures need to be cleaned. The facility was determined to be in compliance at that time.
- Ecology source control inspections are discussed in Section 14.3 below.

14.2 Source Tracing

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

14.3 Facility-Specific Source Control Actions

Saint-Gobain Containers

- SPU conducted a follow-up source control inspection at Saint-Gobain Containers on July 14, 2009, after the first round of inspections at this facility in 2008. SPU conducted an initial second round inspection on August 31, 2010. The facility was not

Current Operations	Glass container manufacturing
Historical Operations	Glass container manufacturing (over 40 years); lumber and plywood distribution
Address	5801 East Marginal Way S
Facility/Site ID	94925241
Chemicals of Concern	Chromium, lead, ethylene glycol
Media Affected	Air, stormwater

in compliance at that time. Corrective actions requested include proper storage of product/waste, replacement/repair of damaged or missing components to storm drain facility, implementation of proper housekeeping, and clean/eliminate leaks and spills from storage areas. As of September 2010, the facility was not in compliance, according to SPU (SPU 2010).

- On January 21, 2010, the U.S. Department of Justice announced a Clean Air Act settlement with the Saint-Gobain Containers. Under the settlement, Saint-Gobain Containers agreed to install pollution control equipment to reduce emissions of nitrogen oxides, sulfur dioxide, and particulate matter, and to pay a large civil penalty to resolve alleged violations of the Clean Air Act's new source review regulations (USDOJ 2010a).

Burlington Environmental/PSC Environmental Services

Current Operations	Storage area for corrective actions in progress at the facility
Historical Operations	Hazardous waste treatment, storage and disposal
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	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 underground storage tanks, have contaminated soils and groundwater. Groundwater contamination has been detected beyond the facility property to the west and southwest, and in an area to the east and north owned by the Union Pacific Railroad company (Ecology 2010c).

- Ecology issued a draft Dangerous Waste Management Permit for Corrective Action to Burlington Environmental, LLC in February 2010. The permit and Agreed Order (described below) are needed to establish corrective action (cleanup) obligations for the site. The new permit does not allow any treatment, storage, or disposal of hazardous/dangerous wastes at the property (Ecology 2010c).
- Ecology issued a draft Agreed Order for corrective action and a draft CAP for this site in February 2010 (Ecology 2010b). 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, enhanced groundwater biodegradation, institutional controls, and monitored natural attenuation. The area to the west of the site is being investigated by three other PLPs (Art Brass Plating, Blaser Die Casting, and Capital Industries) under separate Orders. According to the Ecology Site Manager, the Agreed Order and draft CAP were subsequently finalized.
- On February 10, 2010, Ecology issued a Determination of Nonsignificance for the proposed CAP for the Burlington Environmental (PSC-Georgetown) site. Ecology will retain oversight authority of proposed actions (Ecology 2010d).

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, barium, iron, manganese, nickel
Media Affected	Soil, groundwater

Under an Agreed Order with Ecology (DE-5296), Art Brass Plating is required to conduct an RI and implement interim actions. Sampling has been conducted since 1999. 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 began the RI in 2009 (Ecology 2009h). High levels of trichloroethylene (TCE) have been detected in groundwater as far west as 1st Avenue S. Elevated levels of nickel have also recently been found in some groundwater samples. The draft RI report is scheduled to be completed in June 2011.
- A reconnaissance groundwater study was conducted in November-December 2009 by Aspect Consulting (for Art Brass Plating). Seven groundwater probe samples were collected to depths of 74 to 84 feet in the area west of 1st Avenue S (Aspect 2010a). TCE, cis-1,2-dichloroethene (DCE), and vinyl chloride were detected at concentrations above cleanup levels at locations downgradient of the Art Brass Plating facility, and contamination was detected all the way to the LDW. A network of monitoring wells was proposed.
- In a meeting between Ecology and Art Brass Plating on February 8 and a follow-up letter from Ecology on February 24, 2010, Ecology indicated that the well network should be designed to characterize vinyl chloride concentrations as well as the TCE plume. Ecology made additional recommendations regarding well placement and depth, depiction of the contaminant plume, and implementation of a tidal study (Ecology 2010e).
- Art Brass Plating conducted a tidal study and hydraulic monitoring during May and June of 2010. Activities included a multi-well tidal study and additional hydraulic conductivity tests in the expanded study area west of 1st Avenue S (Aspect 2010b). Vertical and horizontal gradients and hydraulic conductivity were estimated.
- On September 23, 2010, Art Brass Plating submitted a Pore Water Sampling Work Plan to Ecology, to characterize chemicals of concern (COCs) in sediment pore water at locations where groundwater is expected to be discharging to the waterway. Potential COCs to be considered include TCE, DCE and vinyl chloride (Aspect 2010c). As of the end of September 2010, Ecology was reviewing this work plan.

Blaser Die Casting

On March 25, 2008, Ecology issued Enforcement Order No. DE-5479 to complete an RI for chlorinated solvent contamination in soil and groundwater at the site (Ecology 2008a). Blaser Die Casting installed groundwater monitoring wells at the site in April 2009 (PGG 2009a).

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

- Groundwater monitoring wells were sampled in June, August, and November 2009, and February 2010 (PGG 2009b, 2010a, PGG 2010b). In addition, groundwater grab samples were collected in November 2009. Blaser Die Casting conducted a transducer study of water levels in select monitoring wells from November 2009 to February 2010 (PGG 2010b).
- Blaser Die Casting submitted a letter to Ecology on November 20, 2009 regarding updates to the Vapor Intrusion Assessment Work Plan and Vapor Intrusion Inspection, Monitoring, and Maintenance Work Plan, to provide consistency with Blaser Die Cating's Final Groundwater Monitoring Work Plan. Ecology provided comments on December 4, 2009, which were incorporated into revised vapor intrusion work plan tables (PGG 2010a).
- Blaser Die Casting submitted a draft memo to Ecology on July 30, 2010 regarding fate and transport modeling related to the remedial investigation at the site (PGG 2010c).
- A compliance inspection was conducted by Ecology on July 7, 2009. The facility was determined to be in compliance at that time (Appendix C).

Capital Industries Inc.

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

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, manganese, 1,4-dioxane
Media Affected	Groundwater

- Capital Industries conducted Tier II Reconnaissance Sampling during June/July 2009, and submitted a draft *Remedial Investigation Field Program, First Phase Report* to Ecology on September 18, 2009 (Farallon 2009). This report summarized the results of the reconnaissance sampling effort and provided locations/depths for proposed groundwater monitoring wells. The report acknowledged remaining data gaps associated with characterizing the nature and extent of vinyl chloride contamination (Jones 2009). Ecology approved the First Phase Report on November 5, 2009 (Farallon 2010a).

- Capital Industries submitted a draft Groundwater Monitoring Plan to Ecology on March 22, 2010 (Farallon 2010b). Ecology approved the Groundwater Monitoring Plan on June 2, 2010 (Farallon 2010c). A total of 13 wells were installed within the Capital Area of Investigation during the 1st quarter of 2010; 12 offsite monitoring wells were installed at adjacent properties owned by CalPortland, Gull Industries, Inc., and Michigan Properties during the 2nd quarter of 2010 (Farallon 2010b, 2010c).
- Capital Industries completed a tidal study that included installation and monitoring of transducers in monitoring wells adjacent to the LDW and a stilling well located offshore. The transducers were installed in 17 locations and were monitored between July 22 and August 5, 2010 (Farallon 2010d).
- Groundwater monitoring wells were sampled in March, June, and September 2010 (Farallon 2010d).

This page intentionally left blank.

Key

- Property Boundary
- Road
- Outfall

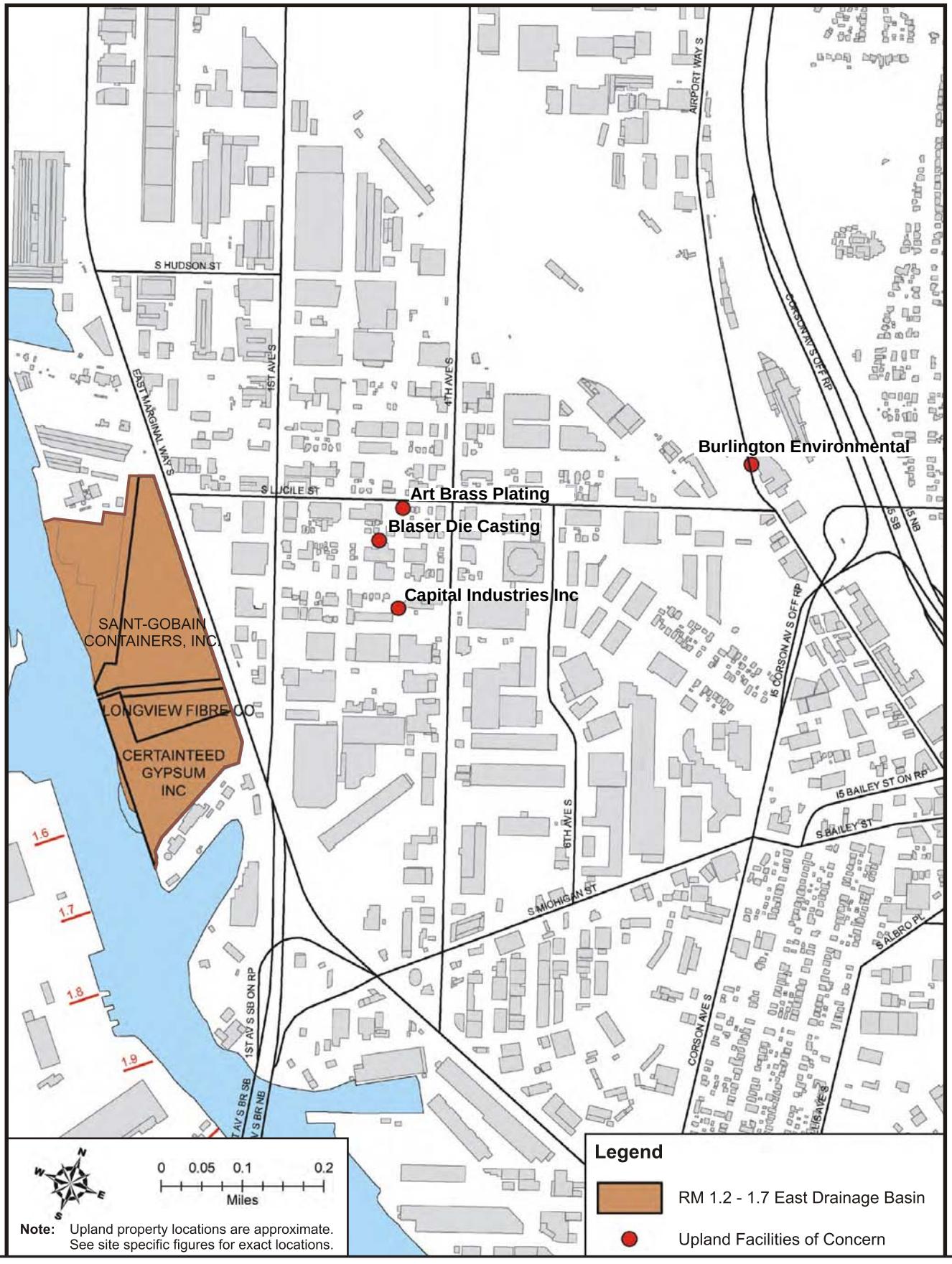
Figure 14–1. RM 1.2 – 1.7 East: St. Gobain to Glacier Northwest Source Control Area

0 125 250 500 750 1,000 Feet

WA State Plane North, NAD83

N

SAIC From Science to Solutions



Source: Ecology 2009h

DEPARTMENT OF ECOLOGY
State of Washington

Figure 14–2. RM 1.2–1.7 East: Upland Facilities of Concern

SAIC® From Science to Solutions

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

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

- On May 25, 2010, Ecology WQ conducted an inspection at Glacier Northwest (CalPortland). The main permit compliance issue noted during the compliance inspection was the lack of secondary containment for petroleum and chemical products and wastes. A warning letter was issued for an update to their SWPPP and to implement secondary containment for all chemical and petroleum products (Appendix C). The SWPPP was subsequently updated and containment was improved.
- King County conducted one business inspection and Ecology conducted three additional inspections at two facilities in the Michigan Street CSO service area during the current reporting period (Appendix C).

15.2 Source Tracing

- King County conducted inline SD solids sampling in the Michigan CSO basin during the current reporting period (King County 2010). Data validation was not complete at the time this Status Report was prepared.
- SPU has collected six right-of-way catch basin samples within the Michigan Street CSO basin. No samples were collected during the current reporting period. Chemicals detected at concentrations above storm drain screening levels are identified below. Complete sample results are presented in SPU 2010; sample locations are shown in Figure 3-2. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Right-of-Way CB Solids
Metals	Zinc	
PCBs	PCBs, total	
Phthalates	Butylbenzylphthalate	
	Dimethylphthalate	
Other SVOCs	Benzyl alcohol	

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

Shading indicates that the chemical has been detected at a concentration above the screening level in one or more samples (2003 through September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

15.3 Facility-Specific Source Control Actions

Duwamish Marine Center

- An RI Report was submitted to Ecology for the Duwamish Marine Center on May 11, 2009. The report presents results and conclusions of subsurface investigation activities conducted in accordance with a Compliance Sampling Plan (Pacific Crest 2009). Ecology is currently negotiating an Agreed Order to continue contaminant cleanup.

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, tetrachloroethene, petroleum hydrocarbons
Media Affected	Soil, groundwater

Kelly-Moore Paint Company, Inc.

- AMEC, on behalf of Kelly-Moore Paint Company, conducted a PCB investigation and cleanup in preparation of lease or sale of the facility as light manufacturing or warehousing space. A PCB Closure and Characterization Work Plan was submitted to EPA in July 2009 (AMEC 2009); EPA subsequently approved the plan (USEPA 2009b). Collection of wipe, concrete, and sediment samples indicated elevated PCB concentrations which warranted further investigations to characterize the nature and extent of PCBs within the buildings. Kelly-Moore is

Current Operations	Operations discontinued; potential sale of property
Historical Operations	Paint manufacturing facility, auto service station, and coal storage
Address	5410 Airport Way South
Facility/Site ID	2163
Chemicals of Concern	PCBs, copper, lead, zinc, solvents, petroleum hydrocarbons
Media Affected	Soil, groundwater

evaluating potential demolition of Building 8, where PCB concentrations exceeded 1 mg/kg in floor samples and wall samples (AMEC 2010a).

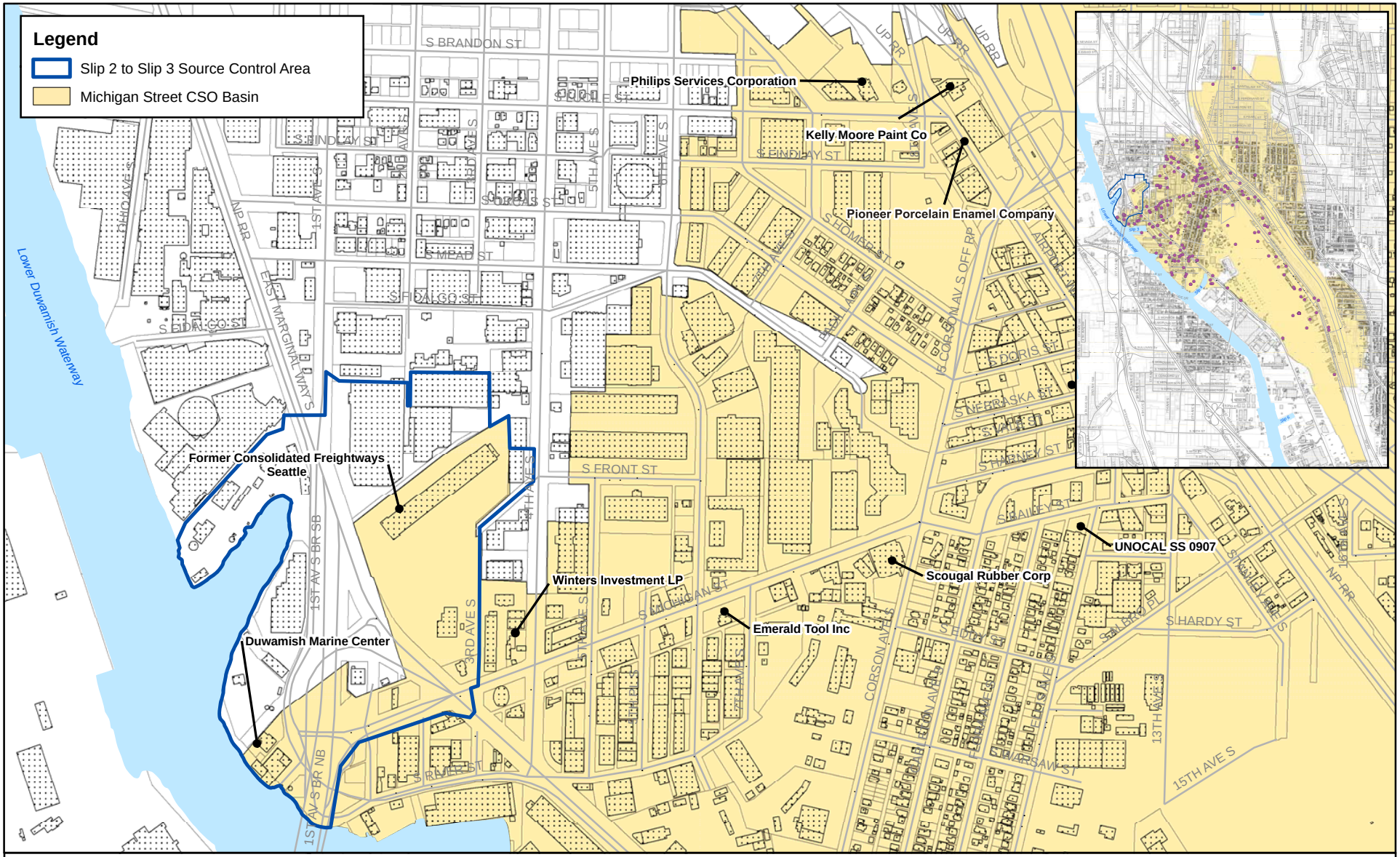
- An addendum to the January 2010 PCB report describes the cleanup and sampling of three separate areas in Building 6 where PCB concentrations exceeded the high-occupancy screening criteria of (1 mg/kg). After jack hammering and scarification, concentrations of PCBs in all composite samples were below 1 mg/kg (AMEC 2010b).

Other Facilities

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

This page intentionally left blank.

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



N

DEPARTMENT OF ECOLOGY
State of Washington

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

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

SAIC
From Science to Solutions

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

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 continued conducting business inspections in the Slip 3 to Seattle Boiler Works source control area during the current reporting period (July 2009 through September 2010). A total of 11 inspections were conducted at six facilities in the S Brighton Street SD basin, including one screening visit, four initial inspections, and six follow-up inspections (Appendix B). A total of four inspections were conducted at three facilities in the S River Street SD basin, including two initial inspections and two follow-up inspections.
- All facilities were identified by SPU as being in compliance as of the end of September 2010 (Appendix B).
- SPU and Ecology conducted an initial inspection at Shultz Distributing, Inc. on August 18, 2010. Corrective actions requested included: obtain a proper permit for facility discharge; implement and maintain pretreatment for discharge; improve or purchase adequate spill response material (SPU 2010).
- SPU and Ecology conducted a dye test at Alpine Auto Sales, 6722 Fox Avenue S, on July 8, 2009. No information on results of the dye test were available, however the facility was identified by SPU as being in compliance as of September 2010 (Appendix B).

16.2 Source Tracing

- To date, SPU has collected four in-line solids grab 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 11 in-line solids grab 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, two in-line grab samples (MH110, MH111), one onsite catch basin solids sample (CB163 at Shultz Distributing), and three right-of-way catch basin samples (RCB177, RCB178, RCB179) were collected in this drainage basin (SPU 2010).
- 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 are presented in SPU 2010; sample locations are shown in Figure 3-2. Storm drain screening levels are defined in Section 3.2.

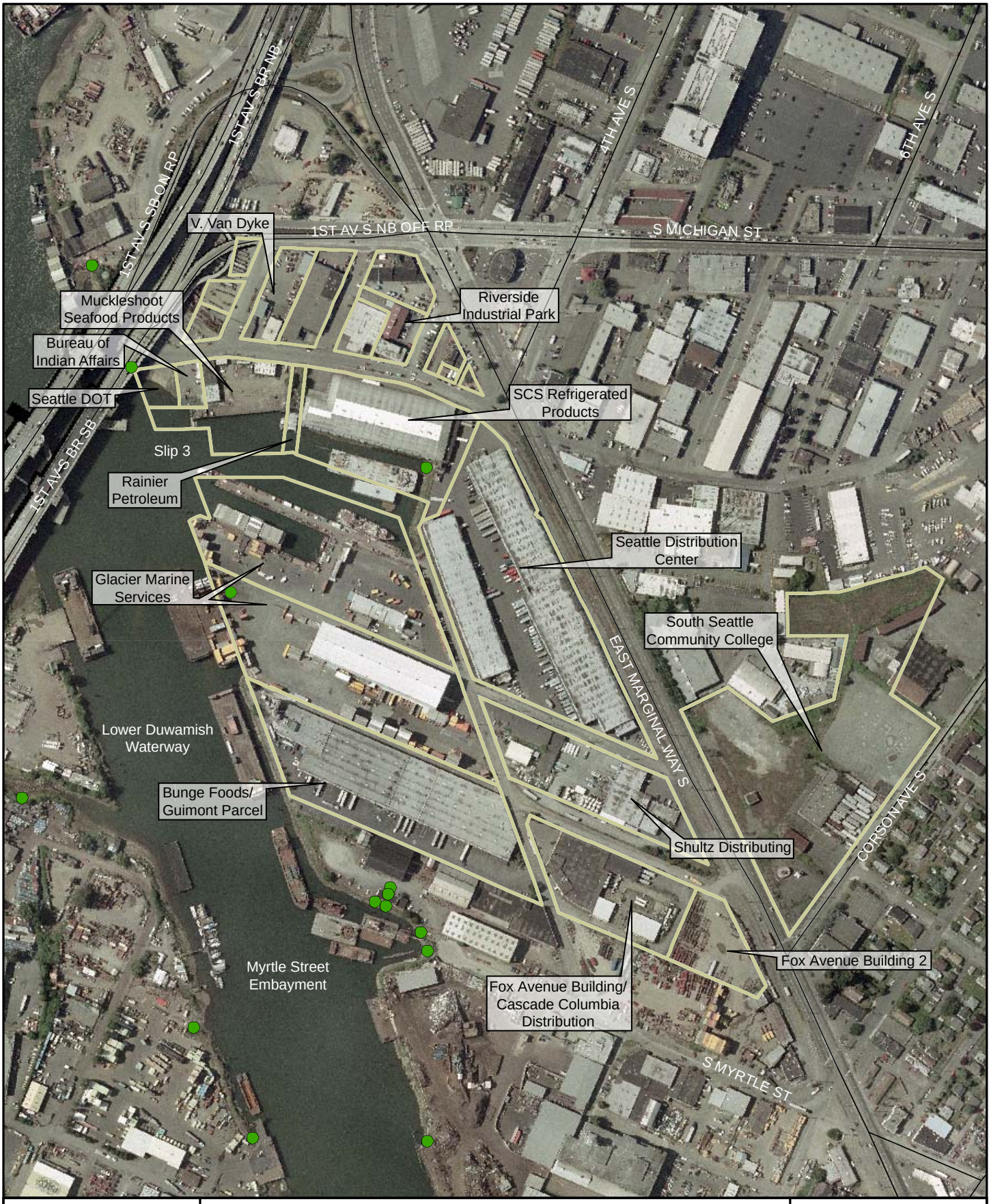
Chemical Class	Chemical	In-line Solids	Onsite CB Solids	Right-of-Way CB Solids
Metals	Arsenic	●		
	Copper	●		
	Lead	●		
	Mercury			●
	Zinc	●	●	●
PCBs	PCBs, total	●	●	●
PAHs	LPAH	●		
	HPAH	●		
Phthalates	Bis(2-ethylhexyl)phthalate	●	●	●
	Butylbenzylphthalate	●		●
	Dimethylphthalate			●
Other SVOCs	1,2-Dichlorobenzene	●		
	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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

16.3 Facility-Specific Source Control Actions

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



Key

- Property Boundary
- Road
- Outfall

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

0 135 270 540 810 1,080 Feet

WA State Plane North, NAD83

SAIC From Science to Solutions

N

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

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 6.3.

17.1 Business Inspections

- SPU continued conducting business inspections in the Seattle Boiler Works to Slip 4 source control area during the current reporting period (July 2009 through September 2010). A total of six inspections were conducted at three facilities, one in the S Garden Street SD basin (Seattle Iron & Metals) and two with stormwater drainage directly to the LDW (EWC Group and Seattle Transload). Inspections included two initial inspections and four follow-up inspections (Appendix B). Seattle Iron & Metals was identified by SPU as being out of compliance, as of the end of September 2010.
- Ecology conducted six inspections at five facilities within this source control area during the current reporting period (Appendix C). These include inspections at Seattle Iron & Metals, 600 S Garden Street, and the Seattle Iron & Metals truck parking area (across the street from the main facility). Ecology determined that the truck parking area is not covered under the Seattle Iron & Metals NPDES permit, and must apply for coverage under the ISGP. An application was subsequently submitted, but is on hold pending resolution of the PCHB stay on new permits.

17.2 Source Tracing

- S Myrtle Street SD: To date, SPU has collected one in-line solids grab sample, one onsite catch basin sample, and six right-of-way catch basin samples in the S Myrtle Street SD basin. During the current reporting period, one onsite catch basin sample (RD2 at Seattle Iron & Metals) and three right-of-way catch basin samples (RCB176, RCB180, and RCB189F) were collected in this drainage basin (Appendix D).
- S Garden Street SD: To date, SPU has collected one in-line solids grab samples, four onsite catch basin samples, and one right-of-way catch basin sample in the S Garden Street SD basin. During the current reporting period, three onsite catch basin samples (CB157F, CB157S, and RD1 at Seattle Iron & Metals) were collected in this drainage basin (Appendix D).

- 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 are presented in SPU 2010; 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		●	●
	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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

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

- Sampling of onsite and right-of-way catch basins in September 2008 and June 2009 in the vicinity of Seattle Iron & Metals (SIM) has identified mercury, copper, lead, zinc, PCBs, and phthalates in storm drain solids at concentrations above the sediment CSL. Stormwater from this facility drains to both the S Myrtle Street SD and the S Garden Street SD (Schmoyer 2010a).
- In November 2008, Ecology issued Follow-up Order No. 6185, requiring SIM to take corrective actions to prevent further violations of its NPDES permit. Under the Order, SIM was required to prepare a Stormwater Engineering Report, a Stormwater Quality Report, and a Mixing Zone Report. These reports were submitted to Ecology; however, no additional information is available as they were not included in the files reviewed during preparation of this Source Control Status Report.
- In November 2009, SPU requested that SIM collect samples of roof drains and parking lot catch basins (which discharge without treatment to the S Garden Street SD) to determine whether this stormwater should be routed to the facility's treatment system (Schmoyer 2010a).
- In an April 28, 2010 email to EPA, SPU expressed concern that pollutants from the SIM property is contaminating the City storm drain system and could, over the long-term, affect sediment quality in the LDW. Specific concerns include the potential for track-out of contaminated material onto S Myrtle and adjacent streets, atmospheric deposition of dust and debris that could migrate onto adjacent streets and properties, and the proposed expansion of SIM operations to the former Trim Systems property at 701 S Orchard Street (Schmoyer 2010a).
- In May 2010, SPU and EPA collected samples from two roof drains, two onsite catch basins (parking lot), and one right-of-way catch basin (next to the facility entrance driveway). The samples contained elevated levels of PCBs and metals (Schmoyer 2010b).
- In July 2010, Ecology requested EPA review of the Stormwater Engineering Report, Stormwater Quality Report, and Mixing Zone Report prepared by SIM. Ecology intended to approve the reports on a conditional basis so that SIM could make necessary improvements during the 2010 construction season. EPA recommended the inclusion of additional language in Ecology's conditional approval letter to indicate that, for reissuance of SIM's NPDES permit (WA-003196-8), additional studies to characterize

and rectify stormwater, atmospheric deposition, and all other potential source control issues would be required (USEPA 2010b).

- Also in July 2010, staff at Seattle Boiler Works, located adjacent to SIM on the north, provided Ecology with analytical results for a dust sample that was collected from the windshield wiper of a car parked at the facility. The windshield had been cleaned at the beginning of the work shift. The sample contained high concentrations of copper, lead, chromium, and zinc (Stegman 2010).
- As of the end of September 2010, Ecology was in the process of modifying the NPDES permit and treatment requirements for SIM. Although the PSCAA has indicated that SIM is in compliance with its air quality permit, however atmospheric deposition remains a concern for source control. EPA is planning to collect air/particulates samples. The City of Seattle is pursuing an enforcement action against SIM and is planning to conduct additional sampling of the street right-of-way. SIM has been cooperating with all parties for sampling, permit modification, access, and inspections (Cargill 2010).

Key

- Property Boundary
- Road
- Outfall

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

0 125 250 500 750 1,000 Feet

WA State Plane
North, NAD83

SAIC® From Science to Solutions

N

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. 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 one sediment trap sample, one in-line solids grab sample, and one onsite catch basin sample in the KCIA SD#1 basin. No 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 are presented in SPU 2010; 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	Zinc			
PAHs	LPAH			
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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

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.

- Insurance Auto Auctions, Inc. submitted a *Stormwater System Investigation—First Quarterly Data Report* to Ecology on August 27, 2010 (Windward 2010d). The first quarterly report documents results of the inspections and sampling performed in accordance with the *Stormwater System Investigation Plan* (Windward 2010a).
- AMEC, on behalf of 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 2010c).

Key

- Property Boundary
- Road
- Outfall

Figure 18–1. RM 3.9 – 4.4 East: Slip 6 Source Control Area

0 175 350 700 1,050 1,400 Feet

WA State Plane North, NAD83

SAIC From Science to Solutions

N

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. A SCAP had not been finalized for this source control area as of the end of the current reporting period.

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 2010e)
SCAP	Draft SCAP submitted September 2010; final SCAP to be published in December 2010.

A Data Gaps Report was completed for the BDC source control area in September 2010. The Data Gaps Report identified stormwater discharges from 10 private outfalls within the RM 4.3-4.9 East source control as a potential source of sediment recontamination.

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.

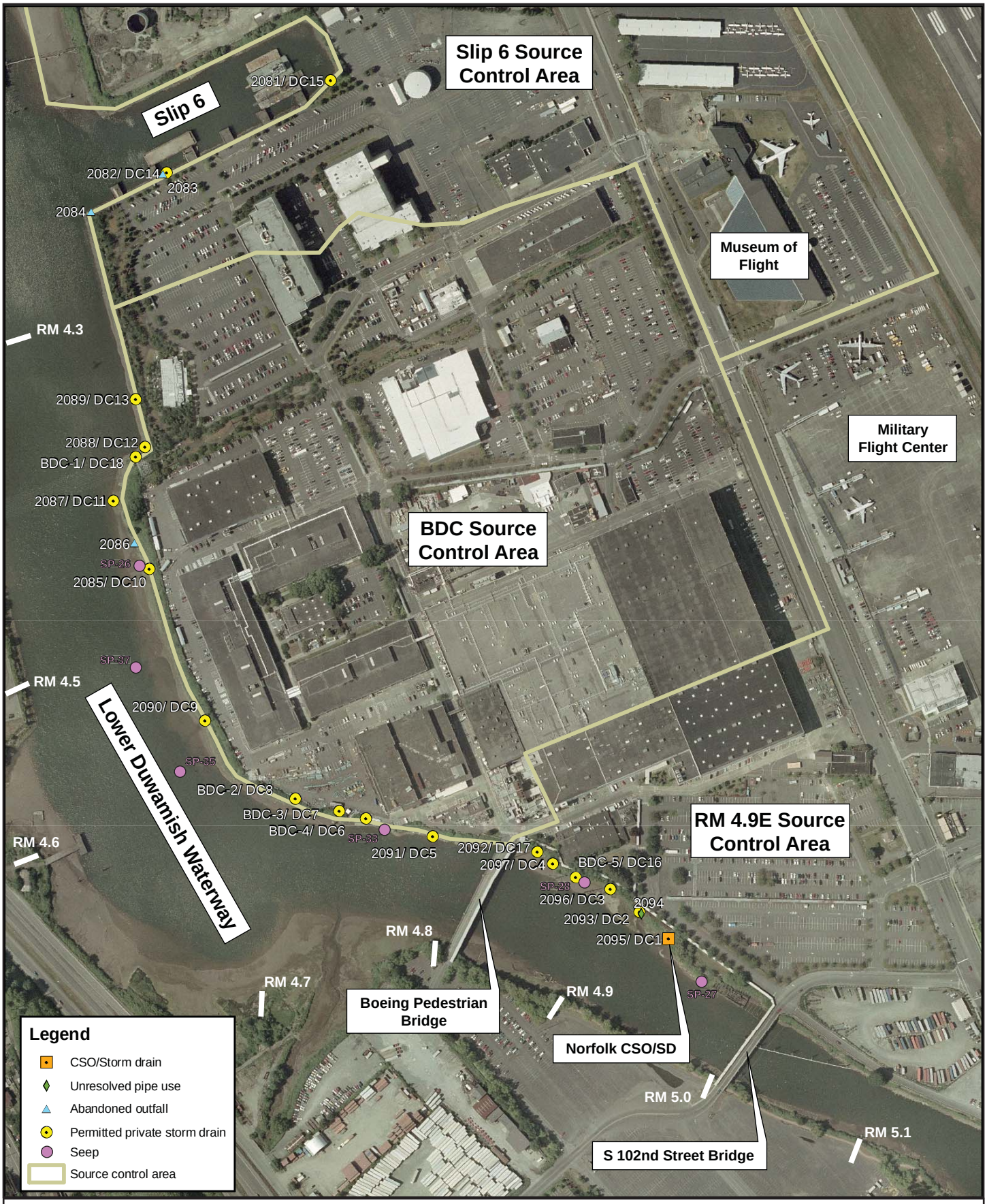
19.2 Source Tracing

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

19.3 Facility-Specific Source Control Actions

- According to Ecology's June 30, 2010 Site Register, Ecology received a Final Cleanup Report for **A&M Developmental Center**, located at 9725 East Marginal Way S (Facility Site ID 2101). A&M Developmental Center is an alternate name for BDC. Soil, groundwater, air, sediment, and surface water are contaminated with petroleum products, halogenated organic compounds, metals, and non-halogenated solvents. Site status listing indicates that consultation has been completed.

This page intentionally left blank.



SAIC From Science to Solutions

Figure 19–1. RM 4.3–4.9 East (BDC) Source Control Area

0 250 500 1,000 Feet

N

DEPARTMENT OF ECOLOGY State of Washington

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 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 is expected to be completed in August 2011.

20.1 Business Inspections

- During the current reporting period, SPU completed a total of 17 business inspections at eight facilities in the SW Dakota Street SD basin, including eight initial inspections and nine follow-up inspections (Appendix B). One facility, Wheelchairs Plus, Inc., was identified by SPU as being out of compliance as of the end of September 2010.
- In addition, a total of 36 inspections were conducted at 14 facilities in the SW Idaho Street SD basin, including 13 initial inspections and 23 follow-up inspections (Appendix B). The following two facilities were identified by SPU as being out of compliance as of the end of September 2010:
    - Penthouse Drapery;
    - Tank Wise LLC.
- During the current reporting period, SPU identified an illicit discharge to the SD system at Aquatic Enterprises, Inc., located within the SW Idaho Street SD basin. As of April 16, 2010, the company had stopped all outside work and moved all equipment indoors.
- During the current reporting period, SPU referred five facilities within this source control area to other agencies:
    - Expert Marble & Granite, Inc. (referred to KCIW);
    - West Seattle Radiator Services (referred to Ecology WQ);
    - Concrete Restoration Inc. (referred to Ecology WQ);
    - Aquatic Enterprises, Inc. (referred to Ecology WQ);
    - Penthouse Drapery (referred to Ecology WQ).
- Ecology conducted a business inspection at one additional facility within this source control area during the current reporting period (West Seattle Recycling Center).

20.2 Source Tracing

- SW Idaho Street SD: To date, SPU has collected three sediment trap samples, five in-line solids grab samples, and three right-of-way catch basin samples in the SW Idaho Street SD basin. No samples were collected during the current reporting period.
- SW Dakota Street SD: 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. During the current reporting period, one onsite catch basin sample (CB41C at West Seattle Radiator)

and one right-of-way solids sample (RCB185) were collected in this drainage basin (Appendix D).

- 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 are presented in SPU 2010; 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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

20.3 Facility-Specific Source Control Actions

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

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

Preparation of a Data Gaps Report for the RM 1.0-1.3 West (Kellogg Island to Lafarge Cement) source control area is currently in progress; the Data Gaps Report is expected to be completed in June 2011. There are no public storm drains that discharge to the LDW within this source control area.

21.1 Business Inspections

- Ecology WQ conducted an inspection at Lafarge Cement on December 8, 2009 (Appendix C). The purpose of the inspection was to assess compliance of contaminated dirt piles in support of an Administrative Order issued to Lafarge in December 2009.

21.2 Source Tracing

- SPU has collected four onsite catch basin samples at the Lafarge Cement property. None of these samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Complete sample results are presented in SPU 2010; sample locations are shown in Figure 3-2. 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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

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. Under the settlement, Lafarge agreed to install and implement control technologies to reduce emissions of nitrogen oxides and sulfur dioxide at their cement plants (USDOJ 2010a).
- Lafarge announced on April 29, 2010 that the company will cease clinker production at the Seattle plant at the end of 2010. At that time, the facility will be transitioned from a clinker/cement manufacturing operation to a cement grinding, blending and shipping operation (Lafarge 2010).
- Ecology is currently reviewing draft NPDES Permit WA-000223-2, which covers three stormwater outfall discharges from the Lafarge facility to the LDW. The frequency and volume of stormwater discharge is expected to increase in 2010, when the cement manufacturing process is discontinued at this site (Ecology 2010l) because stormwater will no longer be recycled and used in the cement manufacturing process.

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

- Business inspections in the SW Kenny Street SD basin are discussed with the Terminal 115 source control area in Section 23. No other business inspections were conducted within this source control area during the current reporting period.

22.2 Source Tracing

- Sediment trap, in-line solids, and right-of-way solids samples collected by SPU in the SW Kenny Street SD basin are discussed with the Terminal 115 source control area in Section 23.
- SPU has collected 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, with the exception of one in-line solids sample in the SW Kenny Street SD, as described in Section 23 below.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Complete sample results are presented in SPU 2010; sample locations are shown in Figure 3-2. Storm drain screening levels are defined in Section 3.2.

Chemical Class	Chemical	Onsite CB Solids
Metals	Arsenic	
	Copper	
	Lead	
	Mercury	
	Zinc	
PCBs	PCBs, total	
PAHs	LPAH	

Chemical Class	Chemical	Onsite CB Solids
	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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

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

- Duwamish Shipyard, Inc. entered into an Agreed Order with Ecology, effective September 13, 2010. Under Agreed Order DE-6735, Duwamish Shipyard will conduct an RI/FS at the site (Ecology 2010p).
- In accordance with the Agreed Order, Anchor (for Duwamish Shipyard) submitted a Final Work Plan for a Remedial Investigation/Feasibility Study to Ecology in August 2010. The report describes the scope of upland and sediment investigations to be performed at Duwamish Shipyard and adjacent aquatic areas (Anchor 2010b).
- RI tasks include: review of Glacier Northwest property data; assessment of potential future land uses; a survey of former stormwater vaults, piping, and USTs; a direct-push soil investigation; installation and testing of 10 groundwater monitoring wells; evaluation of applicable cleanup levels; review of channel and berth area dredging histories; evaluation of sediment stability; and surface/subsurface sediment testing (Anchor 2010b).

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 in May 2009. Under Agreed Order No. DE 6000, effective July 28, 2009, Glacier and Reichhold will conduct an RI/FS at the site (Ecology 2009d, 2009j).
- During July and October of 2009, Glacier Northwest conducted a historical stormwater piping investigation on the southern portion of the property. Field activities confirmed the presence of a portion of a 15-inch diameter pipe and a pipe that ties into the SPU storm drain south of the site. Five catch basins from historical records were not located during the investigation.
- In November 2009, Glacier Northwest submitted a Technical Memorandum summarizing the historical stormwater piping investigation to Ecology; the Memorandum concludes that, based on a records review, an in-pipe camera survey, and multiple test pit excavations, the stormwater piping does not appear to present a contaminant migration pathway to the LDW (ERM-West 2009). In addition, the Memorandum recommended that the 15-inch pipe be abandoned by cutting and capping near the south entrance of the property.
- In April 2010, the PLPs notified Ecology of their plans to commence groundwater sampling, and submitted a Sampling and Analysis Plan (ERM-West 2010a). Ecology requested that additional parameters be added for analysis, including the full suite of priority pollutant metals, SVOCs, and dioxins/furans for two specific wells. The PLPs declined to add the requested parameters. Ecology notified the PLPs that they may need to resample in the future under an approved sampling plant that meets RI/FS requirements (Ecology 2010o).
- The PLPs conducted groundwater sampling on May 27 and 30, 2010, and submitted results to Ecology on August 5, 2010 (Ecology 2010o). Results were not available at the time this Source Control Status Report was prepared.
- Glacier Northwest submitted a draft Data Gaps Report to Ecology on October 28, 2009. Ecology provided review comments on the draft Data Gaps Report to Glacier Northwest on June 28, 2010. On August 9, 2010, Ecology received responses to Ecology's comments. On September 10, 2010, Ecology approved a request for modifications to the project schedule and suspended the requirement for a final Data Gaps Report (Ecology 2010o).

- Glacier Northwest submitted a draft outline of the RI/FS Work Plan on September 30, 2010 (ERM-West 2010b). The draft RI/FS Work Plan is due to Ecology on November 15, 2010 (Ecology 2010o).

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

- The Port of Seattle drilled monitoring wells and collected soil and groundwater samples at N Terminal 115 between October 27 and November 12, 2009. Ecology had not reviewed the Work Plan for this activity. Ecology collected split samples where possible (Ecology 2010o).
- On January 5, 2010, the Port of Seattle submitted a Final Environmental Investigation Report for the N Terminal 115 site (Ecology 2010o).
- Ecology prepared a draft Agreed Order, Scope of Work, and Schedule in January 2010. The Agreed Order documents were revised in response to Port of Seattle comments, and re-sent to the Port of Seattle on May 4. The Port of Seattle and Ecology are currently negotiating the details of the Agreed Order (Ecology 2010o).

Key

- Property Boundary
- Road
- Outfall

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

0 75 150 300 450 600 Feet

WA State Plane North, NAD83

N

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 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. Preparation of a SCAP for the Terminal 115 source control area is currently in progress. The Data Gaps Report was completed in June 2011, after the current reporting period.

23.1 Business Inspections

- SPU continued conducting business inspections in the Terminal 115 source control area during the current reporting period (July 2009 through September 2010). A total of 15 inspections were conducted at six facilities in the SW Kenny Street SD basin, including six initial inspections and nine follow-up inspections. All facilities were identified by SPU as being in compliance as of the end of September 2010.
- Also during the current reporting, SPU conducted a total of 10 inspections at three facilities in the Highland Park Way SW SD basin, including three initial inspections and seven follow-up inspections (Appendix B). All facilities were identified by SPU as being in compliance as of the end of September 2010.
- In addition, SPU conducted two inspections at one facility (Commercial Fence) that discharges to the LDW via a Port-owned outfall. This facility had come into compliance as of the end of September 2010 by taking measures (along with the Port) to reduce track-out of mud and debris from the site, and by posting the necessary spill plan for their fueling area.
- SPU also conducted a screening inspection at Icicle Seafoods and an initial inspection at Seafreeze, both tenants at the Terminal 115 property. No compliance issues were identified (Appendix B).
- Ecology conducted four inspections at three facilities during the current reporting period, including a Stormwater Permit Compliance Inspection at Pioneer Industries on November 3, 2009. The Ecology inspector issued a warning letter to Pioneer Industries for failure to have an adequate SWPPP, inconsistent monitoring, and collecting stormwater samples from the wrong location (Appendix C).
- During the current reporting period, SPU identified an illicit discharge to the SW Kenny Street SD at Emswiler Construction. As of February 11, 2010, the facility had stopped discharging equipment washwater to the onsite stormwater treatment system (SPU 2010).

23.2 Source Tracing

- SPU has collected two sediment trap samples, three in-line solids grab samples, one onsite catch basin sample, and one right-of-way catch basin sample in the Highland Park Way SW basin. No samples were collected during the current reporting period.

- In addition, SPU has collected one sediment trap sample, three in-line solids grab samples, and four right-of-way catch basin samples in the SW Kenny Street SD. During the current reporting period, one in-line solids sample (KN-ST1) was collected in the SW Kenny Street drainage basin (Appendix D).
- SPU collected a catch basin sample (CB91) from the Port drainage system on Terminal 115 in May 2006, but no samples were 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 planned to be collected in October 2010 and May 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 are presented in SPU 2010; 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		●		
Other SVOCs	2-Methylnaphthalene				
	4-Methylphenol				
	Benzyl alcohol				
	Dibenzofuran				
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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

23.3 Facility-Specific Source Control Actions

Port of Seattle Terminal 115

- In October and December 2009, two rounds of groundwater monitoring were performed at Terminal 115's Cardlock Facility. Wells MW-15 through MW-17, MW-19 and MW-

21 were sampled. Groundwater samples were analyzed for diesel- and lube oil-range hydrocarbons and metals. The diesel-range hydrocarbon concentration in well MW-19 exceeded the MTCA Method A cleanup level in October. In December, the diesel-range hydrocarbon concentration in well MW-19 was slightly below the MTCA Method A cleanup level. Petroleum hydrocarbons were not detected in the remaining wells (OnSite Environmental 2009a).

- Arsenic, barium, cadmium, chromium, lead, and selenium were detected in groundwater. Arsenic concentrations exceeded the MTCA Method A cleanup level in wells MW-15 and MW-19 in the October and December samples. Chromium and lead exceeded the MTCA Method cleanup level in well MW-15 in December. Cadmium was detected in well MW-15 at a concentration below the MTCA Method A cleanup level (OnSite Environmental 2009b). MTCA Method A cleanup levels have not been promulgated for barium and selenium. Cadmium and lead concentrations exceeded the groundwater-to-sediment screening levels at well MW-15.
- In March 2010, TEC Inc. (for the Port of Seattle) prepared the *Recontamination Study for T-115 Work Plan*. The study includes installation of sediment traps at five locations selected to represent drainage sub-basins (TEC 2010). Dry season and wet season sediment trap samples will be collected in October 2010 and April 2011, respectively. If enough solids material is present, grab samples will be collected at each sediment trap location during deployment and retrieval of the sediment traps. Samples will be analyzed for dioxins/furans, PAHs, total solids, TOC, SVOCs, metals, and grain size.
- In April 2010, the Port of Seattle collected inline solids samples from storm drain lines connected to Outfalls 2123, 2124, 2125, and 2220. The samples were analyzed for metals, SVOCs, and dioxins (Kuroiwa 2010a). Mercury, zinc, and phthalates were detected at concentrations above storm drain screening levels. Dioxin concentrations ranged from 0.7 to 1,252 ng/kg. A report summarizing results of inline solids and sediment trap sampling will be published in summer 2011.

This page intentionally left blank.

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. 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 August 2011.

24.1 Business Inspections

- SPU completed a total of 32 inspections at 20 facilities in the 1st Avenue S SD basin, including five screening visits, 15 initial inspections, and 12 follow-up inspections (Appendix B). All but the following two facilities were identified by SPU as being in compliance as of the end of September 2010:
  - First Student Inc.;
  - Samson Tug and Barge.
- During the current reporting period, SPU referred four facilities within this source control area to other agencies:
  - First Student Inc. (referred to KCIW and Ecology WQ);
  - Nuprecon (referred to KCIW);
  - Samson Tug and Barge and Vista Pro Automotive (referred to Ecology WQ).
- Ecology conducted 17 inspections at 14 facilities in this source control area during the current reporting period (Appendix C).

24.2 Source Tracing

- SPU has collected four sediment trap samples, 13 in-line solids grab samples, and one onsite catch basin sample in the 1st Avenue S SD basin. During the current reporting period, two in-line solids samples (1st-ST3 and 1st-ST5) were collected from this drainage system (Appendix D).
- 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 are presented in SPU 2010; 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		●	
	HPAH		●	

Chemical Class	Chemical	Sediment Traps	In-line Solids	Onsite CB Solids
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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

24.3 Facility-Specific Source Control Actions

South Recycling and Disposal Station

- The City of Seattle submitted an application in September 2009 for a Master Use Permit and an Addendum to the State Environmental Policy Act (SEPA) Checklist for re-construction of the South Recycling and Disposal Station, located at 200 S Kenyon Street. The City proposed to demolish existing structures on two properties (north and south) and construct new facilities on the north property during 2010-2012. Demolition of structures on the north property was completed in 2010, and construction of new facilities on this property has begun. Construction on the south property would occur during 2013 through 2015. The SEPA Checklist Addendum analyzes the potential environmental impacts of the project.

25.0 RM 2.2-3.4 West (Riverside Drive)

The RM 2.2-3.4 West (Riverside Drive) source control area includes the 7th Avenue S SD basin. A Data Gaps Report is scheduled to be completed for this source control area in 2011.

25.1 Business Inspections

- SPU conducted a total of 80 business inspections at 54 facilities in the 7th Avenue S SD basin during the current reporting period (July 2009 through September 2010). This includes 22 screening visits, 30 initial inspections, and 28 follow-up inspections (Appendix B).
- All but the following three facilities were identified by SPU as being in compliance as of the end of September 2010:
    - Gil's Aluminum & Shell Core Shop;
    - Jon's Recycling;
    - Marine Lumber Services.
- In addition, a total of seven inspections were conducted at three facilities with stormwater drainage directly to the LDW, including three initial inspections and four follow-up inspections. All facilities were identified by SPU as being in compliance as of the end of September 2010.
- During the current reporting period, SPU referred three facilities within this source control area to other agencies for follow-up:
    - Eagle Eye Enterprise Corp. (referred to KCIW);
    - Olympic Steel Door Inc. and Redox Inc. (referred to Ecology HWTR and Ecology WQ).

25.2 Source Tracing

- To date, SPU has collected three sediment trap samples, 13 in-line solids grab samples, three onsite catch basin samples, and 11 right-of-way catch basin samples in the 7th Avenue S SD basin. During the current reporting period, two in-line solids samples (7th-ST1, 7th-ST3) and two onsite catch basin samples (CB154 and CB155) were collected in this drainage basin (Appendix D).
- In addition, SPU collected one onsite catch basin sample in an area of the source control area that discharges directly to the LDW (CB206), and one sample from an onsite catch basin that discharges to the 8th Avenue S CSO (CB113).
- 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 are presented in SPU 2010; 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				
Other SVOCs	2-Methylnaphthalene				
	2-Methylphenol			●	
	4-Methylphenol				
	Benzoic acid				
	Benzyl alcohol			●	
	Dibenzofuran				
	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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

25.3 Facility-Specific Source Control Actions

Independent Metals Recycling

- Ecology conducted a stormwater compliance inspection at Independent Metals, 816 S Kenyon Street, on November 3, 2009. The facility has an oil/water separator and a sand filter treatment system. The facility's stormwater permit (WAR009725) includes activities at the former Silver Bay Logging area adjacent to Independent Metals. The Ecology inspector determined that the facility is not in compliance with the ISGP, and a warning letter was issued on December 23, 2009 (Ecology 2009n). The following corrective actions were identified:
    - Review and update the SWPPP;
    - Implement measures to prevent track-out of dirt and debris onto 8th Avenue S;
    - Prevent the discharge of petroleum and/or contaminated stormwater into holes in the pavement;

    - Add total mercury and total PCBs to the sampling of stormwater discharges from the treatment system.

- No information on follow-up inspections was available.
- On April 22, 2010, a propane tank at the facility exploded. The blast caused no injuries or significant damage to the structure (KOMO News 2010).

640 S Riverside Drive

- On May 24, 2009, SPU submitted a MTCA Release Report to Ecology for the 640 S Riverside Drive properties. SPU had condemned this property for the construction of the South Park Pump Station/Water Quality Facility, an SPU drainage improvement project in the 7th Avenue S SD system. The pump station is designed to allow the system to function over the entire tidal cycle; currently, the drainage system backs up during high tides and is not capable of adequately conveying storm flow, which creates flooding problems in the drainage basin (SPU 2009). The treatment system is designed to treat 80 percent of the average annual runoff from the 232-acre drainage basin.
- Phase I environmental site assessments were conducted for both properties in 2007 (Herrera 2007a, 2007b). The assessments concluded that, although there was no evidence of contamination due to disposal of hazardous substances, illegal dumping, or improper handling of materials, the industrial nature of the property warranted further assessment.
- Soil and groundwater sampling were conducted at the two properties during 2007 through 2009. Samples collected at the 640 S Riverside property in 2009 indicated elevated levels of metals (lead), cPAH, VOCs (tetrachloroethene [PCE], TCE), diesel, and oil in soil, and metals (arsenic, lead) and VOCs (vinyl chloride, PCE, TCE, and DCE in groundwater (Herrera 2008, PGG 2008, SPU 2009).
- SPU has submitted an interim action plan to Ecology's VCP to remove the bulk of the VOC contamination from the soil in areas where the Pump Station/Water Quality Facility will be constructed, and will conduct a partial removal of lead and cPAH-contaminated soil in locations outside the facility construction area. Ecology is evaluating whether further remedial action will be necessary following the completion of SPU's cleanup.

This page intentionally left blank.

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. A Data Gaps Report is scheduled to be completed for this source control area in 2011.

26.1 Business Inspections

SPU began conducting business inspections in the Sea King Industrial Park source control area during the current reporting period (July 2009 through September 2010).

- A total of four initial inspections were conducted by SPU in the S 96th Street SD basin (Appendix B). None of these four facilities were identified by SPU as being in compliance as of the end of September 2010:
  - Atacs Products Inc.;
  - Avidex;
  - Filterfresh Seattle;
  - Halfon Candy Co. Inc.
- Ecology conducted 42 compliance inspections at 38 facilities in the Sea King Industrial Park source control area during the current reporting period (Appendix C).
- Ecology WQ has conducted several NPDES ISGP compliance inspections at PSF Mechanical (9322 14th Avenue S). On June 9, 2010, the compliance inspection resulted in the issuance of a Notice of Noncompliance. The facility was directed to fully implement the SWPPP that was developed for the facility.

26.2 Source Tracing

- SPU has collected three sediment trap samples, seven in-line solids grab samples, and two right-of-way catch basin samples in the S 96th Street SD basin. No samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Complete sample results are presented in SPU 2010; 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			
	HPAH			
Phthalates	Bis(2-ethylhexyl)phthalate			
	Butylbenzylphthalate			
Other SVOCs	4-Methylphenol			
	Benzyl alcohol			

Chemical Class	Chemical	Sediment Traps	In-line Solids	Right-of-Way CB Solids
	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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

26.3 Facility-Specific Source Control Actions

Puget Sound Coatings

- During routine testing of stormwater at Puget Sound Coatings, 9220 8th Avenue S, chromium was discovered in stormwater at a concentration of approximately 3,000 ug/L (Ecology 2010m). Further testing indicated that the chromium was in the form of hexavalent chromium. Puget Sound Coatings does not use any processes that involve chromium or metal plating. After further investigation, they concluded that groundwater contaminated with chromium is infiltrating into their onsite storm drain system. Stormwater at Puget Sound Coatings flows to a treatment system, then is discharged to a pipe that runs beneath the property to the east, daylights in a parking area, and is then discharged to a municipal storm drain which flows to the S 96th Street SD.
- Puget Sound Coatings is located directly north of Fruehauf Trailer Services, and to the northeast of Advance Electroplating/CB Commercial. In 1995, EPA conducted a removal action at Advance Electroplating/CB Commercial, which included removal of several tons of soil, hundreds of drums of plating chemicals and wastes, and onsite treatment of soil. Advance Electroplating/CB Commercial appears to be cross-gradient from Puget Sound Coatings. However, Advance Electroplating/CB Commercial was included in the Fruehauf Prospective Purchaser Agreement (PPA) Consent Decree between EPA and South Park Industrial Properties, LLC (USEPA 2003).
- The PPA acknowledges that VOCs and hexavalent chromium migrated from Advance Electroplating to Fruehauf in the shallow and deep aquifers beneath Fruehauf. The extent of the plume was never defined. EPA asserts that they are unable to pursue further action at the site with South Park Industrial Properties, LLC, due to the language in the PPA. A low-lying area to the north of Advance Electroplating separates Puget Sound Coatings from a low-income residential neighborhood. Groundwater seeps into the low-lying area could pose a risk to residents (Ecology 2010o). Ecology is currently evaluating further action.

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. A Data Gaps Report is scheduled to be completed for this source control area in 2011. No business inspections have been conducted in the RM 4.2-4.8 West source control area.

27.1 Business Inspections

- Ecology has conducted one source control inspection in the Restoration Areas source control area (Appendix C).

27.2 Source Tracing

- SPU has collected one sediment trap sample, two in-line solids grab samples, two onsite catch basin samples, and two right-of-way catch basin samples in the Hamm Creek SD basin. No samples were collected during the current reporting period.
- Chemicals detected at concentrations above storm drain screening levels are identified below. Complete sample results are presented in SPU 2010; 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 September 2010).

● = Exceedance of screening level was observed during the current reporting period (July 2009 through September 2010).

27.3 Facility-Specific Source Control Actions

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

This page intentionally left blank.

28.0 References

Adapt Engineering, Inc. 2009. Surface Soil Sampling Results, North Star Casteel Properties, South Bradford Street, Seattle, WA 98108. July 24, 2009.

AECOM. 2009. 6th Semiannual (July – December 2009) Operations and Maintenance Report, Terminal 117 Time-Critical Removal Action. Prepared for the Port of Seattle and the City of Seattle by AECOM, Seattle, WA. December 18, 2009.

AECOM. 2010. Draft Final Feasibility Study. Lower Duwamish Waterway, Seattle, Washington. Prepared by AECOM for the Lower Duwamish Waterway Group. October 15, 2010.

AMEC. 2009. PCB Closure and Characterization Plan, Former Kelly-Moore Manufacturing Facilities, 5410 Airport Way South, Seattle, Washington. Prepared by AMEC Geomatrix, Inc., for Kelly-Moore Paint Company, Inc. July 2009.

AMEC. 2010a. Polychlorinated Biphenyl (PCB) Investigation and Cleanup Report, Former Kelly-Moore Manufacturing Facility, 5410 Airport Way South, Seattle, Washington. Prepared by AMEC Geomatrix, Inc., for Kelly-Moore Paint Company, Inc. January 2010.

AMEC. 2010b. Memo from Tanskya Gray, AMEC, to Daniel Duncan, USEPA Region 10, Re: Addendum to PCB Investigation Report, Former Kelly-Moore Manufacturing Facility. April 22, 2010.

AMEC. 2010c. Draft Remedial Investigation Report, 8801 East Marginal Way South, Tukwila, Washington. Agreed Order No. 6069. Prepared by AMEC Earth & Environmental, Inc. September 30, 2010.

Anchor. 2009. Draft Engineering Evaluation/Cost Analysis, Jorgensen Forge Facility, 8531 East Marginal Way South, Seattle, Washington. Prepared by Anchor QEA, LLC, for Earl M. Jorgensen Company and Jorgensen Forge Corporation. March 2009.

Anchor. 2010a. 15-Inch and 24-Inch Property Line Storm Pipes Cleanup Work Plan, Stormwater Source Control Implementation, Lower Duwamish Waterway, Seattle, Washington. Prepared by Anchor QEA, LLC, and Floyd|Snider. July 2010.

Anchor. 2010b. Final Work Plan. Remedial Investigation and Feasibility Study, Duwamish Shipyard, Inc., Seattle, Washington. Prepared by Anchor QEA, LLC for Duwamish Shipyard, Inc. August 2010.

Anderson, C. 2010. Email from Carl Anderson, Ecology, to Dan Cargill, Richard Thomas, and Sarah Mansfield, Ecology, Re: Duwamish Sediment Plume at J.A. Jack & Sons. July 1, 2010.

Aspect. 2010a. Memorandum from Doug Hillman, Dana Cannon, and Jeremy Porter, Aspect Consulting, to Ed Jones, Ecology, Re: Reconnaissance Probe Results and Proposed Monitoring Well Locations West of 1st Avenue Probes (SPO-39 through SPO-45), Art Brass Plating, Agreed Order No. DE 5296. January 25, 2010.

Aspect. 2010b. Memorandum from Doug Hillman and Dana Cannon, Aspect Consulting, to Ed Jones, Ecology, Re: Results from Hydraulic Studies – Tidal Study and Slug Test, Art Brass Plating. August 5, 2010.

Aspect. 2010c. Memorandum from Doug Hillman and Dana Cannon, Aspect Consulting, to Ed Jones, Ecology, Re: Porewater Sampling Work Plan, Art Brass Plating, Agreed Order No. DE 5296. September 23, 2010.

Bergam, M. 2010. Email from Mark Bergam, King County, to David Batts and Dan Cargill, Ecology, Re: FAA taxiway rehabilitation project. April 12, 2010.

Best, R. 2010. Email from Rachel Best, Ecology, to David Misko, Ecology, Re: HWTR count for Lower Duwamish from 1/1/07 to 3/9/10 = 227. March 9, 2010.

Boeing. 2010. Letter from Will Ernst, The Boeing Company, to Shawn Blocker, USEPA, Re: Boeing Plant 2, Periodic Progress Report No. 200 (August 2010). September 7, 2010.

Cadman. 2009. Letter from Rob Johnson, Cadman, Inc., to Lydia Eng, Industrial Waste Program, King County, Re: Cadman Seattle Metro Permit Application. December 28, 2009.

Calibre. 2009. 2009 Annual Sampling Report, South Storm Drain System, Boeing Developmental Center. Prepared by CALIBRE Systems for the Boeing Company. December 2009.

Cargill, D. 2010. Email from Dan Cargill, Ecology, to Pinky Feria, Ecology, Re: Request for information sharing on Auto Shred. September 27, 2010.

Clean Harbors. 2010. Post Cleanup Report, Rainier Commons Property, 2160 Airport Way, Seattle, WA. Prepared by Clean Harbors Environmental Services for Ariel Development. August 24, 2010.

Dumaliang, P. 2009. Email from Peter Dumaliang, KCIA, to Robert Wright, Ecology, Re: Outfall #2 and KCIA South Pumpstation Stormwater Lab Results. April 6, 2009.

Dumaliang, P. 2010a. Email from Peter Dumaliang, KCIA, to David Batts and Dan Cargill, Ecology, Re: KCIA Sweeping and other info. April 13, 2010.

Dumaliang, P. 2010b. Email from Peter Dumaliang, KCIA, to Dan Cargill, Ecology, Re: King County Airport Catch Basin Cleaning. November 10, 2010.

E&E (Ecology and Environment). 2007a. Lower Duwamish Waterway Early Action Area 4, Summary of Existing Information and Data Gaps Report. Prepared by Ecology and Environment, Inc. for Washington Department of Ecology. June 2007.

E&E. 2007b. Lower Duwamish Waterway Early Action Area 7, Final Summary of Existing Information and Identification of Data Gaps Report. Prepared by Ecology and Environment, Inc. for Washington Department of Ecology. September 2007.

E&E. 2008a. Lower Duwamish Waterway, RM 3.9-4.4 East (Slip 6), Summary of Existing Information and Identification of Data Gaps, Final Report. Prepared by Ecology & Environment, Inc. for Washington Department of Ecology. February 2008.

E&E. 2008b. Lower Duwamish Waterway, River Mile 2.0-2.3 East (Slip 3 to Seattle Boiler Works) Source Control Area, Summary of Existing Information and Identification of Data Gaps. Final Report. Prepared by Ecology and Environment Inc. for Washington State Department of Ecology Toxics Cleanup Program. June 2008.

E&E. 2008c. Lower Duwamish Waterway River Mile 0.0-0.1 East (Spokane Street to Ash Grove Cement) Summary of Existing Information and Identification of Data Gaps. Prepared by Ecology and Environment Inc. for Washington State Department of Ecology Toxics Cleanup Program. December 2008.

E&E. 2009. Lower Duwamish Waterway River Mile 1.2-1.7 East (Saint Gobain to Glacier Northwest) Summary of Existing Information and Identification of Data Gaps. Final Report. Prepared by Ecology and Environment, Inc. for Washington State Department of Ecology Toxics Cleanup Program. February 2009.

Ecology (Washington State Department of Ecology). 2004a. Lower Duwamish Waterway Source Control Strategy. Publication No. 04-09-043. Prepared by Washington State Department of Ecology, Northwest Regional Office, Toxics Cleanup Program. January 2004.

Ecology. 2004b. Lower Duwamish Waterway Source Control Action Plan for the Duwamish/Diagonal Way Early Action Cleanup. Publication No. 04-09-003. Prepared by Rick Huey and Dan Cargill, Toxics Cleanup Program, Northwest Regional Office, Washington State Department of Ecology. December 2004.

Ecology. 2005. Lower Duwamish Waterway Source Control Action Plan for the Terminal 117 Early Action Area. Publication No. 05-09-093. Prepared by Dan Cargill, Toxics Cleanup Program, Northwest Regional Office, Washington State Department of Ecology. July 2005.

Ecology. 2006. Lower Duwamish Waterway Source Control Action Plan for the Slip 4 Early Action Area. Publication No. 06-09-046. Produced by Dan Cargill, Toxics Cleanup Program, Washington State Department of Ecology, and Science Applications International Corporation. July 2006.

Ecology. 2007a. Lower Duwamish Waterway Source Control Action Plan for Early Action Area 2. Publication No. 07-09-002. Produced by Sarah Good, Toxics Cleanup Program, Washington State Department of Ecology, and Science Applications International Corporation. June 2007.

Ecology. 2007b. Lower Duwamish Waterway Source Control Status Report, 2003 to June 2007. Publication No. 07-09-064. Produced by Dan Cargill, Toxics Cleanup Program, Washington State Department of Ecology, and Science Applications International Corporation. July 2007.

Ecology. 2007c. Agreed Order No. DE-4127, Jorgensen Forge Corporation. Washington State Department of Ecology. Effective Date July 12, 2007.

Ecology. 2007d. Lower Duwamish Waterway Source Control Action Plan for Early Action Area 7. Publication No. 07-09-003. Produced by Sarah Good, Toxics Cleanup Program, Washington State Department of Ecology, and Ecology & Environment, Inc. September 2007.

Ecology. 2007e. Lower Duwamish Waterway Source Control Action Plan for Glacier Bay Source Control Area. Publication No. 07-09-005. Produced by Sarah Good, Toxics Cleanup Program, Washington State Department of Ecology, and Science Applications International Corporation. November 2007.

Ecology. 2007f. Lower Duwamish Waterway Source Control Action Plan for Early Action Area 4. Publication No. 07-09-004. Produced by Sarah Good, Toxics Cleanup Program, Washington State Department of Ecology, and Ecology & Environment, Inc. December 2007.

Ecology. 2008a. Enforcement Order No. DE 5479. Blaser Die Casting Co., Washington State Department of Ecology. Effective March 25, 2008.

Ecology. 2008b. Lower Duwamish Waterway Source Control Status Report, July 2007 to March 2008. Publication No. 08-09-063. Produced by Dan Cargill, Toxics Cleanup Program, Washington State Department of Ecology, and Science Applications International Corporation (SAIC). May 2008.

Ecology. 2008c. Agreed Order No. DE-5685. North Boeing Field/Georgetown Steam Plant. Effective August 14, 2008.

Ecology. 2008d. Lower Duwamish Waterway River Mile 3.9-4.3 East (Slip 6) Source Control Action Plan. Publication No. 08-09-001. September 2008.

Ecology. 2008e. Lower Duwamish Waterway Source Control Status Report, April 2008 through August 2008. Washington State Department of Ecology. Publication No. 08-09-068. October 2008.

Ecology. 2009a. Lower Duwamish Waterway RM 3.7-3.9 East (Early Action Area 6) Source Control Action Plan. Publication No. 09-09-082. March 2009.

Ecology. 2009b. Lower Duwamish Waterway RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works) Source Control Action Plan. Publication No. 09-09-081. April 2009.

Ecology. 2009c. Lower Duwamish Waterway RM 0.9-1.0 East (Slip 1) Source Control Action Plan. Publication No. 09-09-084. May 2009.

Ecology. 2009d. Agreed Order No. DE 6000. Glacier Northwest, Inc. and Reichhold, Inc. May 14. 2009.

Ecology. 2009e. Lower Duwamish Waterway RM 0.0-0.1 East (Spokane Street to Ash Grove Cement) Source Control Action Plan. Washington State Department of Ecology. Publication No. 09-09-086. June 2009.

Ecology. 2009f. Lower Duwamish Waterway RM 1.7 to 2.0 East (Slip 2 to 3) Source Control Action Plan. Publication No. 09-09-085. June 2009.

Ecology. 2009g. Lower Duwamish Waterway RM 2.3-2.8 East (Seattle Boiler Works to Slip 4) Source Control Action Plan. Publication No. 09-09-083. June 2009.

Ecology. 2009h. Lower Duwamish Waterway RM 1.2-1.7 East (Saint Gobain to Glacier Northwest) Source Control Action Plan. Final Report. Washington State Department of Ecology. Publication No. 09-09-087. June 2009.

Ecology. 2009i. Environmental Report Tracking System (ERTS) # 613599. Initial Report. U.S. Starcraft Corp., 5210 Utah Ave S. Incident Date 6/9/2009. Report prepared 6/18/2009.

Ecology. 2009j. Re: Effective Date of Agreed Order No. 6000 for Remedial Investigation/Feasibility Study and draft Cleanup Action Plan, Glacier Northwest, Inc./Reichhold, Inc. Site, Seattle, WA. Letter from Donna Ortiz de Anaya, Ecology, to Shawn Lilley, Glacier Northwest, Inc. July 28, 2009.

Ecology. 2009k. Lower Duwamish Waterway Source Control Status Report, September 2008 through June 2009. Washington State Department of Ecology. Publication No. 09-09-183. August 2009.

Ecology. 2009l. Agreed Order No. DE-6721. 8th Avenue Terminals, Inc. (Crowley Marine Services), 7400 8th Avenue S. October 12, 2009.

Ecology. 2009m. Letter from Mark Adams, Ecology, to Miguel Ortega, Re: Further Action Required at US GSA Federal Center S. October 21, 2009.

Ecology. 2009n. Letter from Robert Wright, Washington Department of Ecology, Water Quality Program, to Mr. Larry Brewer, Independent Metals, Re: Warning Letter – Noncompliance with Industrial Stormwater General Permit. December 23, 2009.

Ecology. 2009o. Lower Duwamish Waterway Source Control Updates. Washington State Department of Ecology. July through December 2009.

Ecology. 2010a. Settlement Agreement & Agreed Order for Dismissal with Prejudice. Terry Drexler and Basin Oil Company, Appellants, v. State of Washington, Department of Ecology, Respondent. Pollution Control Hearings Board, State of Washington, PCHB No. 08-148. January 15, 2010.

Ecology. 2010b. Public Notice, Dangerous Waste Corrective Action Permit, Agreed Order, and Cleanup Action Plan for Burlington Environmental, LLC. Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program. February 2010.

Ecology. 2010c. Fact Sheet: Dangerous Waste Corrective Action Permit, Agreed Order, and Cleanup Action Plan for Burlington Environmental, LLC. Publication No. 09-04-043. Washington State Department of Ecology. February 2010.

Ecology. 2010d. Determination of Nonsignificance, Cleanup Action Plan for the eastern portion of the PSC-Georgetown site in south Seattle. February 10, 2010.

Ecology. 2010e. Letter from Ed Jones, Hazardous Waste and Toxics Reduction Program, Ecology, to Mike Merryfield, Art Brass Plating, Inc., Re: Art Brass Plating Site, Remedial Investigation Agreed Order, Memorandum: groundwater sampling results and monitoring well proposals. February 24, 2010.

Ecology. 2010f. ERTS# 618929 Initial Report. North Star Casteel, 820 S Bradford St. March 26, 2010.

Ecology. 2010g. Washington Department of Ecology UST Site Inspection Report, Notice of Noncompliance, and Notice of Penalty. March 30, 2010.

Ecology. 2010h. Fact Sheet: Agreed Order Document Ready for Public Review – Industrial Container Services – WA, LLC. April 2010.

Ecology. 2010i. Agreed Order No. DE-7088 with The Boeing Company. Boeing Isaacson Thompson Site, 8625-8811 E. Marginal Way S., Tukwila, Washington. April 23, 2010.

Ecology. 2010j. National Pollutant Discharge Elimination System, Waste Discharge Permit No. WA-003222-1. April 30, 2010.

Ecology. 2010k. Agreed Order No. DE 6720, Herman and Jacqualine Trotsky and Industrial Container Services – WA, LLC. Effective Date May 18, 2010.

Ecology. 2010l. Lafarge North America (NPDES Permit WA-000223-2) NPDES Permit Review for Sediment Source Control. Draft. Prepared by Stacie Singleton, Toxics Cleanup Program/Aquatic Lands Cleanup Unit. July 2010.

Ecology. 2010m. ERTS# 621300 Initial Report. Puget Sound Coatings, 9220 8th Avenue S. July 21, 2010.

Ecology. 2010n. Letter from Donovan Gray, Ecology, to Richard Hall, Federal Center South, Re: Urban Waters Environmental Compliance Inspection, August 2, 2010. Corrective Measures Required. August 3, 2010.

Ecology. 2010o. Lower Duwamish Waterway Source Control Updates. Washington State Department of Ecology. January through September 2010.

Ecology. 2010p. Agreed Order No. DE 6735. Duwamish Shipyard, Inc. September 13, 2010.

EPI and Golder. 2009a. Upland Corrective Measures Study, Volume VIb: 2-40s Area. Data Gap Investigation Report. Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company by Environmental Partners, Inc. and Golder Associates, Inc. June 2009.

EPI and Golder. 2009b. Uplands Corrective Measures Study, Volume VIIb: North Area. Data Gap Investigation Report. Prepared for The Boeing Company by Environmental Partners, Inc. and Golder Associates, Inc. October 2009.

EPI. 2009. Other Area 12 Enhanced Reductive Dechlorination Interim Measure – Second Semiannual Report. Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company by Environmental Partners, Inc. October 12, 2009.

EPI. 2010. CMS Phase Semiannual Shoreline Groundwater Monitoring Report, February 2010. Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company by Environmental Partners, Inc. May 12, 2010.

ERM-West. 2009. Technical Memorandum. Historical Storm Water Pipe Investigation, Glacier Northwest, Inc.-Reichhold, Inc. Site, 5900 West Marginal Way SW, Seattle, Washington. Prepared by Laure Tesch and Erik Ipsen, ERM-West, Inc. November 13, 2009.

ERM-West. 2010a. Groundwater Sampling and Analysis Plan. Field Sampling Plan and Quality Assurance Project Plan, Glacier Northwest, Inc. – Reichhold, Inc. Site, Seattle, Washington. Prepared by ERM for Glacier Northwest, Inc. and Reichhold, Inc. April 2010.

ERM-West. 2010b. DRAFT Remedial Investigation and Feasibility Study Work Plan Table of Contents. Glacier Northwest, Inc. – Reichhold, Inc. Site. Prepared for Glacier Northwest, Inc. and Reichhold, Inc. by ERM-West, Inc. September 2010.

Farallon. 2009. Letter from Daniel Caputo and Peter Jewett, Farallon Consulting, LLC, to Ed Jones, Ecology, Re: Progress Report, July through September 2009, Quarter 3, Remedial Investigation, Capital Industries, Inc., Seattle, Washington. Agreed Order No. DE5348. August 24, 2010.

Farallon. 2010a. Letter from Daniel Caputo and Peter Jewett, Farallon Consulting, LLC, to Ed Jones, Ecology, Re: Progress Report, October through December 2009, Quarter 4, Remedial Investigation, Capital Industries, Inc., Seattle, Washington. Agreed Order No. DE5348. February 26, 2010.

Farallon. 2010b. Letter from Daniel Caputo and Peter Jewett, Farallon Consulting, LLC, to Ed Jones, Ecology, Re: Progress Report, January through March, Quarter 1, Remedial Investigation, Capital Industries, Inc., Seattle, Washington. Agreed Order No. DE5348. June 3, 2010.

Farallon. 2010c. Letter from Daniel Caputo and Peter Jewett, Farallon Consulting, LLC, to Ed Jones, Ecology, Re: Progress Report, April through June 2010, Quarter 2, Remedial Investigation, Capital Industries, Inc., Seattle, Washington. Agreed Order No. DE5348. August 24, 2010.

Farallon. 2010d. Letter from Daniel Caputo and Peter Jewett, Farallon Consulting, LLC, to Ed Jones, Ecology, Re: Progress Report, July through September 2010, Quarter 3, Remedial Investigation, Capital Industries, Inc., Seattle, Washington. Agreed Order No. DE5348. December 2, 2010.

Flint, K. 2010. Source Control Technical Memorandum. From Kris Flint, Remedial Project Manager, Source Control for Lower Duwamish Waterway Superfund Site, to Site File for the Lower Duwamish Waterway (LDWSF) – Record for Source Control. September 9, 2010.

Golder. 2009. 2009 Addendum to 2008 Stormwater Source Control Interim Measure Work Plan for Boeing Plant 2. Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company by Golder Associates, Inc. September 2009.

Golder. 2010a. Stormwater Source Control Round 3 Sampling Report, 2008-2009, for Boeing Plant 2. Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company by Golder Associates, Inc. February 2010.

Golder. 2010b. Preliminary Interim Measure Completion Report, Removal of PCB-Containing Caulk in Concrete Pavements. Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company by Golder Associates, Inc. February 2010.

Golder. 2010c. Stormwater Source Control Round 4 Sampling Report, 2009-2010, for Boeing Plant 2. Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company by Golder Associates, Inc. June 2010.

Golder. 2010d. Draft Stormwater System Work Plan to Control Storm Drain Discharges for Boeing Plant 2. Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company by Golder Associates, Inc. July 2010.

Golder. 2010e. Addendum to Stormwater Source Control Work Plan and Sampling and Analysis Plan for Boeing Plant 2. Prepared by Golder Associates, Inc. for The Boeing Company. July 2010.

Golder. 2010f. Interim Measure Work Plan, 2010 Soil and Stormwater Management Plan, Demolition of Buildings 2-44 and 2-49. Boeing Plant 2, Seattle/Tukwila, Washington. Prepared for The Boeing Company by Golder Associates, Inc. July 2010.

Gray, D. 2010. Hazardous Waste and Toxics Reduction, Northwest Regional Office, Monthly Reports, January – September 2010. Prepared by Donovan Gray, Ecology.

Herrera. 2007a. Phase I Environmental Site Assessment. Residence at 636 South Riverside Drive, Seattle, Washington. Prepared by Herrera Environmental Consultants, Inc. for Seattle Public Utilities. July 25, 2007. Draft.

Herrera. 2007b. Phase I Environmental Site Assessment. Industrial Shop at 640 South Riverside Drive, Seattle, Washington. Prepared by Herrera Environmental Consultants, Inc. for Seattle Public Utilities. July 25, 2007. Draft.

Herrera. 2008. Limited Phase II Site Investigation. Two South Riverside Drive Properties, Seattle, Washington. Prepared by Herrera Environmental Consultants, Inc. for Seattle Public Utilities. March 20, 2008.

Herrera. 2010. Removal Action Completion Report, Georgetown Flume Removal and Demolition. Prepared for Seattle City Light by Herrera Environmental Consultants. February 17, 2010.

Jeffers, M. 2009a. Email from Mike Jeffers, Ecology, to Beth Schmoyer, SPU, and Dan Cargill, Ecology, Re: High copper in storm drain solids at Container Care. May 4, 2009.

Jeffers, M. 2009b. Email from Mike Jeffers, Ecology, to Victoria Sutton, Ecology, Re: Inspection at U.S. Starcraft, 5210 Utah Ave S. June 10, 2009.

Jeffers, M. 2009c. Email from Mike Jeffers, Ecology, to Iris Winstanley, SAIC, Re: Update from Ecology's HWTR LDW inspector for March through June 2009. July 22, 2009.

Jeffers, M. 2009d. Email from Mike Jeffers, SPU, to Victoria Sutton, Ecology, Re: Industrial Container Services inspection update. August 21, 2009.

Jones, E. 2009. Email from Ed Jones, Ecology, to Dan Cargill, Ecology, Re: Capital Industries. September 24, 2009.

KCIA (King County International Airport). 2009. Determination of Nonsignificance, Quad 7 Soil Remediation and Underground Barrier Installation (Airport CIP Number 001389). August 13, 2009.

KCIW (King County Industrial Waste). 2010. Letter from King County Wastewater Treatment Division, Industrial Waste Program, to Eitan Alon, Rainier Commons, LLC, Re: Results of October 13, 2009 In-Line Sediment Sampling at Rainier Commons. January 21, 2010.

King County and SPU. 2004. Source Control Program for the Lower Duwamish Waterway, June 2004 Progress Report. Seattle Public Utilities and King County Industrial Waste. Seattle, WA.

King County and SPU. 2005a. Source Control Program for the Lower Duwamish Waterway, January 2005 Progress Report. Seattle Public Utilities and King County Industrial Waste. Seattle, WA.

King County and SPU. 2005b. Source Control Program for the Lower Duwamish Waterway, June 2005 Progress Report. Seattle Public Utilities and King County Industrial Waste. Seattle, WA.

King County. 2008. 2008 CSO Control Plan Update, Combined Sewer Overflow Control Program. Department of Natural Resources and Parks, Wastewater Treatment Division. June 2008.

King County. 2009. Duwamish River Basin Combined Sewer Overflow Data Report for Samples Collected From September 2007 to April 2009. Prepared by King County DNRP, Water and Land Resources Division, Seattle, WA.

King County. 2010. Lower Duwamish Waterway Source Tracing in King County Combined Sewer System. Sampling and Analysis Plan. Draft. King County Department of Natural Resources and Parks. June 2010.

Kissinger, L., D. Cargill, K. Flint, and R. Mednick. 2010. Letter to Scott Downey, U.S. EPA Region 10, Office of Enforcement, TSCA, from Lon Kissinger (U.S. EPA Region 10, Office of Environmental Assessment), Dan Cargill (Washington Dept. of Ecology, Toxics Cleanup Program), Kris Flint (U.S. EPA Region 10, Office of Environmental Cleanup), and Richard Mednick (U.S. EPA Region 10, Office of Regional Counsel), RE: March 10, 2010 Letter Health Consultation for PCBs (paint) at Rainier Commons LLC. Draft. April 2, 2010.

KOMO News. 2010. Propane tank explosion at South Seattle metal recycling facility. KOMO News website. April 22, 2010.

Kuroiwa, R. 2010a. Email from Roy Kuroiwa, POS, to Dan Cargill, Ecology, Richard Thomas, Ecology, Sarah Mansfield, Ecology, Kris Flint, King County, Beth Schmoyer, King County, Kym Takasaki. FW: Port's T115 Recontamination Study (part of Berth 1 Maintenance Dredging permit). September 13, 2010.

Kuroiwa, R. 2010b. Email from Roy Kuroiwa, Port of Seattle, to Dan Cargill, Ecology, Re: T108 – Source control report input. November 2, 2010.

Lafarge. 2010. Press Release: Economy Forces Change for Lafarge's Seattle Cement Plant. Lafarge North America, Inc. April 30, 2010.

Landau. 2010a. Ecology Review Draft Work Plan, Remedial Investigation/Feasibility Study, Boeing Isaacson-Thompson Site, Tukwila, Washington. Prepared by Landau Associates, Inc. for The Boeing Company. June 21, 2010.

Landau. 2010b. Report: Concrete Joint Removal, North Boeing Field, Seattle, Washington. Prepared for The Boeing Company by Landau Associates. November 9, 2010.

Mansfield, S. 2010. Email from Sarah Mansfield, Ecology, to Distribution, Re: Update on Spill located south of Slip 4 in the LDW. June 9, 2010.

McCauley, M. 2009. Email from Margaret McCauley, USEPA, to Victoria Sutton, Ecology, Re: postcard that went out from EPA. November 19, 2009.

OnSite Environmental (OnSite Environmental Inc.). 2009a. Analytical Data for Project T115_SW Tank, Laboratory Reference No. 0910-074. October 23, 2009.

OnSite Environmental. 2009b. Analytical Data for Project Terminal 115 SW Corner; D4840, Laboratory Reference No. 0912-041. December 14, 2009.

Pacific Crest Environmental. 2009. Remedial Investigation Report, Gilmur/Hale Family Trust, 6365 First Avenue South, Seattle, Washington. Prepared by Pacific Crest Environmental, LLC, for Mr. Jim Gilmur. May 11, 2009.

PGG (Pacific Groundwater Group). 2008. Groundwater Investigation, 7th Avenue South and South Riverside Drive. Prepared for Seattle Public Utilities. February 27, 2008.

PGG. 2009a. Letter from Janet Knox, Pacific Groundwater Group, to Ed Jones, Ecology, Re: Progress Report April through June (Q2) 2009, Blaser Die Casting, Seattle, WA; Enforcement Order DE 5479. August 31, 2009.

PGG. 2009b. Letter from Janet Knox, Pacific Groundwater Group, to Ed Jones, Ecology, Re: Progress Report July through September (Q3) 2009, Blaser Die Casting, Seattle, WA; Enforcement Order DE 5479. November 30, 2009.

PGG. 2010a. Letter from Janet Knox, Pacific Groundwater Group, to Ed Jones, Ecology, Re: Progress Report October through December (Q4) 2009, Blaser Die Casting, Seattle, WA; Enforcement Order DE 5479. February 26, 2010.

PGG. 2010b. Letter from Janet Knox, Pacific Groundwater Group, to Ed Jones, Ecology, Re: Progress Report January through March (Q1) 2010, Blaser Die Casting, Seattle, WA; Enforcement Order DE 5479. May 28, 2010.

PGG. 2010c. Letter from Janet Knox, Pacific Groundwater Group, to Ed Jones, Ecology, Re: Progress Report July through September (Q3) 2010, Blaser Die Casting, Seattle, WA; Enforcement Order DE 5479. November 30, 2010.

SAIC (Science Applications International Corporation). 2003. Property reviews for Container-Care International (Port of Seattle Terminal 106W/108), Transportation Services CFS (Port of Seattle Terminal 106W/106NW), Chevron USA Site No. 4097 (Chiyoda Property), and Federal Center South. June 2003.

SAIC. 2006a. Property Summary: ARCO #5218, 7200 East Marginal Way S, Seattle, WA. Prepared for Washington Department of Ecology by Science Applications International Corporation. October 2006.

SAIC. 2006b. Property Summary: Marine Vacuum Service, 1516 S Graham Street, Seattle, WA. Prepared for Washington Department of Ecology by Science Applications International Corporation. October 2006.

SAIC. 2006c. Technical Memorandum, Crowley and First South Properties. Potential for Slip 4 Sediment Recontamination Via Groundwater Discharge. Prepared by Science Applications International Corporation for Washington State Department of Ecology, Toxics Cleanup Program. October 2006.

SAIC. 2006d. Property Summary: American Avionics, 7023 Perimeter Road S, Seattle, WA. Prepared for Washington Department of Ecology by Science Applications International Corporation. December 2006.

SAIC. 2006e. Property Summary: King County Airport Maintenance Shop, 6518 Ellis Avenue S, Seattle, WA. Prepared for Washington Department of Ecology by Science Applications International Corporation. December 2006.

SAIC. 2007a. Property Summary: Aviation Fuel Storage/Schultz Distributing, 1495 S Hardy Street, Seattle, WA. Prepared for Washington Department of Ecology by Science Applications International Corporation. January 2007.

SAIC. 2007b. Lower Duwamish Waterway Early Action Area 2. Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology, Toxics Cleanup Program. February 2007.

SAIC. 2007c. North Boeing Field and Georgetown Steam Plant. Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Toxics Cleanup Program, Washington State Department of Ecology. February 2007.

SAIC. 2007d. Lower Duwamish Waterway Slip 4, Technical Memorandum: Status of Slip 4 Source Control. Prepared by Science Applications International Corporation for Toxics Cleanup Program, Washington State Department of Ecology. February 2007.

SAIC. 2007e. Property Summary: North Coast Chemical Company, 6300-17th Avenue S, Seattle, WA. Prepared for Washington Department of Ecology by Science Applications International Corporation. February 2007.

SAIC. 2007f. Lower Duwamish Waterway Glacier Bay Source Control Area. Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology, Toxics Cleanup Program. June 2007.

SAIC. 2007g. Lower Duwamish Waterway South Park Marina. Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology, Toxics Cleanup Program. June 2007.

SAIC. 2008a. Lower Duwamish Waterway, RM 2.3-2.8 East, Seattle Boiler Works to Slip 4, Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology Toxics Cleanup Program. May 2008.

SAIC. 2008b. Lower Duwamish Waterway, RM 3.7-3.9 East, Early Action Area 6, Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology Toxics Cleanup Program. May 2008.

SAIC. 2008c. Lower Duwamish Waterway, RM 0.9 to 1.0 East, Slip 1, Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology Toxics Cleanup Program. August 2008.

SAIC. 2008d. Lower Duwamish Waterway, Early Action Area 2. Supplemental Data Gaps Report, Douglas Management Company Property, 7100 2nd Avenue SW, Seattle. Prepared by SAIC for Washington State Department of Ecology Toxics Cleanup Program. December 2008.

SAIC. 2009a. Lower Duwamish Waterway RM 1.7 to 2.0 East (Slip 2 to Slip 3) Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology Toxics Cleanup Program. February 2009.

SAIC. 2009b. Lower Duwamish Waterway Early Action Area 2, Supplemental Data Gaps Report, Boyer Towing Property. Prepared by Science Applications International Corporation for Washington State Department of Ecology Toxics Cleanup Program. June 2009.

SAIC. 2009c. Lower Duwamish Waterway Early Action Area 1, Duwamish/Diagonal Way (RM 0.1 to 0.9 East), Summary of Existing Information and Identification of Data Gaps for the Duwamish/Diagonal CSO/SD Basin. Prepared by Science Applications International Corporation for Washington State Department of Ecology Toxics Cleanup Program. August 2009.

SAIC. 2009d. North Boeing Field and Georgetown Steam Plant. Supplemental Report: Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology Toxics Cleanup Program. August 2009.

SAIC. 2010a. North Boeing Field/Georgetown Steam Plant Site Remedial Investigation/ Feasibility Study: Preliminary Stormwater Sampling Interim Data Report. Prepared for Toxics Cleanup Program, Northwest Regional Office, Washington State Department of Ecology, by SAIC, Bothell, WA. May 2010.

SAIC. 2010b. Lower Duwamish Waterway RM 1.0 to 1.2 East (King County Lease Parcels), Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology Toxics Cleanup Program. June 2010.

SAIC. 2010c. North Boeing Field/Georgetown Steam Plant Site Remedial Investigation/ Feasibility Study: Assessment of Infiltration and Inflow to North Boeing Field Storm Drain System. Draft. Prepared for Toxics Cleanup Program, Northwest Regional Office, Washington State Department of Ecology, by SAIC, Bothell, WA. July 14, 2010.

SAIC. 2010d. Lower Duwamish Waterway Early Action Area 5, Summary of Site Characterization Activities: Basin Oil Property. Prepared by Science Applications International Corporation for Washington State Department of Ecology. August 2010.

SAIC. 2010e. Lower Duwamish Waterway RM 4.3 to 4.9 East (Boeing Developmental Center), Summary of Existing Information and Identification of Data Gaps. Prepared by Science Applications International Corporation for Washington State Department of Ecology Toxics Cleanup Program. September 2010.

SAIC. 2010f. North Boeing Field/Georgetown Steam Plant Site Remedial Investigation/ Feasibility Study: Slip 4 Sediment Recontamination Modeling Report. Prepared for Toxics Cleanup Program, Northwest Regional Office, Washington State Department of Ecology, by SAIC, Bothell, WA. September 2010.

SAIC. 2010g. North Boeing Field/Georgetown Steam Plant Site Remedial Investigation/ Feasibility Study: Expanded Stormwater Sampling Interim Data Report. Prepared for Toxics Cleanup Program, Northwest Regional Office, Washington State Department of Ecology, by SAIC, Bothell, WA. September 2010.

Schmoyer, B. 2010a. Email from Beth Schmoyer, SPU, to Margaret McCauley, USEPA Region 10, Re: Coordinating on Seattle Iron & Metals. April 28, 2010.

Schmoyer, B. 2010b. Email from Beth Schmoyer, SPU, to Jon Klemesrud, USEPA Region 10, Re: Seattle Iron & Metals data. June 9, 2010.

SEA (Striplin Environmental Associates). 2004. Lower Duwamish Waterway, Slip 4 Early Action Area, Summary of Existing Information and Identification of Data Gaps. Prepared by Striplin Environmental Associates for City of Seattle and King County. January 15, 2004.

Seattle City Attorney. 2010. Letter from Peter S. Holmes, Seattle City Attorney, to Josh M. Lipsky, Cascadia Law Group, Re: 8th Avenue Terminals, Inc. – Stormwater System Outfalls. October 11, 2010.

Seattle DPD. 2009. Determination of Non-Significance. Ash Grove Cement Company, 3801 East Marginal Way S. City of Seattle Department of Planning and Development. August 10, 2009.

Seattle Times. 2010. New Boeing plan: Expand work here. Dominic Gates, Seattle Times. September 10, 2010.

SLR. 2009. Draft Remedial Investigation/Feasibility Study Work Plan, 8th Avenue Terminals, Inc. Site, Seattle, Washington. Prepared by SLR International Corp. for 8th Avenue Terminals, Inc. December 10, 2009.

SPU. 2009. MTCA Release Report. 636 South Riverside Drive, Seattle, Washington. 640 South Riverside Drive, Seattle, Washington. Submitted to Washington State Department of Ecology by Seattle Public Utilities. May 24, 2009.

SPU. 2010. Seattle Public Utilities Source Control Program for the Lower Duwamish Waterway. December 2010 Progress Report. Prepared by Seattle Public Utilities for U.S. Environmental Protection Agency, Region 10, and Washington State Department of Ecology. December 2010.

Stegman, G. 2010. Email from Greg Stegman, Ecology, to Megan Wisdom, SPU Re: Seattle Boiler Works data. July 22, 2010.

Stewart, E. 2010. Email from Ellen Stewart, SPU, to Dan Cargill, Ecology, Re: Inspections, August 1, 2009 through September 30, 2010. October 21, 2010.

Sutton, V. 2010. Email from Victoria Sutton, Ecology, to Stephen Wilson, Crowley Marine Services, Re: Agreed Order & First Student. June 21, 2010.

TEC, Inc. 2010. Terminal 115 Berth 1, Environmental Sampling and Compliance Monitoring, P-033136307, Port of Seattle, 6700 W Marginal Way, Seattle, WA, Recontamination Study for T-115, Work Plan. Prepared for Port of Seattle. March 2010.

Tiffany. 2010. Emails from Bruce Tiffany, KCIW, to Dan Cargill, Ecology, Re: KC/WTD for LDW Source Control Status Report. October 29 and November 3, 2010.

Tiffany. 2011. Email from Bruce Tiffany, KCIW, to Dan Cargill, Ecology, Re: Comments on draft Source Control Status Report. March 18, 2011.

USDOJ. 2010a. Press Release: United States Announces Two Major Clean Air Act Settlements Controlling Emissions From 28 Industrial Plants Nationwide. U.S Department of Justice, Environmental Protection Agency. January 21, 2010.

USDOJ. 2010b. Consent Decree No. CV-10-758. United States District Court, Western District of Washington at Seattle. NOAA, Department of the Interior, Ecology, Muckleshoot Indian Tribe, and Suquamish Tribe, Plaintiffs, v. The Boeing Company, Defendant. May 4, 2010.

USEPA. 2003. Agreement and Covenant Not to Sue South Park Industrial Properties, LLC, between U.S. Environmental Protection Agency and South Park Industrial Properties, LLC. In the Matter of: Advance Electroplating and Fruehauf Trailer Services, Seattle, WA. October 15, 2003.

USEPA. 2009a. Letter from Scott Downey, Manager, Pesticides and Toxics Unit, U.S. Environmental Protection Agency, to Eitan Alon, Manager, Rainier Commons, LLC, Re: Submittal of Maintenance Plan: Review of Site Cleaning Procedures. August 13, 2009.

USEPA. 2009b. Letter from Scott Downey, Manager, Pesticides and Toxics Unit, to Ms. .Janet Bailey, Kelley-Moore Paint Company, Inc., Re: PCB Remediation Plan Extension Approval. August 2009.

USEPA. 2010a. Letter from Richard Albright, USEPA, to William Ernst, The Boeing Company, Re: EPA Decision, Determination of Need for Additional Work to Control Storm Drain Discharges, Boeing Plant 2, Seattle/Tukwila, Washington. RCRA Docket No. 1092-01-22-3008(h). March 30, 2010.

USEPA. 2010b. Letter from Michael J. Lidgard, Manager, NPDES Permits Unit, U.S. Environmental Protection Agency Region 10, to Ed Abbasi, Water Quality Program, Washington State Department of Ecology, Re: Seattle Iron & Metals Corporation; NPDES Permit No, WA-003196-8. July 7, 2010.

USEPA. 2010c. Letter to Tenants of Rainier Commons: PCB sampling data from Rainier Commons. U.S. Environmental Protection Agency, Seattle, Washington. September 2010.

USEPA. 2010d. Administrative Settlement Agreement and Order on Consent for Removal Action. United States Environmental Protection Agency, Region 10. Docket No. CERCLA-10-2010-0242. September 2010.

USEPA. 2010e. Action Memorandum for the Time-Critical Removal Action at North Boeing Field near the Slip 4 Early Action Area of the Lower Duwamish Waterway Superfund Site, Seattle, King County, Washington. Prepared by Karen Keeley, Remedial Project Manager, for Daniel D. Opalski, Office of Environmental Cleanup, U.S. Environmental Protection Agency. September 23, 2010.

USEPA. 2010f. Action Memorandum for a Non-Time-Critical Removal Action at the Terminal 117 Early Action Area of Lower Duwamish Waterway Superfund Site, Seattle, Washington. Prepared by Piper Peterson Lee, Superfund Project Manager. September 30, 2010.

USEPA. 2010g. Action Memorandum for the Jorgensen-Forge Outfall Site, Seattle, King County, Washington. Prepared by Michael Sibley, Emergency Response Unit, USEPA Region 10. September 30, 2010.

WDOH (Washington State Department of Health). 2010. Initial Letter Health Consultation, Rainier Commons LLC Polychlorinated Biphenyls (PCBs) Paint Contamination, Seattle, King County, Washington. April 7, 2010.

Windward. 2003a. Technical Memorandum: Data Analysis and Candidate Site Identification. Final. Prepared by Windward Environmental, LLC for Lower Duwamish Waterway Group. June 12, 2003.

Windward. 2003b. Phase I Remedial Investigation Report. Final. Prepared by Windward Environmental, LLC for Lower Duwamish Waterway Group. July 3, 2003.

Windward. 2003c. Summary of Existing Information and Data Gaps Analysis Report, Terminal 117 Early Action Area. Prepared by Windward Environmental LLC for the Port of Seattle. September 26, 2003.

Windward. 2009. Terminal 108 – Western Parcel. Source Control Strategy Plan. Prepared by Windward Environmental for Port of Seattle. October 30, 2009.

Windward. 2010a. Stormwater System Investigation Plan, Insurance Auto Auctions, 8801 E Marginal Way S, Tukwila, Washington. Prepared by Windward Environmental for Insurance Auto Auctions, Inc. April 29, 2010.

Windward. 2010b. Revised Engineering Evaluation/Cost Analysis. Lower Duwamish Waterway Superfund Site, Terminal 117 Early Action Area. Prepared for the Port of Seattle and City of Seattle by Windward Environmental, Integral Consulting, AECOM, CRETE, and Dalton, Olmsted & Fuglevand. June 3, 2010.

Windward. 2010c. Remedial Investigation Report. Final. Prepared by Windward Environmental, LLC, for the Lower Duwamish Waterway Group. July 9, 2010.

Windward. 2010d. Stormwater System Investigation – First Quarterly Data Report, Insurance Auto Auctions, 8801 E Marginal Way S, Tukwila, Washington. Prepared by Windward Environmental for Insurance Auto Auctions. August 27, 2010.

Wisdom, M. 2010a. Email from Megan Wisdom, SPU, to Robert Wright, Ecology, Re: Complaint regarding turbid discharge from ConGlobal yard. January 26, 2010.

Wisdom, M. 2010b. Email from Megan Wisdom, SPU, to Dan Cargill, Ecology, Re: North Star Casteel resin spill. April 15, 2010.

Wright, R. 2009. Email from Robert Wright, Water Quality Specialist, Ecology, to Rachel McCrea, Ecology, Re: King County Airport outfall #2 evaluation. March 23, 2009.

Wright, R. 2010a. Email from Robert Wright, Water Quality Specialist, Ecology, to Raman Iyer, Ecology, Re: DUWI Info. August 13, 2010.

Wright, R. 2010b. Urban Waters Inspections. Lower Duwamish Source Control Status Report – August 1, 2009 to September 30, 2010. Prepared by Robert Wright, Water Quality Specialist, Washington State Department of Ecology. November 8, 2010.

This page intentionally left blank.

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.

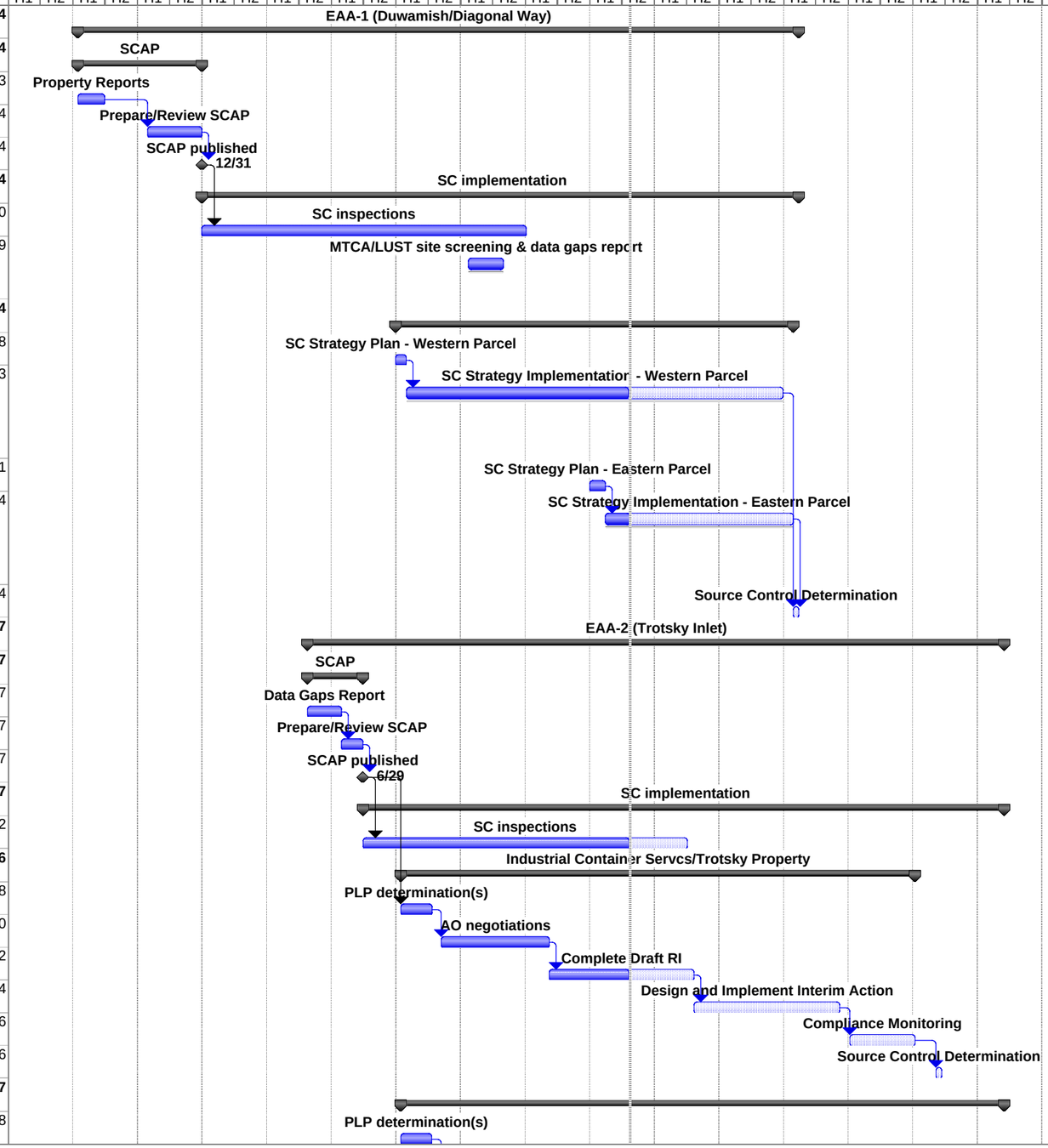
The staffing scenario is based on known or anticipated assignments as of June 2011. The following staffing assumptions were made:

- 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.

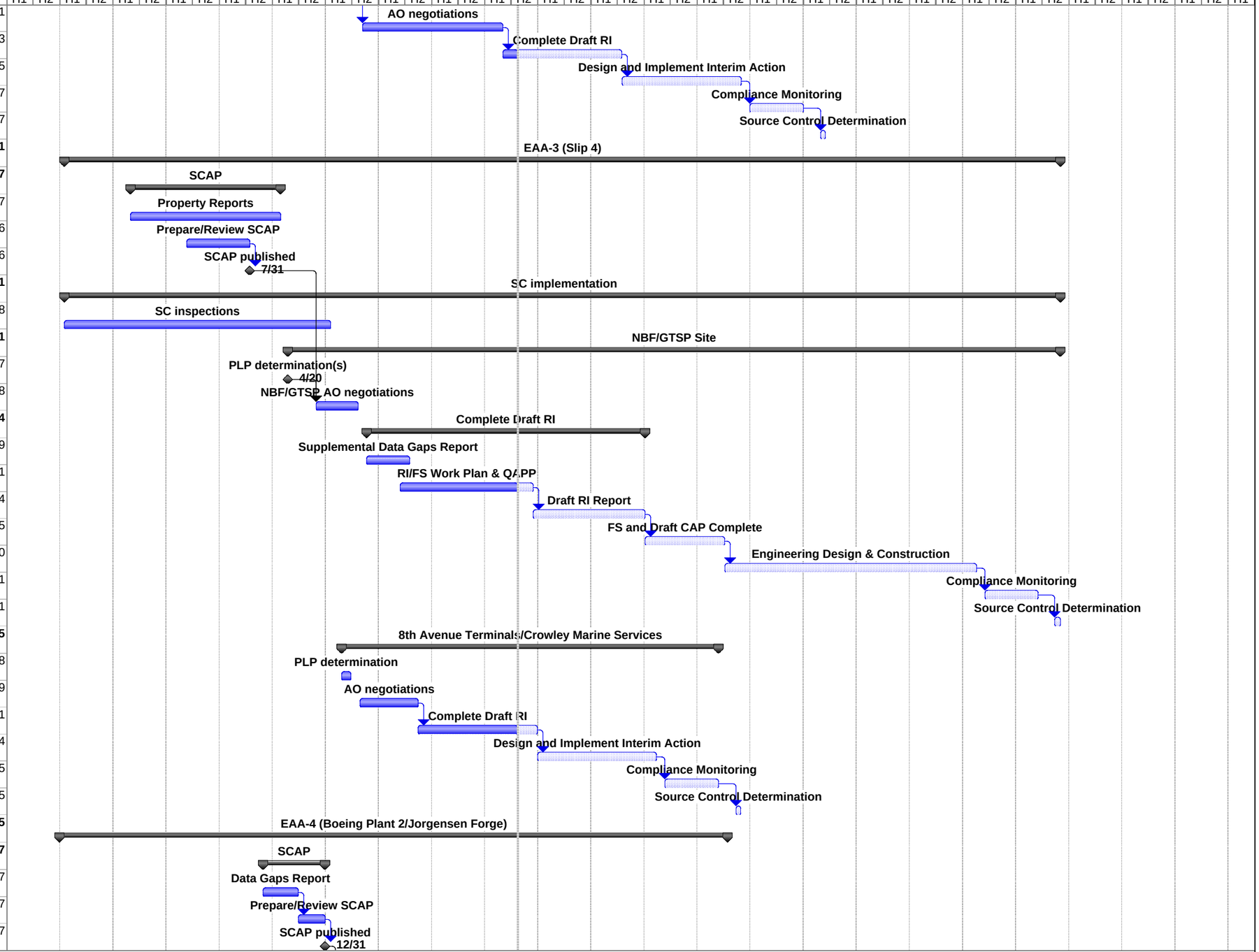
ID	Task Name	Start	Finish
1	**EAA-1 (Duwamish/Diagonal Way)**	**2/1/03**	**3/28/14**
2	**SCAP**	**2/1/03**	**12/31/04**
3	Property Reports	2/1/03	6/30/03
4	Prepare/Review SCAP	3/1/04	12/31/04
5	SCAP published	12/31/04	12/31/04
6	**SC implementation**	**1/1/05**	**3/28/14**
7	SC inspections	1/1/05	1/7/10
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**	**6/1/17**
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**	**6/1/17**
21	SC inspections	7/2/07	7/6/12
22	**Industrial Container Servcs/Trotsky Property**	**1/31/08**	**1/14/16**
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	8/13/12
26	Design and Implement Interim Action	8/14/12	11/14/14
27	Compliance Monitoring	1/12/15	1/14/16
28	Source Control Determination	5/13/16	6/13/16
29	**Douglas Mgmt Company**	**1/31/08**	**6/1/17**
30	PLP determination(s)	1/31/08	7/22/08



Project: LDW SC functional level
Date: 8/15/11

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

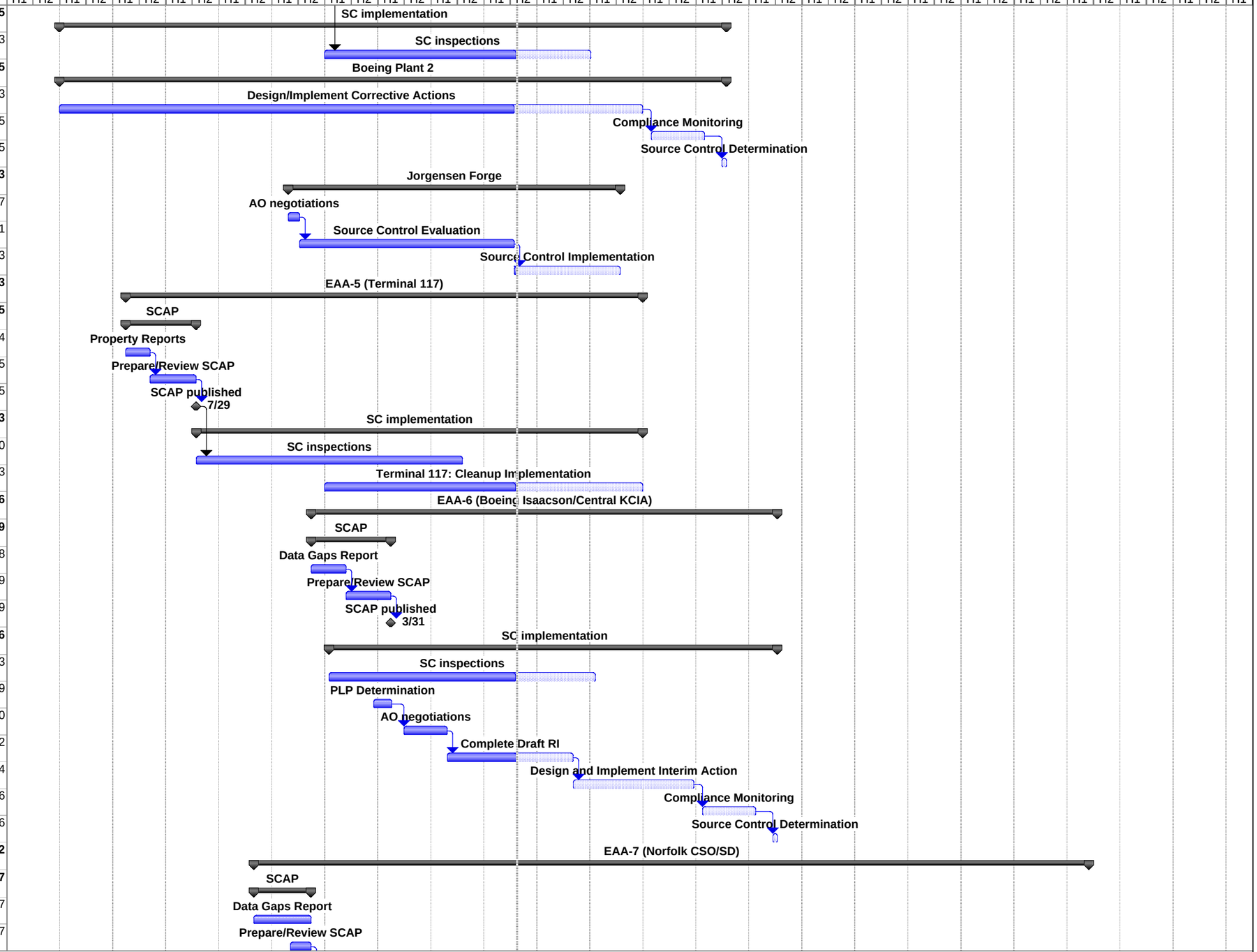
ID	Task Name	Start	Finish
31	AO negotiations	9/15/08	5/6/11
32	Complete Draft RI	5/9/11	8/2/13
33	Design and Implement Interim Action	8/5/13	11/2/15
34	Compliance Monitoring	1/1/16	1/2/17
35	Source Control Determination	5/2/17	6/1/17
36	**EAA-3 (Slip 4)**	**2/3/03**	**11/5/21**
37	**SCAP**	**5/3/04**	**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	RI/FS Work Plan & QAPP	6/1/09	12/1/11
49	Draft RI Report	12/2/11	1/9/14
50	FS and Draft CAP Complete	1/10/14	7/10/15
51	Engineering Design & Construction	7/13/15	4/7/20
52	Compliance Monitoring	6/5/20	6/4/21
53	Source Control Determination	9/27/21	11/5/21
54	**8th Avenue Terminals/Crowley Marine Services**	**4/24/08**	**5/29/15**
55	PLP determination	4/24/08	6/25/08
56	AO negotiations	8/29/08	10/1/09
57	Complete Draft RI	10/2/09	12/30/11
58	Design and Implement Interim Action	1/2/12	3/28/14
59	Compliance Monitoring	5/26/14	5/29/15
60	Source Control Determination	9/28/15	10/28/15
61	**EAA-4 (Boeing Plant 2/Jorgensen Forge)**	**1/1/03**	**7/31/15**
62	**SCAP**	**11/1/06**	**12/31/07**
63	Data Gaps Report	11/1/06	6/29/07
64	Prepare/Review SCAP	7/2/07	12/31/07
65	SCAP published	12/31/07	12/31/07



Project: LDW SC functional level
Date: 8/15/11

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

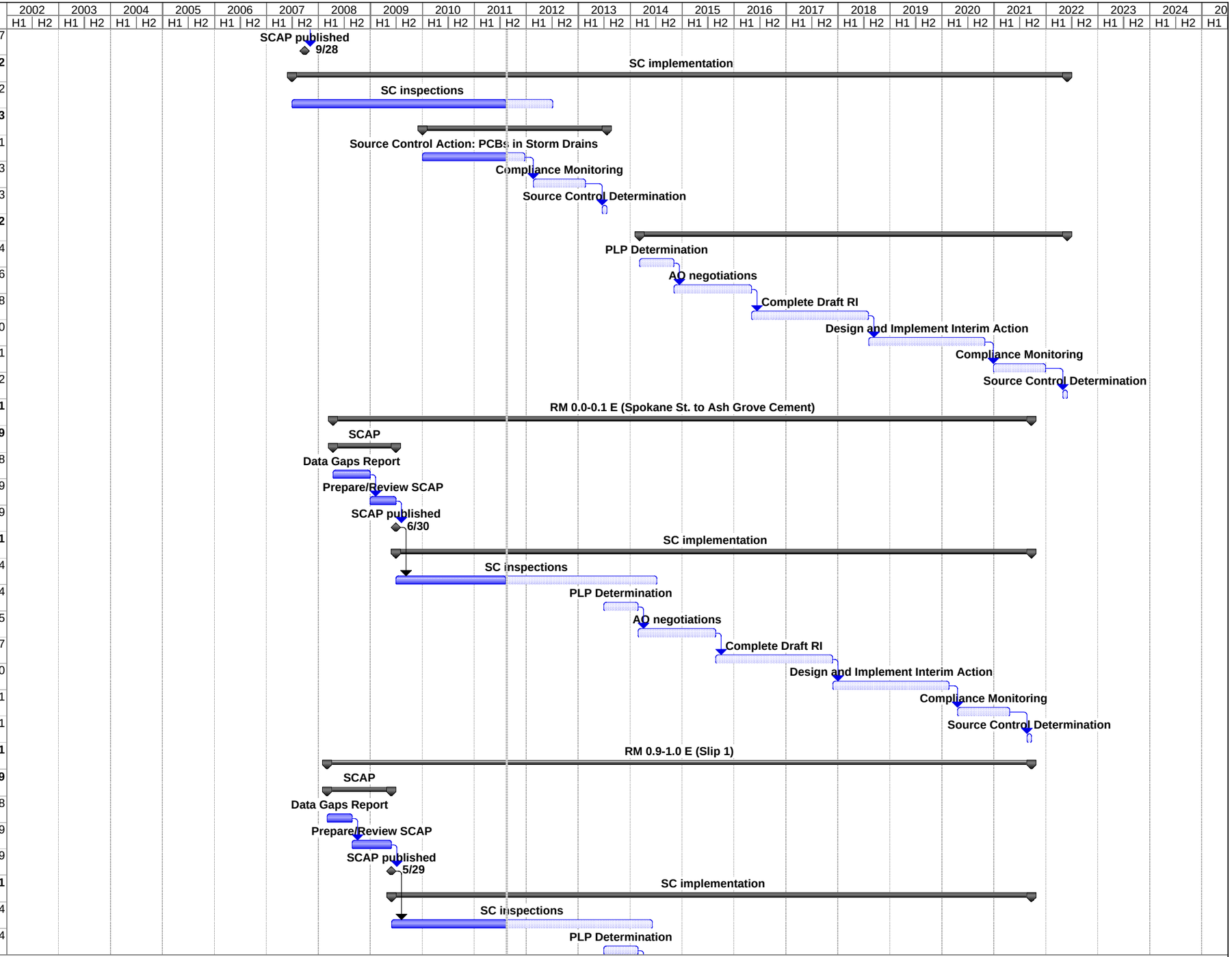
ID	Task Name	Start	Finish
66	**SC implementation**	**1/1/03**	**7/31/15**
67	SC inspections	1/1/08	1/7/13
68	**Boeing Plant 2**	**1/1/03**	**7/31/15**
69	Design/Implement Corrective Actions	1/1/03	12/31/13
70	Compliance Monitoring	2/28/14	3/2/15
71	Source Control Determination	6/30/15	7/31/15
72	**Jorgensen Forge**	**4/26/07**	**7/29/13**
73	AO negotiations	4/26/07	7/12/07
74	Source Control Evaluation	7/13/07	7/29/11
75	Source Control Implementation	8/1/11	7/29/13
76	**EAA-5 (Terminal 117)**	**4/1/04**	**12/31/13**
77	**SCAP**	**4/1/04**	**7/29/05**
78	Property Reports	4/1/04	9/15/04
79	Prepare/Review SCAP	9/16/04	7/29/05
80	SCAP published	7/29/05	7/29/05
81	**SC implementation**	**8/1/05**	**12/31/13**
82	SC inspections	8/1/05	8/6/10
83	Terminal 117: Cleanup Implementation	1/1/08	12/31/13
84	**EAA-6 (Boeing Isaacson/Central KCIA)**	**10/1/07**	**7/15/16**
85	**SCAP**	**10/1/07**	**3/31/09**
86	Data Gaps Report	10/1/07	5/27/08
87	Prepare/Review SCAP	5/28/08	3/31/09
88	SCAP published	3/31/09	3/31/09
89	**SC implementation**	**2/1/08**	**7/15/16**
90	SC inspections	2/1/08	2/7/13
91	PLP Determination	12/5/08	4/7/09
92	AO negotiations	7/1/09	4/23/10
93	Complete Draft RI	4/26/10	9/7/12
94	Design and Implement Interim Action	9/10/12	12/18/14
95	Compliance Monitoring	2/17/15	2/17/16
96	Source Control Determination	6/16/16	7/15/16
97	**EAA-7 (Norfolk CSO/SD)**	**9/1/06**	**6/1/22**
98	**SCAP**	**9/1/06**	**9/28/07**
99	Data Gaps Report	9/1/06	9/28/07
100	Prepare/Review SCAP	5/11/07	9/28/07



Project: LDW SC functional level
Date: 8/15/11

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

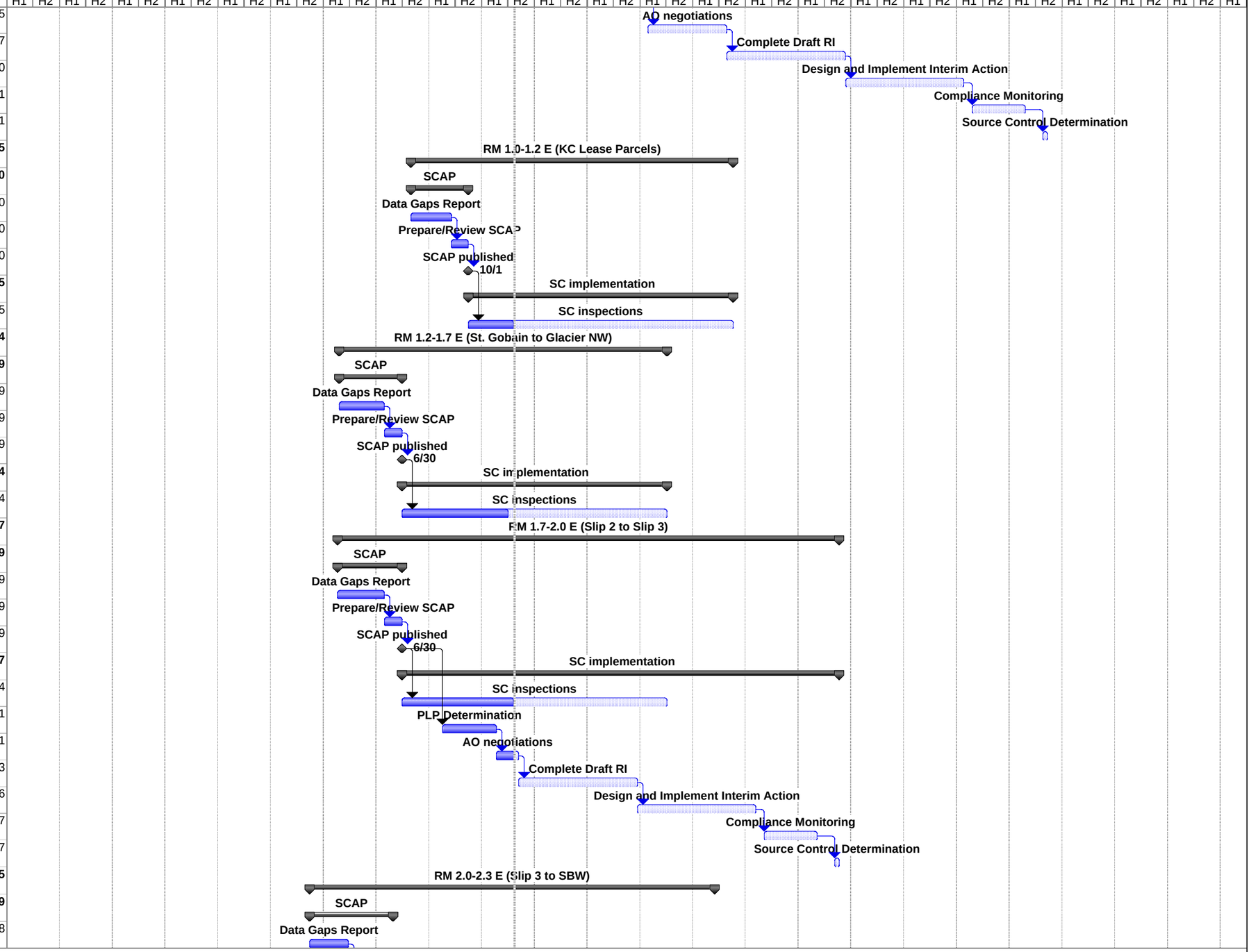
ID	Task Name	Start	Finish
101	SCAP published	9/28/07	9/28/07
102	**SC implementation**	**7/2/07**	**6/1/22**
103	SC inspections	7/2/07	7/6/12
104	**BDC South Storm Drain**	**1/4/10**	**7/22/13**
105	Source Control Action: PCBs in Storm Drains	1/4/10	12/23/11
106	Compliance Monitoring	2/22/12	2/21/13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



Project: LDW SC functional level
Date: 8/15/11

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

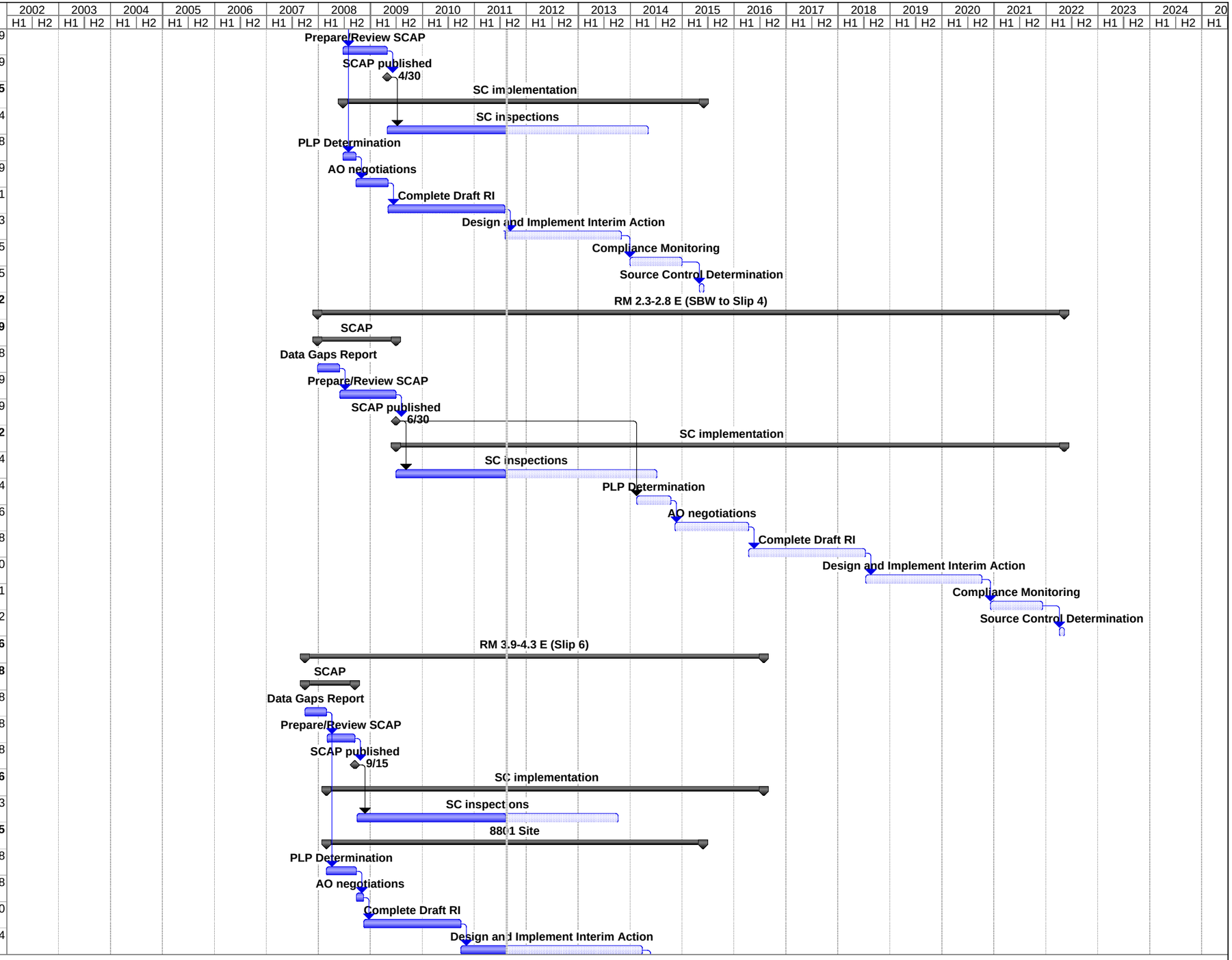
ID	Task Name	Start	Finish
136	AO negotiations	2/27/14	8/26/15
137	Complete Draft RI	8/27/15	11/24/17
138	Design and Implement Interim Action	11/27/17	2/21/20
139	Compliance Monitoring	4/22/20	4/22/21
140	Source Control Determination	8/23/21	9/22/21
141	**RM 1.0-1.2 E (KC Lease Parcels)**	**9/1/09**	**10/9/15**
142	**SCAP**	**9/1/09**	**10/1/10**
143	Data Gaps Report	9/1/09	6/7/10
144	Prepare/Review SCAP	6/8/10	10/1/10
145	SCAP published	10/1/10	10/1/10
146	**SC implementation**	**10/4/10**	**10/9/15**
147	SC inspections	10/4/10	10/9/15
148	**RM 1.2-1.7 E (St. Gobain to Glacier NW)**	**4/23/08**	**7/8/14**
149	**SCAP**	**4/23/08**	**6/30/09**
150	Data Gaps Report	4/23/08	2/27/09
151	Prepare/Review SCAP	3/2/09	6/30/09
152	SCAP published	6/30/09	6/30/09
153	**SC implementation**	**7/1/09**	**7/8/14**
154	SC inspections	7/1/09	7/8/14
155	**RM 1.7-2.0 E (Slip 2 to Slip 3)**	**4/11/08**	**10/12/17**
156	**SCAP**	**4/11/08**	**6/30/09**
157	Data Gaps Report	4/11/08	2/27/09
158	Prepare/Review SCAP	3/2/09	6/30/09
159	SCAP published	6/30/09	6/30/09
160	**SC implementation**	**7/1/09**	**10/12/17**
161	SC inspections	7/1/09	7/8/14
162	PLP Determination	4/7/10	4/14/11
163	AO negotiations	4/15/11	9/15/11
164	Complete Draft RI	9/16/11	12/16/13
165	Design and Implement Interim Action	12/17/13	3/14/16
166	Compliance Monitoring	5/12/16	5/12/17
167	Source Control Determination	9/12/17	10/12/17
168	**RM 2.0-2.3 E (Slip 3 to SBW)**	**10/1/07**	**6/3/15**
169	**SCAP**	**10/1/07**	**4/30/09**
170	Data Gaps Report	10/1/07	6/23/08



Project: LDW SC functional level
Date: 8/15/11

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

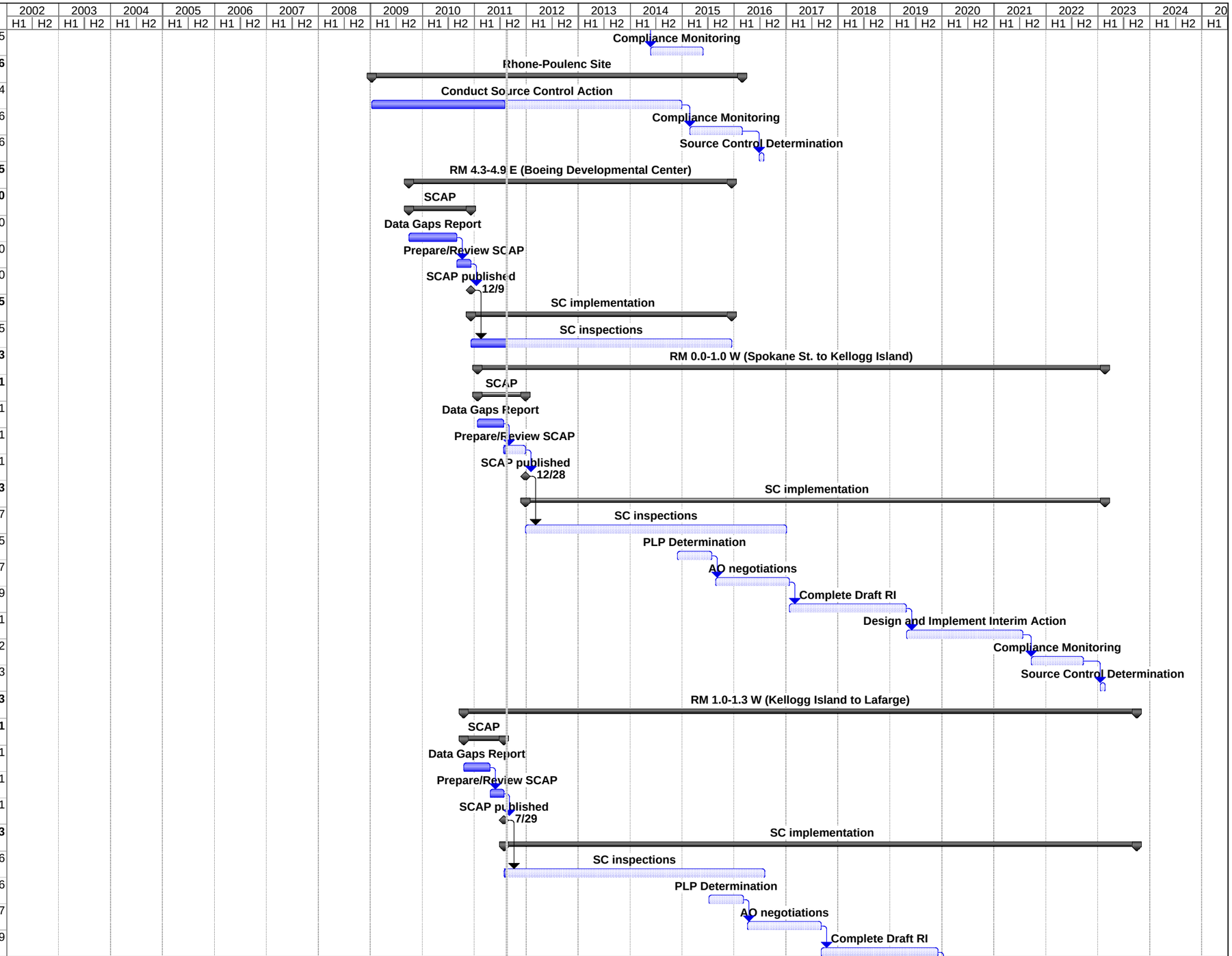
ID	Task Name	Start	Finish
171	Prepare/Review SCAP	6/24/08	4/30/09
172	SCAP published	4/30/09	4/30/09
173	**SC implementation**	**6/24/08**	**6/3/15**
174	SC inspections	5/1/09	5/8/14
175	PLP Determination	6/24/08	9/22/08
176	AO negotiations	9/23/08	5/6/09
177	Complete Draft RI	5/7/09	8/5/11
178	Design and Implement Interim Action	8/8/11	11/1/13
179	Compliance Monitoring	1/1/14	1/1/15
180	Source Control Determination	5/4/15	6/3/15
181	**RM 2.3-2.8 E (SBW to Slip 4)**	**12/28/07**	**5/11/22**
182	**SCAP**	**12/28/07**	**6/30/09**
183	Data Gaps Report	12/28/07	5/30/08
184	Prepare/Review SCAP	6/2/08	6/30/09
185	SCAP published	6/30/09	6/30/09
186	**SC implementation**	**7/1/09**	**5/11/22**
187	SC inspections	7/1/09	7/8/14
188	PLP Determination	2/17/14	10/15/14
189	AO negotiations	11/13/14	4/13/16
190	Complete Draft RI	4/14/16	7/13/18
191	Design and Implement Interim Action	7/16/18	10/9/20
192	Compliance Monitoring	12/9/20	12/9/21
193	Source Control Determination	4/8/22	5/11/22
194	**RM 3.9-4.3 E (Slip 6)**	**10/1/07**	**7/29/16**
195	**SCAP**	**10/1/07**	**9/15/08**
196	Data Gaps Report	10/1/07	2/28/08
197	Prepare/Review SCAP	3/5/08	9/15/08
198	SCAP published	9/15/08	9/15/08
199	**SC implementation**	**2/29/08**	**7/29/16**
200	SC inspections	10/1/08	10/8/13
201	**8801 Site**	**2/29/08**	**5/29/15**
202	PLP Determination	2/29/08	9/25/08
203	AO negotiations	9/26/08	11/14/08
204	Complete Draft RI	11/17/08	9/30/10
205	Design and Implement Interim Action	10/1/10	3/28/14



Project: LDW SC functional level
Date: 8/15/11

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

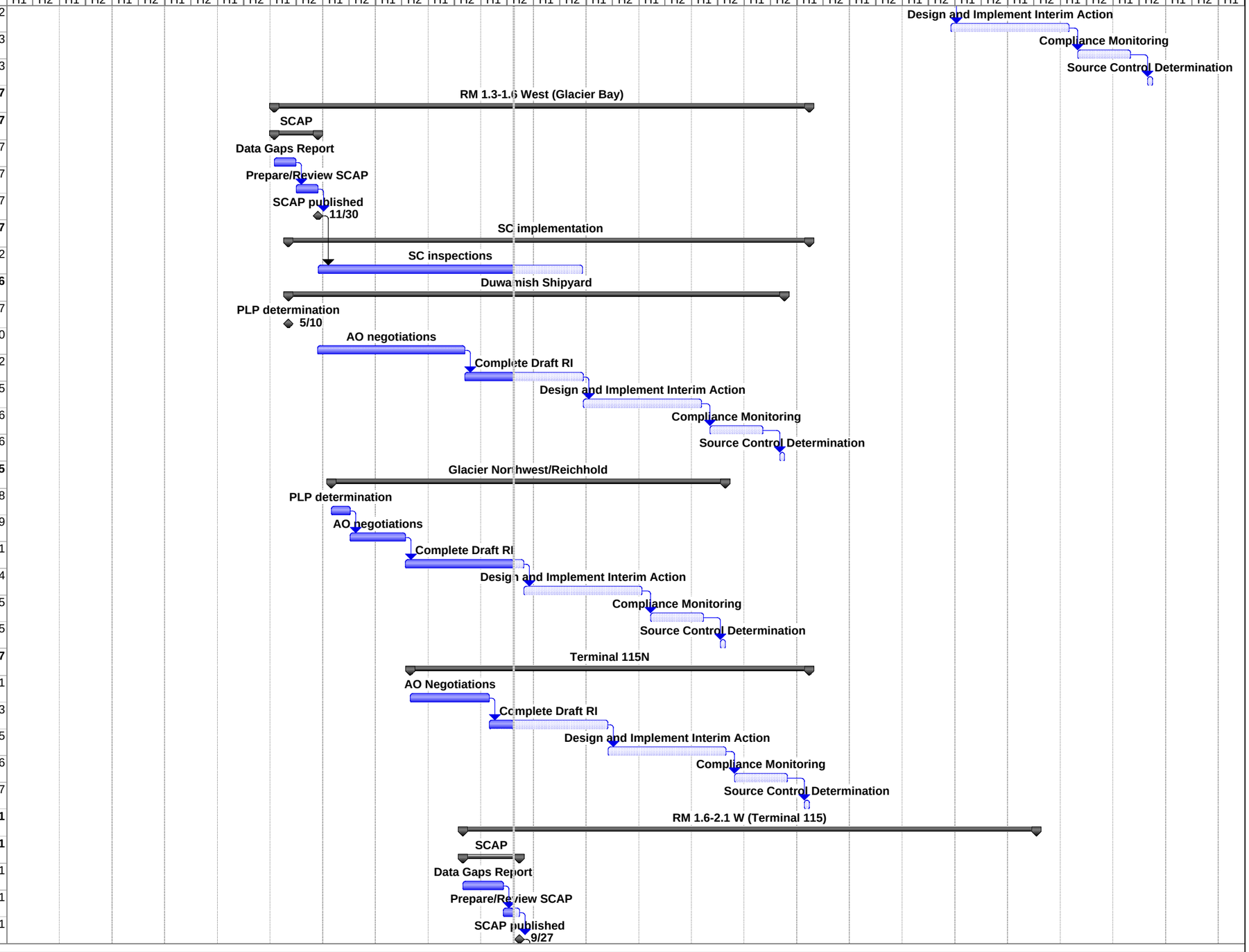
ID	Task Name	Start	Finish
206	Compliance Monitoring	5/26/14	5/29/15
207	**Rhone-Poulenc Site**	**1/12/09**	**2/29/16**
208	Conduct Source Control Action	1/12/09	12/31/14
209	Compliance Monitoring	2/26/15	2/29/16
210	Source Control Determination	6/28/16	7/29/16
211	**RM 4.3-4.9 E (Boeing Developmental Center)**	**10/1/09**	**12/17/15**
212	**SCAP**	**10/1/09**	**12/9/10**
213	Data Gaps Report	10/1/09	9/1/10
214	Prepare/Review SCAP	9/2/10	12/9/10
215	SCAP published	12/9/10	12/9/10
216	**SC implementation**	**12/10/10**	**12/17/15**
217	SC inspections	12/10/10	12/17/15
218	**RM 0.0-1.0 W (Spokane St. to Kellogg Island)**	**1/25/11**	**2/22/23**
219	**SCAP**	**1/25/11**	**12/28/11**
220	Data Gaps Report	1/25/11	7/27/11
221	Prepare/Review SCAP	7/28/11	12/28/11
222	SCAP published	12/28/11	12/28/11
223	**SC implementation**	**12/29/11**	**2/22/23**
224	SC inspections	12/29/11	1/4/17
225	PLP Determination	12/1/14	7/29/15
226	AO negotiations	8/27/15	1/25/17
227	Complete Draft RI	1/26/17	4/26/19
228	Design and Implement Interim Action	4/29/19	7/23/21
229	Compliance Monitoring	9/22/21	9/22/22
230	Source Control Determination	1/20/23	2/22/23
231	**RM 1.0-1.3 W (Kellogg Island to Lafarge)**	**10/21/10**	**10/3/23**
232	**SCAP**	**10/21/10**	**7/29/11**
233	Data Gaps Report	10/21/10	4/22/11
234	Prepare/Review SCAP	4/25/11	7/29/11
235	SCAP published	7/29/11	7/29/11
236	**SC implementation**	**8/1/11**	**10/3/23**
237	SC inspections	8/1/11	8/5/16
238	PLP Determination	7/10/15	3/8/16
239	AO negotiations	4/6/16	9/5/17
240	Complete Draft RI	9/6/17	12/5/19



Project: LDW SC functional level
Date: 8/15/11

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

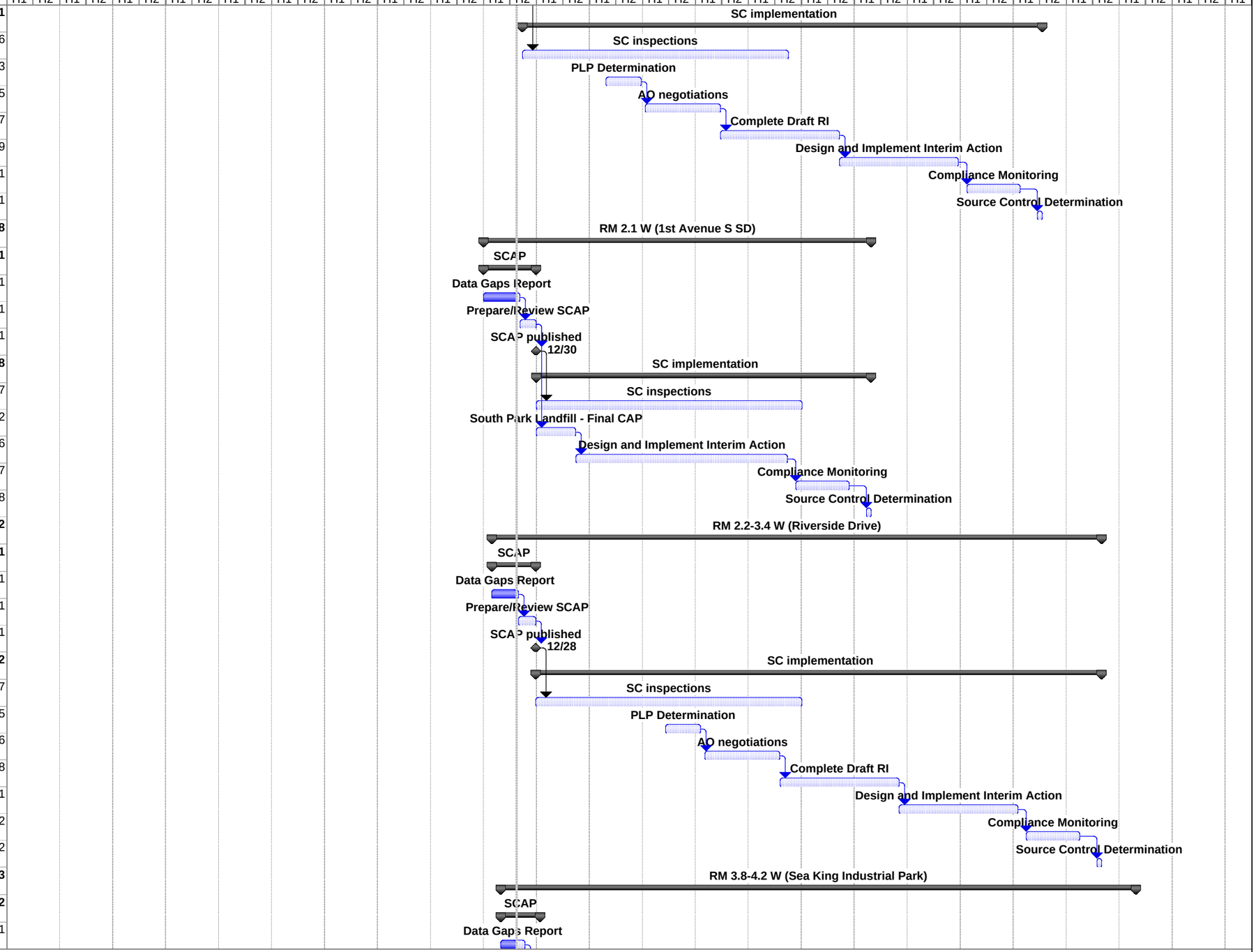
ID	Task Name	Start	Finish
241	Design and Implement Interim Action	12/6/19	3/3/22
242	Compliance Monitoring	5/3/22	5/3/23
243	Source Control Determination	8/31/23	10/3/23
244	**RM 1.3-1.6 West (Glacier Bay)**	**2/1/07**	**3/28/17**
245	**SCAP**	**2/1/07**	**11/30/07**
246	Data Gaps Report	2/1/07	6/29/07
247	Prepare/Review SCAP	7/3/07	11/30/07
248	SCAP published	11/30/07	11/30/07
249	**SC implementation**	**5/10/07**	**3/28/17**
250	SC inspections	12/3/07	12/7/12
251	**Duwamish Shipyard**	**5/10/07**	**10/7/16**
252	PLP determination	5/10/07	5/10/07
253	AO negotiations	11/28/07	9/13/10
254	Complete Draft RI	9/14/10	12/12/12
255	Design and Implement Interim Action	12/13/12	3/11/15
256	Compliance Monitoring	5/11/15	5/10/16
257	Source Control Determination	9/6/16	10/7/16
258	**Glacier Northwest/Reichhold**	**3/3/08**	**8/24/15**
259	PLP determination	3/3/08	7/10/08
260	AO negotiations	7/11/08	7/28/09
261	Complete Draft RI	7/29/09	10/27/11
262	Design and Implement Interim Action	10/28/11	1/23/14
263	Compliance Monitoring	3/25/14	3/25/15
264	Source Control Determination	7/22/15	8/24/15
265	**Terminal 115N**	**9/1/09**	**3/28/17**
266	AO Negotiations	9/1/09	3/2/11
267	Complete Draft RI	3/3/11	5/31/13
268	Design and Implement Interim Action	6/3/13	8/28/15
269	Compliance Monitoring	10/28/15	10/27/16
270	Source Control Determination	2/23/17	3/28/17
271	**RM 1.6-2.1 W (Terminal 115)**	**9/1/10**	**7/20/21**
272	**SCAP**	**9/1/10**	**9/27/11**
273	Data Gaps Report	9/1/10	6/7/11
274	Prepare/Review SCAP	6/8/11	9/27/11
275	SCAP published	9/27/11	9/27/11



Project: LDW SC functional level
Date: 8/15/11

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

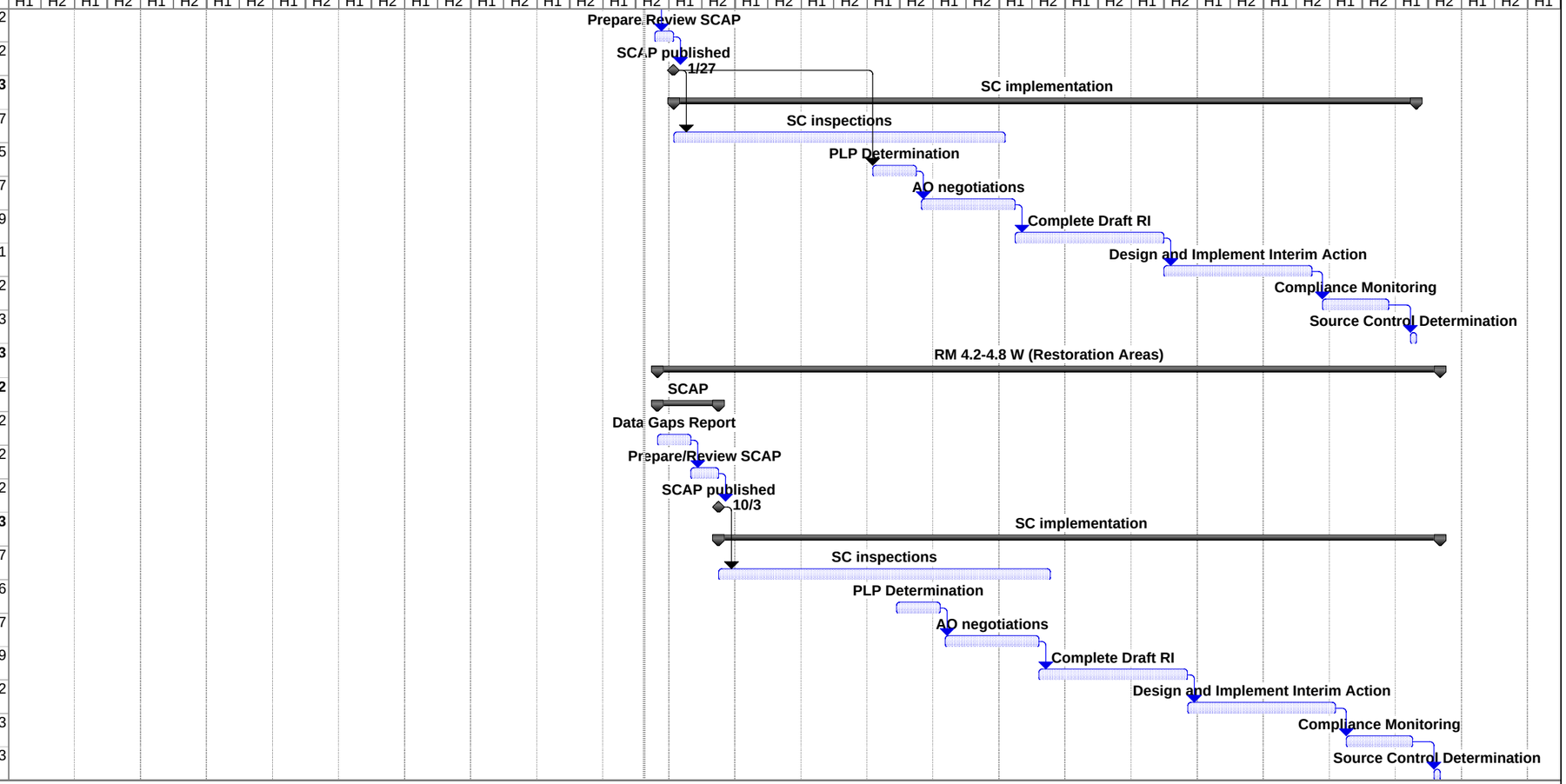
ID	Task Name	Start	Finish
276	**SC implementation**	**9/28/11**	**7/20/21**
277	SC inspections	9/28/11	10/4/16
278	PLP Determination	4/26/13	12/24/13
279	AO negotiations	1/22/14	6/23/15
280	Complete Draft RI	6/24/15	9/21/17
281	Design and Implement Interim Action	9/22/17	12/19/19
282	Compliance Monitoring	2/18/20	2/17/21
283	Source Control Determination	6/17/21	7/20/21
284	**RM 2.1 W (1st Avenue S SD)**	**1/3/11**	**4/27/18**
285	**SCAP**	**1/3/11**	**12/30/11**
286	Data Gaps Report	1/3/11	9/9/11
287	Prepare/Review SCAP	9/12/11	12/30/11
288	SCAP published	12/30/11	12/30/11
289	**SC implementation**	**1/2/12**	**4/27/18**
290	SC inspections	1/2/12	1/6/17
291	South Park Landfill - Final CAP	1/2/12	9/28/12
292	Design and Implement Interim Action	10/1/12	9/27/16
293	Compliance Monitoring	11/25/16	11/27/17
294	Source Control Determination	3/27/18	4/27/18
295	**RM 2.2-3.4 W (Riverside Drive)**	**3/1/11**	**9/2/22**
296	**SCAP**	**3/1/11**	**12/28/11**
297	Data Gaps Report	3/1/11	8/31/11
298	Prepare/Review SCAP	9/1/11	12/28/11
299	SCAP published	12/28/11	12/28/11
300	**SC implementation**	**12/29/11**	**9/2/22**
301	SC inspections	12/29/11	1/4/17
302	PLP Determination	6/11/14	2/6/15
303	AO negotiations	3/9/15	8/5/16
304	Complete Draft RI	8/8/16	11/6/18
305	Design and Implement Interim Action	11/7/18	2/2/21
306	Compliance Monitoring	4/2/21	4/4/22
307	Source Control Determination	8/2/22	9/2/22
308	**RM 3.8-4.2 W (Sea King Industrial Park)**	**5/2/11**	**4/27/23**
309	**SCAP**	**5/2/11**	**1/27/12**
310	Data Gaps Report	5/2/11	10/14/11



Project: LDW SC functional level
Date: 8/15/11

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

ID	Task Name	Start	Finish
311	Prepare/Review SCAP	10/17/11	1/27/12
312	SCAP published	1/27/12	1/27/12
313	**SC implementation**	**1/30/12**	**4/27/23**
314	SC inspections	1/30/12	2/3/17
315	PLP Determination	2/3/15	10/1/15
316	AO negotiations	10/30/15	3/30/17
317	Complete Draft RI	3/31/17	7/1/19
318	Design and Implement Interim Action	7/2/19	9/27/21
319	Compliance Monitoring	11/25/21	11/25/22
320	Source Control Determination	3/27/23	4/27/23
321	**RM 4.2-4.8 W (Restoration Areas)**	**11/1/11**	**9/6/23**
322	**SCAP**	**11/1/11**	**10/3/12**
323	Data Gaps Report	11/1/11	5/2/12
324	Prepare/Review SCAP	5/3/12	10/3/12
325	SCAP published	10/3/12	10/3/12
326	**SC implementation**	**10/4/12**	**9/6/23**
327	SC inspections	10/4/12	10/11/17
328	PLP Determination	6/15/15	2/10/16
329	AO negotiations	3/10/16	8/9/17
330	Complete Draft RI	8/10/17	11/8/19
331	Design and Implement Interim Action	11/11/19	2/4/22
332	Compliance Monitoring	4/6/22	4/6/23
333	Source Control Determination	8/4/23	9/6/23



Project: LDW SC functional level
Date: 8/15/11

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

Appendix B

SPU Inspections
July 2009 through September 2010

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way									
Diagonal Avenue S SD									
3512 Airport Way S	3512 Airport Way S	8/9/2010	Initial	Y	1				1
3D Plastics LLC	5024 Ohio Avenue S	9/21/2009	Initial	--	3	0	0	3	0
3D Plastics LLC	5024 Ohio Avenue S	11/9/2009	Followup	--					
3D Plastics LLC	5024 Ohio Avenue S	12/14/2009	Followup	--					
3D Plastics LLC	5024 Ohio Avenue S	3/1/2010	Followup	Y					
3D Systems Corp.	620 S Industrial Way	8/12/2010	Initial	Y					
7-Eleven Store # 2360-24497C	2009 Rainier Avenue S	9/23/2010	Initial	N	2	0	0	0	2
Alaskan Copper & Brass - 3300	3300 6th Avenue S	7/28/2010	Initial	--	6	1	0	3	2
Alaskan Copper & Brass - 3300	3300 6th Avenue S	8/31/2010	Followup	Y					
Alaskan Copper & Brass - 3200	3200 6th Avenue S	7/28/2010	Initial	--	6	2	0	1	3
Alaskan Copper & Brass - 3200	3200 6th Avenue S	8/31/2010	Followup	Y					
Alaskan Copper & Brass - 3223	3223 6th Avenue S	7/28/2010	Initial	--	7	3	0	1	3
Alaskan Copper & Brass - 3223	3223 6th Avenue S	8/31/2010	Followup	Y					
Alaskan Copper & Brass - 3301	3301 6th Avenue S	7/28/2010	Initial	--	3	0	0	1	2
Alaskan Copper & Brass - 3301	3301 6th Avenue S	8/31/2010	Followup	Y					
Alaskan Copper & Brass - 3317	3317 6th Avenue S	7/28/2010	Initial	--	2	0	0	1	1
Alaskan Copper & Brass - 3317	3317 6th Avenue S	8/31/2010	Followup	Y					
Alaskan Copper & Brass - 3405	3405 6th Avenue S	7/28/2010	Initial	--	11	2	0	3	6
Alaskan Copper & Brass - 3405	3405 6th Avenue S	8/31/2010	Followup	Y					
Allied Furniture Clinic	1716 21st Avenue S	6/11/2010	Initial	--	4	1	0	3	0
Allied Furniture Clinic	1716 21st Avenue S	7/8/2010	Followup	Y					
Atlantic Veterinary Hospital	2115 23rd Avenue S	9/14/2010	Initial	N					
Ballard Organics	2028 21st Avenue S	9/14/2010	Initial	N	3	0	0	0	3
Big Brothers Big Sisters of Puget Sound	5023 Colorado Avenue S	9/21/2009	Initial	--	4	0	0	3	1
Big Brothers Big Sisters of Puget Sound	5023 Colorado Avenue S	10/23/2009	Followup	--					
Big Brothers Big Sisters of Puget Sound	5023 Colorado Avenue S	11/9/2009	Followup	--					
Big Brothers Big Sisters of Puget Sound	5023 Colorado Avenue S	11/17/2009	Followup	Y					
Budget Batteries	2006 Rainier Avenue S	8/30/2010	Initial	Y					
Cash & Carry #583	1915 21st Avenue S	2/11/2010	Initial	--	6	0	0	3	3
Cash & Carry #583	1915 21st Avenue S	4/5/2010	Followup	--					
Cash & Carry #583	1915 21st Avenue S	4/30/2010	Followup	Y					
City of Seattle - OCC	2700 Airport Way S	9/30/2010	Initial	N	7	1	0	1	5
Color Graphics	1421 S Dean Street	5/27/2010	Initial	--	9	1	0	2	6
Color Graphics	1421 S Dean Street	9/1/2010	Followup	--					
Color Graphics	1421 S Dean Street	9/15/2010	Followup	Y					
Colorado Building LLC	5021 Colorado Avenue S	9/21/2009	Initial	Y	4	1	0	0	3
Colorado Building LLC	5021 Colorado Avenue S	11/17/2009	Followup	--					

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Colorado Building LLC	5021 Colorado Avenue S	6/3/2010	Followup	Y	4	1	0	0	3
ConGlobal Industries	1 S Idaho Street	8/20/2009	Followup	--	6	2	0	0	4
ConGlobal Industries	1 S Idaho Street	10/23/2009	Followup	--					
ConGlobal Industries	1 S Idaho Street	12/7/2009	Followup	Y					
Copiers Northwest Inc.	601 S Alaska Street	9/21/2010	Initial	N	3	0	0	3	0
Davis Door Service, Inc.	2021 S Grand Street	2/25/2010	Initial	--	11	2	0	3	6
Davis Door Service, Inc.	2021 S Grand Street	4/29/2010	Followup	--					
Davis Door Service, Inc.	2021 S Grand Street	5/24/2010	Followup	Y					
Dilettante Chocolates	2021 22nd Avenue S	9/23/2010	Initial	N	7	2	0	3	2
Elliot Bay Woodworks	3814 4th Avenue S #15	9/21/2010	Screening	N/A					
Emergency Response Training Institute	812 S Adams Street	12/8/2009	Initial	Y					
First Transit - Airport Way S	9th Avenue S	8/11/2010	Initial	Y					
Georgetown Brewing Co.	5200 Denver Avenue S	9/16/2010	Initial	N	7	0	0	3	4
Grease Monkey #481	2101 23rd Avenue S	9/14/2010	Initial	N	3	1	1	0	1
Hollywood Lights	660 S Dakota Street	7/27/2010	Initial	--	2	0	0	1	1
Hollywood Lights	660 S Dakota Street	9/10/2010	Followup	Y					
John Perine Co.	820 S Adams Street	12/8/2009	Initial	--	6	0	0	3	3
John Perine Co.	820 S Adams Street	1/12/2010	Followup	Y					
Kenny Hugh	5026 Ohio Avenue S	9/21/2009	Screening	N/A					
McKinstry Company	4800 Denver Avenue S	9/2/2010	Initial	N	9	2	1	1	5
Nguyen's Pharmacy	2120 Rainier Avenue S	9/24/2010	Screening	N/A					
Pacific Northwest Theatre Associates, Inc.	615 S Alaska Street	9/28/2010	Initial	Y					
PCL Construction	3512 Airport Way S	8/9/2010	Screening	N/A					
Pepsi Bottling Group - 26th Avenue	2300 26th Avenue S	8/12/2010	Initial	--	7	2	0	2	3
Pepsi Bottling Group - 26th Avenue	2300 26th Avenue S	9/28/2010	Followup	Y					
Plymouth Poultry	4500 7th Avenue S	8/13/2009	Initial	--	7	0	0	4	3
Plymouth Poultry	4500 7th Avenue S	10/1/2009	Followup	Y					
Powell Patinations	5017 Colorado Avenue S	9/22/2009	Initial	--	3	1	0	2	0
Powell Patinations	5017 Colorado Avenue S	11/17/2009	Followup	Y					
Precision Welder & Engine Repair	4429 Airport Way S	8/5/2010	Initial	--	9	3	0	1	5
Precision Welder & Engine Repair	4429 Airport Way S	8/6/2010	Followup	--					
Precision Welder & Engine Repair	4429 Airport Way S	9/23/2010	Followup	Y					
Sealant Specialists	4621 Airport Way S	6/29/2010	Initial	--	8	2	0	5	1
Sealant Specialists	4621 Airport Way S	9/1/2010	Followup	--					
Sealant Specialists	4621 Airport Way S	9/29/2010	Followup	Y					
Seattle Barrel Company - Main	4716 Airport Way S	2/10/2010	Followup	--	32	6	2	8	16
Seattle Barrel Company - Main	4716 Airport Way S	7/19/2010	Followup	Y					
Seattle Barrel Company - Storage	4520 7th Avenue S	2/10/2010	Screening	N/A	3	1	0	0	2
Seattle City Light	3613 4th Avenue S	9/2/2010	Followup	Y					

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Seattle Lighthouse for the Blind Foundation	2501 S Plum Street	8/11/2009	Initial	--	18	3	1	6	8
Seattle Lighthouse for the Blind Foundation	2501 S Plum Street	9/8/2009	Followup	Y					
Seattle Stair & Design	3810 4th Avenue S	9/22/2010	Initial	Y					
Shell #111	852 Rainier Avenue S	7/9/2010	Initial	--	10	0	0	6	4
Shell #111	852 Rainier Avenue S	9/1/2010	Followup	--					
Shell #111	852 Rainier Avenue S	9/28/2010	Followup	Y					
Skyline Electric & MFG. Company	3619 7th Avenue S	7/27/2010	Initial	N	5	1	0	3	1
Steel Toe Studios	5020 Ohio Avenue S	9/21/2009	Initial	--	3	0	0	3	0
Steel Toe Studios	5020 Ohio Avenue S	12/8/2009	Followup	Y					
True Fabrications	14 S Idaho Street	9/17/2010	Initial	N	3	0	0	3	0
Twinline Motorcycles LLC	2106 S Holgate Street	2/11/2010	Initial	--	5	1	0	3	1
Twinline Motorcycles LLC	2106 S Holgate Street	2/25/2010	Followup	--					
Twinline Motorcycles LLC	2106 S Holgate Street	3/22/2010	Followup	--					
Twinline Motorcycles LLC	2106 S Holgate Street	4/16/2010	Followup	--					
Twinline Motorcycles LLC	2106 S Holgate Street	6/28/2010	Self-Cert	N					
Union Pacific Railroad	4700 Denver Avenue S	12/17/2009	Followup	N	4	0	0	1	3
Washington State DOT	450 S Spokane Street	7/22/2010	Initial	--	6	1	0	2	3
Washington State DOT	450 S Spokane Street	7/27/2010	Followup	N					
Waste Management, Inc. Alaska Street Facility	70 S Alaska Street	9/30/2009	Initial	--	1	0	0	0	1
Waste Management, Inc. Alaska Street Facility	70 S Alaska Street	11/19/2009	Followup	Y					
Y&M Auto Repair	2114 22nd Avenue S	7/2/2009	Initial	--	18	6	0	6	6
Y&M Auto Repair	2114 22nd Avenue S	9/1/2009	Followup	--					
Y&M Auto Repair	2114 22nd Avenue S	9/3/2009	Followup	--					
Y&M Auto Repair	2114 22nd Avenue S	11/6/2009	Followup	Y					
Duwamish/Diagonal CSO									
Alaskan Copper & Brass	4700 Colorado Avenue S	7/28/2010	Initial	--	4	0	0	0	4
Alaskan Copper & Brass	4700 Colorado Avenue S	8/31/2010	Followup	Y					
Alaskan Copper & Brass	628 S Hanford Street	7/28/2010	Initial	--	6	2	0	1	3
Alaskan Copper & Brass	628 S Hanford Street	8/31/2010	Followup	Y					
Alaskan Copper & Brass-2958	2958 6th Avenue S	7/28/2010	Initial	--	3	0	0	2	1
Alaskan Copper & Brass-2958	2958 6th Avenue S	8/31/2010	Followup	Y					
FleetMasters Inc.	7130 8th Avenue S	7/28/2009	Initial	--	3	1	0	2	0
FleetMasters Inc.	7130 8th Avenue S	9/4/2009	Followup	Y					
Greenspace Inc.	910 Boylston Avenue	9/16/2010	Initial	Y	1				1
Haramain Mini-Market	5020 Rainier Avenue S	7/9/2010	Screening	N/A					
Richlen's Mini-Mart/76 Gas Station	2220 E Union Street	8/12/2010	Initial	--	8	0	0	6	2
Richlen's Mini-Mart/76 Gas Station	2220 E Union Street	9/20/2010	Followup	Y					
Rosso Gardens	6404 Ellis Avenue S	8/6/2009	Initial	--	7	5	1	1	0
Rosso Gardens	6404 Ellis Avenue S	9/21/2009	Followup	Y					

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Shell Gas Station & Food Mart	6200 Corson Avenue S	9/1/2009	Followup	Y					
Starline Inc.	9801 Martin Luther King Jr Way S	6/11/2010	Initial	N	3	0	0	1	2
U-Haul Center of Rainier	2515 Rainier Avenue S	9/2/2009	Followup	Y					
RM 1.0-1.2 East (King County Lease Parcels)									
Duwamish East Direct									
eCullet	5801 East Marginal Way S	8/18/2009	Initial	--	3	0	0	2	1
eCullet	5801 East Marginal Way S	11/16/2009	Followup	Y					
RM 1.2-1.7 East (Saint Gobain to Glacier Northwest									
Duwamish East Direct									
Certainteed Gypsum	5931 East Marginal Way S	7/16/2009	Followup	--	7	1	0	1	5
Certainteed Gypsum	5931 East Marginal Way S	9/9/2009	Followup	Y					
Saint Gobain Containers	5801 East Marginal Way S	7/14/2009	Initial	--					
Saint Gobain Containers	5801 East Marginal Way S	8/31/2010	Followup	N	10	2	0	2	6
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)									
S River Street SD									
Commercial Floor Distributors Inc.	210 S River Street	10/1/2009	Followup	--	5	0	0	3	2
Commercial Floor Distributors Inc.	210 S River Street	11/24/2009	Followup	Y					
Freight Expeditors	6501 East Marginal Way S	2/18/2010	Initial	Y	1	0	0	0	1
Modern Concrete Design	6501 East Marginal Way S	7/8/2010	Initial	Y					
S Brighton Street SD									
Alexander Lighting	6719 East Marginal Way S	8/5/2009	Initial	--	3	0	0	3	0
Alexander Lighting	6719 East Marginal Way S	2/24/2009	Followup	Y					
Alpine Auto Sales	6722 Fox Avenue S	7/8/2009	Followup	--	19	9	0	3	7
Alpine Auto Sales	6722 Fox Avenue S	8/20/2009	Followup	--					
Alpine Auto Sales	6722 Fox Avenue S	11/5/2009	Followup	Y					
Camerich	6767 East Marginal Way S	8/5/2009	Initial	--	3	0	0	3	0
Camerich	6767 East Marginal Way S	8/26/2009	Followup	Y					
Longview Fibre- Warehouse	6705 East Marginal Way S	8/20/2009	Screening	N/A					
ReBinder.com	6779 East Marginal Way S	8/20/2009	Initial	--	4	0	1	3	0
ReBinder.com	6779 East Marginal Way S	11/13/2009	Followup	Y					
Shultz Distributing Inc. - Marginal	6851 East Marginal Way S	8/18/2010	Initial	Y					
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)									
S Garden Street SD									
Seattle Iron & Metals Corp.	601 S Myrtle Street	7/28/2009	Followup	--	4	0	0	1	3
Seattle Iron & Metals Corp.	601 S Myrtle Street	5/11/2010	Followup	--					
Seattle Iron & Metals Corp.	601 S Myrtle Street	8/13/2010	Followup	N					
Duwamish East Direct									
EWC Group, Inc.	660 S Othello Street	7/30/2009	Initial	--	2	0	0	2	0
EWC Group, Inc.	660 S Othello Street	8/18/2009	Followup	Y					

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Seattle Transload, Inc.	620 S Othello Street	7/30/2009	Initial	Y					
RM 2.8 East (EAA-3: Slip 4)									
Slip 4									
Boom Boys Cranes LLC	7400 8th Avenue S	4/15/2010	Initial	--	8	0	0	3	5
Boom Boys Cranes LLC	7400 8th Avenue S	5/5/2010	Followup	--					
Boom Boys Cranes LLC	7400 8th Avenue S	6/24/2010	Followup	Y					
Cacallori Marble	1535 S Albro Street	9/28/2009	Initial	--	1	0	0	0	1
Cacallori Marble	1535 S Albro Street	11/9/2009	Followup	Y					
First Student	7400 8th Avenue S	5/5/2010	Initial	N	3	0	0	2	1
Heko Services Inc.	7400 8th Avenue S	4/15/2010	Initial	--	7	0	0	3	4
Heko Services Inc.	7400 8th Avenue S	5/5/2010	Followup	--					
Heko Services Inc.	7400 8th Avenue S	6/24/2010	Followup	Y					
Organic Fuel Processors	7400 8th Avenue S	4/22/2010	Initial	--	7	0	0	3	4
Organic Fuel Processors	7400 8th Avenue S	5/5/2010	Followup	--					
Organic Fuel Processors	7400 8th Avenue S	6/24/2010	Followup	Y					
Tire Distribution Systems	6311 Corgiat Drive S	8/27/2009	Initial	--	5	2	0	2	1
Tire Distribution Systems	6311 Corgiat Drive S	10/1/2009	Followup	--					
Tire Distribution Systems	6311 Corgiat Drive S	11/10/2009	Followup	Y					
RM 2.8-3.7 East (EAA-4: Boeing Plant 2 to Jorgensen Forge									
16th Avenue S SD									
Airgas Nor-Pac, Inc.	7700 14th Avenue S	3/16/2010	Initial	N					
RM 4.9 East (EAA-7: Norfolk CSO/SD)									
Norfolk SD/CSO/EOF									
Northwest Gourmet Food Products Inc.	9620 Martin Luther King Jr Way S	9/15/2010	Initial	Y					
Special Asphalt Products Inc	9243 Martin Luther King Jr Way S	9/2/2010	Initial	N	14	2	0	3	9
Speedee Lube	9637 Martin Luther King Jr Way S	9/15/2010	Initial	Y					
RM 0.0-1.0 West (Spokane St to Kellogg Island									
SW Dakota Street SD									
4101 W Marginal Way SW Business Park	4101 West Marginal Way SW	4/30/2010	Initial	Y					
Active Environmental Inc	4001 16th Avenue SW	3/25/2010	Initial	--	3	0	0	2	1
Active Environmental Inc	4001 16th Avenue SW	5/11/2010	Followup	Y					
Ferguson Enterprises Inc.	4100 West Marginal Way SW	4/5/2010	Initial	--	7	1	0	2	4
Ferguson Enterprises Inc.	4100 West Marginal Way SW	7/8/2010	Followup	--					
Ferguson Enterprises Inc.	4100 West Marginal Way SW	7/16/2010	Followup	Y					
Heathco International Inc	4033 16th Avenue SW #B	4/13/2010	Initial	--	3	0	0	3	0
Heathco International Inc	4033 16th Avenue SW #B	6/17/2010	Followup	--					
Heathco International Inc	4033 16th Avenue SW #B	8/2/2010	Followup	--					
Heathco International Inc	4033 16th Avenue SW #B	8/24/2010	Followup	Y					
Metal Shorts Inc.	4101 West Marginal Way SW #B9	4/5/2010	Initial	Y					

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
West Seattle Radiator Service - 4101	4101 West Marginal Way SW #A3	3/25/2010	Initial	--	7	2	1	3	1
West Seattle Radiator Service - 4101	4101 West Marginal Way SW #A3	5/11/2010	Followup	Y					
Westbridge Maintenance Facility	4209 West Marginal Way SW	5/6/2010	Initial	--	5	2	0	0	3
Westbridge Maintenance Facility	4209 West Marginal Way SW	6/16/2010	Followup	--					
Westbridge Maintenance Facility	4209 West Marginal Way SW	8/5/2010	Followup	Y					
Wheelchairs Plus Inc	4101 West Marginal Way SW #A2	4/8/2010	Initial	N					
SW Idaho Street SD									
Airclean Technologies Inc	4725 West Marginal Way SW	3/18/2010	Initial	--	6	0	0	3	3
Airclean Technologies Inc	4725 West Marginal Way SW	5/4/2010	Followup	Y					
Aquatic Enterprises, Inc.	4101 West Marginal Way SW #A6	3/11/2010	Initial	--	3	0	0	0	3
Aquatic Enterprises, Inc.	4101 West Marginal Way SW #A6	4/16/2010	Followup	Y					
Concrete Restoration Inc	4025 West Marginal Way SW	3/18/2010	Initial	--	14	5	1	3	5
Concrete Restoration Inc	4025 West Marginal Way SW	3/26/2010	Followup	--					
Concrete Restoration Inc	4025 West Marginal Way SW	4/8/2010	Followup	--					
Concrete Restoration Inc	4025 West Marginal Way SW	4/16/2010	Followup	--					
Concrete Restoration Inc	4025 West Marginal Way SW	4/28/2010	Followup	--					
Concrete Restoration Inc	4025 West Marginal Way SW	6/8/2010	Followup	--					
Concrete Restoration Inc	4025 West Marginal Way SW	8/2/2010	Followup	Y					
Continental Van Lines	4501 West Marginal Way SW	3/16/2010	Initial	--	3	0	0	1	2
Continental Van Lines	4501 West Marginal Way SW	4/16/2010	Followup	--					
Continental Van Lines	4501 West Marginal Way SW	5/4/2010	Followup	Y					
Evergreen Building Products LLC	4835 West Marginal Way SW	3/18/2010	Initial	--	3	0	0	2	1
Evergreen Building Products LLC	4835 West Marginal Way SW	5/27/2010	Followup	Y					
Expert Marble & Granite Inc.	4749 West Marginal Way SW	4/12/2010	Initial	--	5	0	2	3	0
Expert Marble & Granite Inc.	4749 West Marginal Way SW	5/18/2010	Self-Cert	Y					
Fog Tite Inc	4819 West Marginal Way SW	9/9/2009	Followup	--	5	0	1	3	1
Fog Tite Inc	4819 West Marginal Way SW	10/16/2009	Followup	--					
Fog Tite Inc	4819 West Marginal Way SW	2/16/2010	Followup	--					
Fog Tite Inc	4819 West Marginal Way SW	4/27/2010	Followup	Y					
Georgetown Home & Garden LLC	4239 West Marginal Way SW	7/8/2010	Initial	Y					
Heath Landscape Services Inc	4849 West Marginal Way SW	3/26/2010	Initial	--	6	1	0	3	2
Heath Landscape Services Inc	4849 West Marginal Way SW	5/4/2010	Followup	--					
Heath Landscape Services Inc	4849 West Marginal Way SW	6/16/2010	Followup	--					
Heath Landscape Services Inc	4849 West Marginal Way SW	6/22/2010	Followup	Y					
New Finishes, Inc.	4235 West Marginal Way SW	1/25/2010	Initial	--	7	4	0	3	0
New Finishes, Inc.	4235 West Marginal Way SW	4/5/2010	Followup	--					
New Finishes, Inc.	4235 West Marginal Way SW	4/20/2010	Followup	Y					
Pacifica Marine Inc.	4233 West Marginal Way SW	3/11/2010	Initial	--	5	2	0	3	0
Pacifica Marine Inc.	4233 West Marginal Way SW	4/30/2010	Followup	--					

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Pacifica Marine Inc.	4233 West Marginal Way SW	5/24/2010	Followup	Y					
Penthouse Drapery	4033 16th Avenue SW	8/2/2010	Initial	--	6	1	0	3	2
Penthouse Drapery	4033 16th Avenue SW	9/15/2010	Followup	N					
Raynproof Roofing	4117 16th Avenue SW	3/24/2010	Initial	Y					
Tank Wise LLC	5405 West Marginal Way SW	5/11/2010	Initial	N					
RM 1.6-2.1 West (Terminal 115)									
SW Kenny Street SD									
Aluminum & Bronze Fabricators	6301 West Marginal Way SW	7/30/2010	Initial	--	16	4	0	5	7
Aluminum & Bronze Fabricators	6301 West Marginal Way SW	9/21/2010	Followup	Y					
Chelan MFG Co. Inc	5901 West Marginal Way SW	8/26/2009	Initial	--	10	4	0	3	3
Chelan MFG Co. Inc	5901 West Marginal Way SW	11/5/2009	Followup	Y					
Emswiler Construction	6045 West Marginal Way SW	12/28/2009	Initial	--	13	1	0	6	6
Emswiler Construction	6045 West Marginal Way SW	2/11/2010	Followup	--					
Emswiler Construction	6045 West Marginal Way SW	3/4/2010	Followup	--					
Emswiler Construction	6045 West Marginal Way SW	3/22/2010	Followup	Y					
Gene Summy Lumber	6000 West Marginal Way SW	5/11/2010	Initial	--	5	0	0	4	1
Gene Summy Lumber	6000 West Marginal Way SW	7/9/2010	Followup	Y					
Krueger Sheet Metal Co.	6515 West Marginal Way SW	4/12/2010	Initial	--	5	0	0	3	2
Krueger Sheet Metal Co.	6515 West Marginal Way SW	5/18/2010	Followup	Y					
Pacific Rim Equipment Rental	6515 West Marginal Way SW	12/17/2009	Initial	--	8	0	0	3	5
Pacific Rim Equipment Rental	6515 West Marginal Way SW	1/25/2010	Followup	--					
Pacific Rim Equipment Rental	6515 West Marginal Way SW	3/4/2010	Followup	Y					
Highland Way SW SD									
A&E Auto Repair Inc.	7902 9th Avenue SW	4/12/2010	Initial	--	6	1	0	3	2
A&E Auto Repair Inc.	7902 9th Avenue SW	5/24/2010	Followup	Y					
Pacific Plumbing Supply Co. LLC	7115 West Marginal Way SW	12/7/2009	Initial	--	7	1	0	3	3
Pacific Plumbing Supply Co. LLC	7115 West Marginal Way SW	2/2/2010	Followup	--					
Pacific Plumbing Supply Co. LLC	7115 West Marginal Way SW	2/22/2010	Followup	Y					
Pioneer Industries	7000 Highland Park Way SW	11/3/2009	Initial	--	7	2	0	2	3
Pioneer Industries	7000 Highland Park Way SW	11/17/2009	Followup	--					
Pioneer Industries	7000 Highland Park Way SW	12/14/2009	Followup	--					
Pioneer Industries	7000 Highland Park Way SW	12/28/2009	Followup	--					
Pioneer Industries	7000 Highland Park Way SW	1/25/2010	Followup	Y					
Duwamish West Direct									
Commercial Fence Corp.	150 SW Michigan Street	5/19/2010	Initial	--	3	0	0	0	3
Commercial Fence Corp.	150 SW Michigan Street	7/21/2010	Followup	Y					
Icicle Seafoods	206 SW Michigan	7/16/2009	Screening	N/A					
Seafreeze	250 SW Michigan	7/16/2009	Initial	Y					

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
RM 2.1 West (1st Avenue S SD)									
1st Avenue S SD									
First Student	130 S Kenyon Street	11/5/2009	Initial	N					
Flying Fish Express	7937 2nd Avenue S	12/28/2009	Initial	--	2	0	0	0	2
Flying Fish Express	7937 2nd Avenue S	2/22/2010	Followup	Y					
Global Diving & Salvage Inc.	8165 1st Avenue S	1/25/2010	Initial	--	4	2	0	2	0
Global Diving & Salvage Inc.	8165 1st Avenue S	3/4/2010	Followup	Y					
IMS	7901 1st Avenue S	5/11/2010	Initial	--	7	0	0	3	4
IMS	7901 1st Avenue S	7/8/2010	Followup	Y					
Jones Stevedoring Company	7245 West Marginal Way SW	7/16/2009	Initial	--	4	1	0	3	0
Jones Stevedoring Company	7245 West Marginal Way SW	8/31/2009	Followup	Y					
MacDonald Miller Co., Inc.	7717 Detroit Avenue SW	5/24/2010	Initial	--	7	2	0	3	2
MacDonald Miller Co., Inc.	7717 Detroit Avenue SW	5/27/2010	Followup	--					
MacDonald Miller Co., Inc.	7717 Detroit Avenue SW	7/29/2010	Followup	Y					
MC Delivery	7245 West Marginal Way SW	7/16/2009	Screening	N/A					
MDE Engineers Inc.	7245 West Marginal Way SW	7/16/2009	Screening	N/A					
Non Ferrous Metal	230 S Chicago Street	9/24/2009	Initial	--	2		1	1	
Non Ferrous Metal	230 S Chicago Street	11/9/2009	Followup	Y					
Nuprecon	7245 West Marginal Way SW	7/8/2009	Initial	--	9	3	2	3	1
Nuprecon	7245 West Marginal Way SW	10/2/2009	Followup	Y					
Samson Tug and Barge	7600 2nd Avenue SW	9/28/2010	Initial	N	4	1	0	1	2
Second Use Building Materials Inc.	8001 5th Avenue S	9/11/2009	Initial	Y	5	0	0	3	2
Second Use Building Materials Inc. - 2nd Avenue	7953 2nd Avenue S	10/19/2009	Initial	Y	3	0	0	3	0
Sound Delivery Service	7245 West Marginal Way SW	7/16/2009	Screening	N/A					
Specialty Storage Company	7245 West Marginal Way SW	7/16/2009	Screening	N/A					
T H Seafood	7901 2nd Avenue S	2/5/2010	Initial	--	5	0	1	3	1
T H Seafood	7901 2nd Avenue S	3/16/2010	Followup	--					
T H Seafood	7901 2nd Avenue S	6/16/2010	Followup	Y					
TNEMEC Co. Inc.	7929 2nd Avenue S	10/19/2009	Initial	Y					
Waste Management	7201 West Marginal Way SW	9/15/2009	Initial	--	2	0	0	1	1
Waste Management	7201 West Marginal Way SW	11/17/2009	Followup	Y					
Western Crane	7245 West Marginal Way SW	7/16/2009	Screening	N/A					
W.G. Clark Construction Co.	7958 Occidental Avenue S	10/20/2009	Initial	--	8	2	0	2	4
W.G. Clark Construction Co.	7958 Occidental Avenue S	12/7/2009	Followup	Y					
RM 2.1-2.2 West (EAA-2: Trotsky Inlet)									
Trotsky Inlet									
Bill's Mobile Service	7265 2nd Avenue S	8/20/2009	Initial	--	15	4	0	3	8
Bill's Mobile Service	7265 2nd Avenue S	10/9/2009	Followup	Y					
Kelly-Ryan Inc.	7235 2nd Avenue S	9/21/2009	Initial	--	8	5	0	1	2

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Kelly-Ryan Inc.	7235 2nd Avenue S	11/17/2009	Followup	Y					
United Iron Works	7421 5th Avenue S	8/12/2010	Initial	--	8	1	0	2	5
United Iron Works	7421 5th Avenue S	9/23/2010	Followup	N					
Western Marine Construction	7245 2nd Avenue S	10/28/2009	Initial	Y					
2nd Avenue S SD									
Pacific Western Agencies, Inc.	7700 2nd Avenue S	10/16/2009	Initial	--	3	0	0	3	0
Pacific Western Agencies, Inc.	7700 2nd Avenue S	10/26/2009	Followup	Y					
PACO, Yard 1	7400 2nd Avenue S	7/7/2010	Initial	--	12	3	0	4	5
PACO, Yard 1	7400 2nd Avenue S	9/1/2010	Followup	Y					
PACO, Yard 2	7560 2nd Avenue S	7/7/2010	Initial	--	9	0	0	4	5
PACO, Yard 2	7560 2nd Avenue S	9/1/2010	Followup	Y					
PACO, Yard 3	7601 2nd Avenue S	7/7/2010	Initial	--	5	0	0	4	1
PACO, Yard 3	7601 2nd Avenue S	9/1/2010	Followup	Y					
Seaport Food Mart	7801 Detroit Avenue SW	9/24/2010	Initial	N	6	0	1	3	2
RM 2.2-3.4 West (Riverside Drive)									
7th Avenue S SD									
ADS Environmental Services	401 S Webster Street	2/2/2010	Screening	N/A					
African Northwest Inc.	470 S Kenyon Street	9/11/2009	Initial	--	5	2	0	3	0
African Northwest Inc.	470 S Kenyon Street	10/23/2009	Followup	Y					
Airport Towing	301 S Sullivan Street	12/7/2009	Initial	--	5	0	0	3	2
Airport Towing	301 S Sullivan Street	1/19/2010	Followup	Y					
All Metal Arts Seattle	7800 7th Avenue S	10/1/2009	Initial	--	3	0	0	2	1
All Metal Arts Seattle	7800 7th Avenue S	11/9/2009	Followup	--					
All Metal Arts Seattle	7800 7th Avenue S	1/5/2010	Followup	Y					
American Civil Construction West Coast Inc.	700 S Riverside Drive	1/11/2010	Initial	--	5	0	0	2	3
American Civil Construction West Coast Inc.	700 S Riverside Drive	3/22/2010	Followup	Y					
Anthony Construction Inc.	8110 7th Avenue S	9/24/2009	Initial	--	6	2	0	3	1
Anthony Construction Inc.	8110 7th Avenue S	11/9/2009	Followup	Y					
Arkadia Woodworking	309 S Cloverdale Street #C38	2/2/2010	Screening	N/A					
Bacon Salt	309 S Cloverdale Street #D10	2/2/2010	Screening	N/A					
Book It Repertory Theater	7620 2nd Avenue S	6/7/2010	Screening	N/A	0				
BRD Roofing	309 S Cloverdale Street #C40	2/2/2010	Screening	N/A					
Breaktime Deli & Café	309 S Cloverdale Street #A1	2/5/2010	Screening	N/A					
Cain Bolt and Gasket	7724 7th Avenue S	8/26/2009	Initial	--	5	1	0	1	3
Cain Bolt and Gasket	7724 7th Avenue S	10/1/2009	Followup	Y					
Coach Maintenance	255 S Holden Street	12/11/2009	Initial	Y					
Consistent Coatings Inc	719 S Riverside Drive	10/1/2009	Initial	--	3	0	0	3	0
Consistent Coatings Inc	719 S Riverside Drive	11/9/2009	Followup	Y					
Custom Crating Company Inc.	233 S Holden St	10/1/2009	Initial	--	1	0	0	0	1

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Custom Crating Company Inc.	233 S Holden St	11/9/2009	Followup	Y					
Datrex Marine Safety Equipment	309 S Cloverdale St #B8	2/2/2010	Screening	N/A					
Devir US LLC	309 S Cloverdale St #D32	2/2/2010	Screening	N/A					
Eagle Eye Enterprise Corp.	8219 7th Avenue S	10/20/2009	Initial	--	5	1	1	3	0
Eagle Eye Enterprise Corp.	8219 7th Avenue S	12/23/2009	Followup	Y					
Emergency Preparedness Service	309 S Cloverdale St #B10	2/2/2010	Screening	N/A					
Engine Machine Services	309 S Cloverdale St #C5	3/3/2010	Screening	N/A					
Evergreen Town Car Service	309 S Cloverdale St #C2	3/3/2010	Screening	N/A					
Federal Marine & Defense Services, LLC	8000 5th Avenue S	11/16/2009	Initial	--	4	0	0	3	1
Federal Marine & Defense Services, LLC	8000 5th Avenue S	12/28/2009	Followup	Y					
Gil's Aluminum & Shell Core Shop	533 S Holden Street	9/23/2010	Initial	N		0	0	0	0
Gourmondo	309 S Cloverdale Street #B24	3/3/2010	Initial	--	3	0	0	3	0
Gourmondo	309 S Cloverdale Street #B24	3/11/2010	Followup	Y					
Graham Trucking	722 S Chicago Street	8/25/2009	Initial	Y					
Harsch Investment Properties	309 S Cloverdale Street #B14	10/5/2009	Initial	--	2	1	0	1	0
Harsch Investment Properties	309 S Cloverdale Street #B14	1/6/2010	Followup	Y					
Hudson Bay Insulation	8230 5th Avenue S #B	12/4/2009	Initial	--	4	0	0	3	1
Hudson Bay Insulation	8230 5th Avenue S #B	2/1/2010	Followup	Y					
IE GO Corp	309 S Cloverdale Street #E1	3/3/2010	Screening	N/A					
Jon's Recycling	7620 2nd Avenue S	6/7/2010	Initial	N	13	3	0	2	8
Kane Medical	309 S Cloverdale Street #C10	3/3/2010	Screening	N/A					
Liquor Control Specialists	309 S Cloverdale Street #D24	3/3/2010	Screening	N/A					
Little Rae's Bakery	309 S Cloverdale Street #D47	3/3/2010	Screening	N/A					
Marine Lumber Services	525 S Chicago Street	2/9/2010	Followup	--	1	0	0	0	1
Marine Lumber Services	525 S Chicago Street	3/8/2010	Followup	--					
Marine Lumber Services	525 S Chicago Street	7/26/2010	Followup	--					
Marine Lumber Services	525 S Chicago Street	7/30/2010	Followup	--					
Marine Lumber Services	525 S Chicago Street	9/2/2010	Followup	N					
Mechanical Agents Inc.	550 S Monroe Street	10/1/2009	Initial	Y					
Mike's Truck Repair and Fabrication Inc.	515 S Southern Street	9/11/2009	Initial	--	10	2	0	6	2
Mike's Truck Repair and Fabrication Inc.	515 S Southern Street	10/20/2009	Followup	--					
Mike's Truck Repair and Fabrication Inc.	515 S Southern Street	11/9/2009	Followup	--					
Mike's Truck Repair and Fabrication Inc.	515 S Southern Street	11/16/2009	Followup	Y					
MTI	7709 5th Avenue S	8/26/2009	Initial	Y	2	2			
Northwest Laboratories	241 S Holden Street	9/28/2009	Initial	--	5	2	0	3	0
Northwest Laboratories	241 S Holden Street	11/9/2009	Followup	Y					
O & J Sewing	309 S Cloverdale Street #C39	2/2/2010	Screening	N/A					
Ochsner Auto Body	309 S Cloverdale Street #C30	2/5/2010	Initial	Y					
Olympic Steel Door Inc.	7800 7th Avenue S	9/14/2009	Initial	--	3	1	0	2	0

Appendix B: SPU Source Control Inspections (July 2009 through September 2010)

Facility	Address	Date Inspected	Inspection Type	In Compliance?	Total Corrective Actions	HW	IW	SP	SW
Olympic Steel Door Inc.	7800 7th Avenue S	10/19/2009	Followup	Y					
Pier 55 Shirt Company	8230 5th Avenue S #A	12/21/2009	Initial	Y					
Pro Fab, Inc.	211 S Austin Street	6/29/2010	Initial	Y					
Radio Holland USA	309 S Cloverdale Street #D21	2/2/2010	Initial	Y					
Redox Inc.	7800 7th Avenue S	9/14/2009	Initial	--	5	1	0	3	1
Redox Inc.	7800 7th Avenue S	10/19/2009	Followup	Y					
Ritrovo	309 S Cloverdale Street #D11-D12	3/3/2010	Screening	N/A					
Schubert Floorcovering Co.	8305 7th Avenue S	10/19/2009	Initial	--	5	0	0	3	2
Schubert Floorcovering Co.	8305 7th Avenue S	12/7/2009	Followup	--					
Schubert Floorcovering Co.	8305 7th Avenue S	12/21/2009	Followup	Y					
Schuchart Corp.	530 S Holden Street	11/16/2009	Initial	--	3	0	0	1	2
Schuchart Corp.	530 S Holden Street	12/21/2009	Followup	Y					
Synesso Inc.	309 S Cloverdale Street #C41	2/2/2010	Screening	N/A					
The Newman Trading Company LLC	309 S Cloverdale Street #C28	2/2/2010	Screening	N/A					
United Professional Caulking & Restoration	309 S Cloverdale Street #A11	2/2/2010	Screening	N/A					
Vehicle Equipment Solutions	309 S Cloverdale Street #A14	2/5/2010	Screening	N/A					
Vertical Dimensions	309 S Cloverdale Street #D14	2/2/2010	Initial	Y					
Zerowaste	309 S Cloverdale Street #D29	2/5/2010	Screening	N/A					
South Park/Riverside Drive									
King Auto & Truck Parts Inc.	543 S Monroe Street	11/16/2009	Initial	--	2	1	0	1	0
King Auto & Truck Parts Inc.	543 S Monroe Street	12/21/2009	Followup	Y					
Tours Northwest	8221 7th Avenue S	10/1/2009	Initial	--	5	0	0	3	2
Tours Northwest	8221 7th Avenue S	12/7/2009	Followup	--					
Tours Northwest	8221 7th Avenue S	12/23/2009	Followup	Y					
Duwamish West Direct									
Pacific Pile & Marine	582 S Riverside Drive	12/17/2009	Initial	--	9	1	0	3	5
Pacific Pile & Marine	582 S Riverside Drive	2/2/2010	Followup	Y					
RM 3.8-4.2 West (Sea King Industrial Park)									
S 96th Street SD									
Atacs Products Inc.	850 S Cambridge Street	9/16/2010	Initial	N	3	0	0	3	0
Avidex	860 S Cambridge Street	9/16/2010	Initial	N	1	0	0	0	1
Filterfresh Seattle	9243 10th Avenue S	9/16/2010	Initial	N	4	0	0	3	1
Halfon Candy Co. Inc.	9229 10th Avenue S	9/16/2010	Initial	N	3	0	0	3	0

Sources: SPU 2010; Stewart 2010

HW - Hazardous Waste
IW - Industrial Waste
SP - Spill Prevention
SW - Stormwater

Y = Yes
N = No
N/A = Not Applicable

Appendix C

Ecology Inspections
July 2009 through September 2010

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
RM 0.0-0.1 East (Spokane St to Ash Grove Cement)				
Needs Permit	Ash Grove Cement	3801 East Marginal Way S	August 4, 2009	Follow-up to January 14, 2009 inspection. Individual NPDES permit needed. (Ecology WQ - Wright)
RM 0.1-0.9 East (EAA-1: Duwamish/Diagonal Way)				
NA	3R Technology	1920 Occidental Ave S	April 20, 2010	Urban Waters compliance inspection. Electronics recycler. Response to referral regarding improper storage/management of spent lamps. Owner says they no longer accept them. No major issues found. Need stormwater permit or Conditional No Exposure (CNE) exemption. (Gray/Smith)
Not Required	Alaska Copper & Brass	4700 Colorado St	July 28, 2010	Permit determination inspection with SPU. Metal working facility. Mostly "no discharge" or discharge to combined sewer. SW permit not required. (Ecology WQ - Wright)
WAR000139	Alaskan Copper Works	3223 6th Avenue S	July 28, 2010	Permit compliance inspection (WAR000139). Metal working facility. Review of site improvements. Doing a good job with updated SWPPP and source control improvement. Installed downspout treatment "gardens" for roof runoff. (Ecology WQ - Wright)
			August 31, 2010	Followup inspection. Facility in compliance.
NA	Atlas Supply Co	611 S Charlestown St	August 7, 2009	Ecology HWTR inspection.
NA	Azuma Sushi	1914 Occidental Ave S	July 22, 2009	Assist SPU with dye test. (Jeffers)
NA	Big Building LLC art community	3600 East Marginal Way S	July 22, 2009	Follow-up with tenants about spill kits and waste disposal. (Jeffers)
Needs Permit	Bloch Steel Industries	4580 Colorado Ave S	September 30, 2009	No stormwater permit. Scrap metal recycling. Drainage investigation to determine if they discharge to surface waters. Investigation inconclusive; further work needed. (Ecology WQ - Wright)
			September 15, 2010	Joint permit determination with EPA. After site inspection, it was determined that an off-site drainage investigation is needed to make a defensible permit determination. An off-site drainage investigation was subsequently done with SPU; found that facility has industrial stormwater that goes to surface water and therefore permit coverage is required. (Ecology WQ - Wright)
NA	Cascade Designs Inc.	4000 1st Ave S	July 7, 2009	Follow-up inspection (Jeffers)
NA	Cascade Designs Inc.	3800 1st Ave S	January 28, 2010	Ecology HWTR inspection
WAR010569	ConGlobal Industries	1 S Idaho St	October 23, 2009	Permit compliance inspection (WAR010569). Marine cargo handling. Warning letter issued for inadequate SWPPP, discharge of wastewater to storm drains, and lack of containment around stationary fuel truck. (Ecology WQ - Wright)
NA	Consolidated Press Printing Co.	600 S Spokane St	March 18, 2010	Urban Waters compliance inspection. Printing and binding shop. Minor waste/product storage, labeling problems. Discharging small amounts of spent "gum" used to coat printing plates to sanitary sewer without authorization from KCIW. Need CNE. (Gray)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
NA	Custom Boiler Room Inc.	3828 4th Ave S, Suite 10	April 6, 2010	Urban Waters compliance inspection. Small metal fabrication shop. Uses a patina product that produces selenium waste. Patina-soaked rags and scrub pads were disposed of in garbage. Outdoor patina application area is covered but 10-15 feet from storm drain. Drum of pickling agent stored outside, exposed to rain, no labeling and loose lid. Ned stormwater permit or CNE. (Gray)
			May 20, 2010	Urban Waters follow-up inspection. Many housekeeping issues resolved. Operator working with building owner to wall off covered storage area where they occasionally fabricate larger products. Still need stormwater permit or CNE - will refer to Ecology WQ. (Gray)
NA	Davis Door Service	2021 S Grand Street	September 15, 2010	No stormwater permit. Garage door manufacturing. Facility is eligible for a CNE exemption to ISGP. (Ecology WQ - Wright)
NA	Deeny Construction Co Inc	2545 Rainier Ave S	July 14, 2009	Ecology HWTR inspection
NA	Evergreen Recycling Inc	615 2nd Ave	December 16, 2009	Ecology HWTR inspection
NA	GSA Federal Center South	4735 East Marginal Way S	August 3, 2010	Urban Waters compliance inspection. Large federal facility storage/housing/staging area for multiple government agencies. Portion of 2012 building undergoing disassembly; hazardous waste from previous tenants discovered. Large quantities of waste, some potentially hazardous, awaiting disposal. Some wastes improperly stored. Numerous floor drains in several buildings - connection unknown, pipes exit walls to lot outside, sources unknown. Leaking dumpsters. No drainage system map of facility. (McCauley-EPA/Gray)
NA	I & B Wood	5003 Colorado Ave S	March 18, 2010	Urban Waters compliance inspection. Small woodworking/cabinet making shop; floor space leased from Messenger Signs. Improper storage and labeling of hazardous waste; occasionally waste thinner/lacquer set out to evaporate; rags and universal waste not managed appropriately. Paint booth does not appear to be registered with PSCAA; paint booth filters disposed in garbage. Need to apply for CNE exemption. (Ecology - Gray)
			June 23, 2010	Urban Waters follow-up inspection. Corrections had not been made and facility compliance past due. (Gray)
NA	International Leasing Co., Inc.	3801 7th Ave S	July 7, 2009	Follow-up inspection (Jeffers)
Needs Permit	Meeco Manufacturing	12 S Idaho St	July 7, 2009	Follow-up inspection. Stormwater permit needed. (Ecology - Jeffers)
Not Required	Messenger Corp./Messenger Signs	37 S Hudson St	March 24, 2010	Urban Waters compliance inspection. Sign making company (no neon). Need as-built from owner showing where sanitary and storm drain hookups are. Silk screen inks discharged, probably to sanitary sewer (need map to confirm). Thinner and paint wastes improperly stored/labeled. Boiler blowdown illegally disposed on in street (drains to separator sewer). Need CNE or stormwater permit. As of June, all issues addressed and facility is working with KCIW on silk screen discharge. Facility in compliance. (Gray)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
			April 27, 2010	Permit determination inspection. Determined that facility is eligible for a CNE. (Gray)
Not Required	Modelwerks	655 S Andover St	March 24, 2010	Urban Waters compliance inspection. Small shop specializing in making foam/metal aerospace and nautical models for wind tunnel testing. Stormwater violations - illegal pipe plumbing - directly through wall to parking lot. Storm drain nearby, may need stormwater permit. Minor waste storage/labeling issues. Possible existence of underground storage tanks (dyes) from previous tenant. As of June, owner had sealed illicit connection to storm drain and facility was in compliance. (Gray)
			April 28, 2010	Permit determination inspection. Determined that facility is eligible for CNE. Facility subsequently applied for and received CNE. (Ecology WQ - Wright)
NA	North Star Electric	1905 S Jackson St #B	April 15, 2010	Urban Waters compliance inspection. Electrical contractor. Inappropriate storage of large quantities of spent lamps; broken lamps on ground. PCB ballast stored in rusty drums outside on ground, no labeling. Small quantities of miscellaneous waste and product need proper storage/disposal. Housekeeping needs improvement. No storm drains. (Gray)
NA	Pacific Publishing Company Inc.	636 S Alaska St	April 6, 2010	Urban Waters compliance inspection. "Cold Set" printing company. Discharges small amounts of developer solution and soy-based ink to sanitary sewer (no authorization from KCIW). Waste ink drum lacks proper storage and labeling. Need stormwater permit or CNE. Walkthrough in June showed facility mostly in compliance; still need CNE and possibly KCIW permit. (Gray)
WAR008720	Pepsi Bottling Group Seattle Plant	2300 26th Ave S	August 12, 2010	Permit compliance inspection with SPU (WAR008720). Doing a good job; need to update site map. (Ecology WQ - Wright)
	Quest Diagnostics Inc	1737 Airport Way S	January 26, 2010	Ecology HWTR inspection
NA	Scientific Supply Equipment	619 Snoqualmie St	June 23, 2010	Urban Waters compliance inspection. Shipping and receiving facility for medical equipment manufacture and supply company. Minor oil stains on lot. No hazardous waste issues. Parking lot drains to storm drain system but no catch basin on facility. (Gray)
	Sears 8109/8224/9512	4798 1st Ave S	November 4, 2009	Ecology HWTR inspection
Not Required	Seattle Barrel	4716 Airport Way	February 10, 2010	No permit. Repair and reconditioning of drums and barrels. Joint inspection with EPA. Permit determination inspection verified that facility does not discharge to surface waters and therefore SW permit is not required. (Ecology WQ - Wright)
NA	Seattle Parks Genessee Park HQ	4420 S Genesee St	December 1, 2009	Ecology HWTR inspection
WAR009970	Seattle Lighthouse for the Blind	2501 S Plum St	August 11, 2009	Permit compliance inspection (WAR009970). Aircraft and military parts manufacturing. Warning letter issued for failure to monitor and inadequate SWPPP. (Ecology WQ - Wright)
NA	Sherwin Williams Paint Co.	2940 6th Ave S	January 26, 2010	Follow-up inspection. (Jeffers/Wright)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
WAR000930	Skyline Electric and Mfg Co Inc	3619 7th Ave S	July 22, 2009	Permit compliance inspection (WAR000930). Electrical panel manufacturer. Warning letter issued for inadequate SWPPP, wrong monitoring location, and inconsistent monitoring and reporting. (Ecology WQ - Wright)
			August 20, 2010	Follow-up inspection. (Ecology WQ - Wright)
NA	Three Brothers Cleaners	3210 Beacon Ave S	July 14, 2009	Ecology HWTR inspection
Not Required	Trade-Marx Sign & Display	818 S Dakota St	March 16, 2010	No permit. Sign manufacturer. CNE review determined they were eligible; facility subsequently applied for and obtained a CNE. (Ecology WQ - Wright)
NA	Valley Rubber & Gasket Co of WA	4201 Airport Way S	July 7, 2009	Follow-up inspection. (Jeffers)
WAR004605	Waste Management - Alaska St Reload & Recycling	.	September 30, 2009	Permit compliance inspection (WAR004605). Transfers contaminated soils from trucks to railcars. Warning letter issued for failure to have an adequate SWPPP, poor track-out management, and discharge of wastewater to storm drains. (Ecology WQ - Wright)
RM 0.9-1.0 East (Slip 1)				
NA	Manson Construction Co	5209 East Marginal Way S	August 14, 2009	Ecology HWTR inspection
			September 30, 2009	Joint Urban Waters inspection with King County. No stormwater permit. Marine construction (not a permit-covered category). Warning letter issued requiring cover and containment for petroleum containers and improved source control measures for shop/maintenance area. (Ecology WQ - Wright)
RM 1.0-1.2 East (King County Lease Parcels)				
NA	US Starcraft	5210 Utah Ave S	July 7, 2009	Follow-up inspection (Jeffers)
			November 12, 2009	Ecology HWTR inspection
			April 22, 2010	Follow-up Urban Waters compliance inspection. Metal fabrication shop. Improvements have been made but problems remain. Patina wash water (selenium) is no longer discharged to sanitary sewer, but appropriate treatment/disposal option has not been identified. Holding capacity of 300-gallon storage tank has been exceeded; now accumulating in 55-gallon drum outside - no cover or secondary containment. Currently about 15 to 20 drums of wastewater stored outside and continues to grow. Probably LQG and past 90-day storage limit. Owner instructed to move drums inside or under cover immediately and to dispose of drums ASAP. (Gray/Jeffers-SPU)
			June 30, 2010	Urban Waters follow-up inspection. Facility is applying for zero discharge permit. Facility still has not disposed of selenium wastewater, but have labeled drums and moved most inside building. Facility intends to process wastewater through a recirculating filter and reuse water at the patina process table. (Gray/Rice-KC)
			August 24, 2010	Urban Waters follow-up inspection. Facility still largely out of compliance. (Gray)
			September 20, 2010	Urban Waters follow-up inspection. Still largely out of compliance. Very little change since August inspection. (Best/Gray)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
	Olympic Medical Corp 1st Ave S	5900 1st Ave S	January 6, 2010	Urban Waters compliance inspection (Dier/Gray)
	Society of St. Vincent de Paul	5972 4th Ave S	July 22, 2009	Follow-up inspection; closed out. (Jeffers)
RM 1.2-1.7 East (Saint Gobain to Glacier Northwest)				
NA	Blaser Die Casting	5700 3rd Ave S	July 7, 2009	Follow-up inspection; closed out. (Jeffers)
WAR001134	Saint Gobain Containers	5801 East Marginal Way S	August 31, 2010	Glass container manufacturer. Response to complaint regarding building washwater going to storm drains near river and colored glass overtopping storage bins. (Ecology WQ - Wright)
RM 1.7-2.0 East (Slip 2 to Slip 3)				
WAG503191	Glacier NW (CalPortland) - batch plant	5975 East Marginal Way S	May 25, 2010	Sand & Gravel Permit compliance inspection (WAG503191). Concrete batch plant. Issued a Warning Letter for inadequate SWPPP, lack of containment for liquid chemical admixtures, petroleum, and liquid wastes. SWPPP was subsequently updated and containment improved. (Ecology WQ - Wright)
NA	Morel Industries	637 S Lucile St	March 16, 2010	Urban Waters compliance inspection. Brass, copper, aluminum foundry (formerly Ballard Brass & Aluminum). Discharges to combined sewer. KCIW expects to issue discharge authorization soon. Unused product and waste improperly stored/labeled on site; 15 55-gallon drums stored outside with no cover; 30,000 to 40,000 pounds of waste casting sand stored in "supersacks" on pallets outside with no cover and close to combined sewer drain. No stormwater permit needed as facility discharges to combined sewer. (Gray)
			May 20, 2010	Urban Waters follow-up inspection. Most miscellaneous waste cans disposed of. ECOSS is assisting owner with disposal of remaining items. Owner installed catch basin filters and got approval for discharge of wastewater from KCIW. Owner is disposing of foundry sand as special waste via Rabanco. (Gray)
	Super Supplements	750 S Michigan St	July 9, 2009	Hazardous waste management inspection; disposal of vitamins and supplements as solid waste. (Jeffers)
RM 2.0-2.3 East (Slip 3 to Seattle Boiler Works)				
NA	Alpine Auto Sales & Service	6722 Fox Ave S	July 8, 2009	Assist SPU with dye test. (Jeffers)
	Shultz Distributing Inc Sea	6851 East Marginal Way S	August 18, 2010	Permit compliance inspection (WAR002346). (Ecology WQ - Stegman)
RM 2.3-2.8 East (Seattle Boiler Works to Slip 4)				
WAR000949	CleanScapes	7303 8th Ave S	December 8, 2009	Permit compliance inspection (WAR000949). Garbage truck storage and maintenance base. Field Ticket/Corrections Required Form issued for failure to submit a current copy of facility SWPPP. (Ecology WQ - Wright)
			August 24, 2010	Urban Waters follow-up inspection. Waste storage and disposal business. Largely in compliance; minor housekeeping issues persist. Facility currently in compliance. (Gray)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
	Seattle Boilerworks Inc Myrtle St	500 S Myrtle St	June 22, 2010	Permit compliance inspection (SO3002208). (Ecology WQ - Stegman)
WA0031968	Seattle Iron & Metals Corp	600 S Garden St	April 28, 2010	Source control investigation. Individual NPDES Permit (WA0031968). Track-out and dust emissions are clearly affecting stormwater on S Myrtle Street. (Ecology WQ - Wright)
	Seattle Iron & Metals Corp Truck Parking	S Myrtle Street	February 5, 2010	Permit determination and drainage investigation. Individual permit for main operation at 600 S Garden (across the street) cannot be extended to the truck parking area. ISGP coverage is needed until the individual permit is rewritten. ISGP application was subsequently submitted but is on hold pending PCHB stay of new permits. (Ecology WQ - Wright)
	Taxi King	720 S Orchard	October 20, 2009	Ecology HWTR inspection
RM 2.8 East (EAA-3: Slip 4)				
NA	Ecolights Northwest Seattle	1915 S Corgiat Dr	January 21, 2010	Ecology HWTR inspection
NA	Emerald Services	7343 East Marginal Way S	July 9, 2009	Joint inspection with SPU, KCIW, and Ecology. (Jeffers)
			October 13, 2009	Ecology HWTR inspection
Needs Permit	First Student - 8th Avenue S	7400 8th Ave S	March 16, 2010	Permit determination inspection. School bus parking and maintenance base. Operation is required to have coverage under the ISGP. A permit application was submitted and then withdrawn sometime later. Permit status of this facility is unclear; follow-up is necessary. (Ecology WQ - Wright)
			April 20, 2010	Drainage investigation. Drains blocked; bus wash location may not discharge to sanitary sewer. Facility asked to stop washing until drainage confirmed. Bus washing subsequently moved to another facility. (Ecology WQ - Wright)
			May 5, 2010	Maintenance and drainage determination. Permit still required but not yet obtained. Still working with the city and property owner on stormwater drainage pipe problems and cleanup issues. (Ecology WQ - Wright)
NA	KRS Marine - Crowley Terminal	7400 8th Ave S	May 5, 2010	No permit (Crowley Terminal). Marine construction company - not an ISGP covered category. Emerald Services (Organic Fuel Processors) extended coverage KRS, one of two site tenants. (Ecology WQ - Wright)
WAR000226	North Boeing Field	7500 East Marginal Way S	February 23, 2010	Permit compliance inspection with EPA and TCP (WAR000226). Airplane manufacturing. Warning letter issued for inadequate SWPPP, poor source control measures, and lack of containment. SWPPP was subsequently updated and submitted to Ecology. (Ecology WQ - Wright)
			April 15, 2010	Follow-up inspection. (Ecology WQ - Wright)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
NA	Organic Fuel Processors - Crowley Terminal	7400 8th Avenue S	May 5, 2010	Permit determination inspection. (Crowley Terminal/Alaska Logistics may still have permit coverage for this location even though they moved out last year.) Hog fuel and sawdust storage and transfer. Emerald Services (parent company) applied for and obtained ISGP coverage for this operation. The permit also covers tenants Boom Boys Cranes, LLC and Heko Services, Inc. (Ecology WQ - Wright)
RM 2.8-3.7 East (EAA-4: Boeing Plant 2 to Jorgensen Forge)				
WAR001219	Airgas - Norpac	7700 14th Ave S	March 16, 2010	Permit compliance inspection (WAR001219). Acetylene gas manufacturing plant. Warning letter issued for inadequate SWPPP and drums/barrels stored on dirt. SWPPP was subsequently updated and a concrete slab poured in storage and containment area. (Ecology WQ - Wright)
WAR003231	Jorgensen Forge Corp.	8531 East Marginal Way S	November 5, 2009	Permit compliance inspection (WAR003231). Metal forge. Compliance items noted; lack of source control BMPs for outside storage of scrap metal and inadequate SWPPP. (Ecology WQ - Wright)
			July 7, 2010	Site visit to review significant progress towards implementing new SWPPP. Pressure wash station removed, bins and dumpsters are always covered, scrap metal piles in north lot were moved under cover, containment for all petroleum products completed. (Ecology WQ - Wright)
RM 4.9 East (EAA-7: Norfolk CSO/SD)				
NA	MacDonald Miller Facility Solutions (Metal Fab Shop)	3701 Norfolk St	June 17, 2010	Urban Waters compliance inspection. Metal fabrication shop - construction of HVAC systems. Main concern is storage of waste and product outside. Waste accumulation area does not provide adequate protection or secondary containment. Product not covered, no secondary containment, and stored near a catch basin which likely connects to storm drain. Recycling bins not covered, catch basins need cleaning, lot needs sweeping. May need stormwater permit. (Gray)
NA	Northwest Gourmet Foods	9620 Martin Luther King Jr Way S	September 15, 2010	Urban Waters compliance inspection. Food processing facility. Potentially significant stormwater issues - probably need ISGP. Food product tanks with no/inadequate secondary containment. Site is uphill of stormwater catch basin. (Gray/Jeffers-SPU)
NA	Pape Material Handling	9892 40th Ave	September 15, 2010	Urban Waters compliance inspection. Large heavy equipment rental company. Large oil stains in outside lot serviced by several catch basins. One outside washing station drains to storm system. (Gray/Jeffers-SPU)
NA	Speedee Lube	9637 Martin Luther King Jr Way S	September 15, 2010	Urban Waters compliance inspection. Small auto repair shop. Washing vehicles outside with drainage to stormwater catch basin. (Gray/Jeffers-SPU)
RM 0.0-1.0 West (Spokane St to Kellogg Island)				
NA	Active Environmental	4001 16th Ave SW	March 25, 2010	Urban Waters compliance inspection (Jeffers/Gray)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
WAR000475	Fog Tite Inc.	4819 West Marginal Way SW	September 9, 2009	Compliance status inspection (WAR000475). Manufacturing of concrete meter boxes (small concrete batch plant). Penalty issued in June for failure to monitor and discharge of wastewater to surface waters. (Ecology WQ - Wright)
NA	New Finishes	4235 West Marginal Way SW	January 25, 2010	Urban Waters compliance inspection (Jeffers/Gray)
	Seattle City Parks Westbridge	4209 W Marginal Way	October 21, 2009	Ecology HWTR inspection
NA	West Seattle Radiator Service	4101 West Marginal Way SW	March 25, 2010	Urban Waters compliance inspection (Jeffers/Gray)
	West Seattle Recycling Center	3881 16th Ave SW	April 13, 2010	Urban Waters compliance inspection (Gray)
RM 1.0-1.3 West (Kellogg Island to Lafarge)				
WA0002232	Lafarge Corp.	5400 West Marginal Way SW	December 8, 2009	Individual NPDES permit (WA0002232). Compliance check of contaminated dirt piles for the Administrative Order issued to Lafarge in December for shutdown period. (Ecology WQ - Wright)
RM 1.6-2.1 West (Terminal 115)				
NA	Commercial Fence	150 S Michigan St	May 19, 2010	Permit determination. Fencing company along the edge of the LDW near the 1st Avenue S bridge. Fencing contractor is not a covered category under the ISGP. Working with SPU on source control improvements. Permit could be required if determined to be a significant contributor of pollutants to the river; zinc may be an issue. (Ecology WQ - Wright)
	Pacific Rim Rental	6515 West Marginal Way SW	January 25, 2010	Urban Waters compliance inspection (Jeffers/Gray)
WAR001897	Pioneer Industries	7000 Highland Pkwy SW	November 3, 2009	Permit compliance inspection (WAR001897). Large machine shop. Warning Letter issued for failure to have an adequate SWPPP, inconsistent monitoring, and incorrect sample location. (Ecology WQ - Wright)
			January 27, 2010	Complaint response/technical assistance. (Walton/Gray)
RM 2.1 West (1st Ave S SD)				
NA	Collins Oil Co (Seaport Petroleum)	7800 Detroit Ave SW	July 7, 2009	Follow-up inspection (Jeffers)
NA	First Student - S Kenyon St	130 S Kenyon St	November 3, 2009	School bus parking and maintenance base. Permit had previously been terminated when facility moved; subsequently returned to this location. ISGP is required to operate here. Ecology requested that they resubmit application, but facility moved out at the end of December. (Ecology WQ - Wright)
NA	Flying Fish Express	7937 2nd Avenue S	March 16, 2010	No permit. CNE determination with SPU. (Ecology WQ - Wright)
NA	Global Diving	8165 1st Avenue S	January 25, 2010	Urban Waters compliance inspection (Jeffers/Gray)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
Not Required	Lion Trucking	8425 1st Ave S	April 15, 2010	Urban Waters compliance inspection. Shipping container trucking company. Washing onsite by different company with self-contained unit. Small quantities of miscellaneous wastes found; poor management of spent lamps. Large parking lot with oil staining from vehicle leaks. Need stormwater permit or CNE. (Gray)
			June 8, 2010	Permit determination inspection. Transportation category needs an ISGP only if conducting maintenance. Maintenance shop was closed down and being outsourced. Permit not required; working with SPU on source control improvements for leaking equipment. (Ecology WQ - Wright)
NA	MacDonald-Miller Facility Solutions	7717 Detroit Ave SW	May 11, 2010	Urban Waters compliance inspection. Most hazardous waste managed appropriately. Some storage/labeling issues. Storm and sanitary connections are confusing and don't appear to correspond to available maps. (Wisdom-SPU/Gray)
			September 28, 2010	Technical assistance with ISGP application. Application submitted but is on hold pending PCHB stay.
NA	Magnetic & Penetrant Services	8135 1st Ave S	December 8, 2009	Ecology HWTR inspection
Needs Permit	Meeco Manufacturing	432 S Cloverdale	July 7, 2009	Ecology HWTR inspection
	Nuprecon	7245 West Marginal Way SW	July 8, 2009	Joint inspection with SPU (Jeffers)
NA	Old Dominion Freight Line (1st Ave)	8425 1st Ave S	April 20, 2010	Urban Waters compliance inspection. Leasing space from Lion Trucking; maintenance building and small parking lot. Oil leak spots in parking lot and storm drain nearby. Approximately 40 old rusty drums in bushes uphill from property; appear to have been dumped long ago and rusted through. Minor housekeeping issues. (Gray/Smith)
Needs Permit	Seattle Housing Authority	7500 Detroit Ave SW	July 7, 2009	Follow-up inspection. Permit needed. (Jeffers)
			September 22, 2009	Ecology HWTR inspection
WAR000737	South Recycle and Disposal Station	8100 2nd Ave S	December 17, 2009	Permit compliance inspection (WAR000737). Garbage transfer station and recycling center. Warning letter issued for failure to have an adequate SWPPP, poor source control measures. SWPPP was subsequently updated and submitted to Ecology. (Ecology WQ - Wright)
WAR000617	Standard Steel Fabricating Co Inc	8155 1st Ave S	June 8, 2010	Permit compliance inspection (WAR000617). Metal working facility. Facility doing a good job with SWPPP. All catch basins on site have an advanced catch basin insert in them. Minor hazardous waste issues, some stormwater permitting requirements. (Ecology WQ - Wright)
WAR000581	Waste Management - Marginal Way	7201 West Marginal Way SW	September 15, 2010	Permit compliance inspection (WAR000581). Garbage transfer station. Compliance items noted: update of site map and improved source control for waste oil. (Ecology WQ - Wright)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
RM 2.1-2.2 West (EAA-2: Trotsky Inlet)				
WAR005598	Boyer Logistics/Towing	7318 4th Ave S	January 26, 2010	Permit compliance inspection (WAR005598). Marine cargo. Warning letter issued for inadequate SWPPP and lack of containment for drums and totes. (Ecology WQ - Wright)
NA	Industrial Container Services	7152 1st Ave S	September 22, 2009	Ecology HWTR inspection
	Pioneer Industries	7440 West Marginal Way S	November 3, 2009	Permit determination inspection. Machine shop. No stormwater exposure and eligible for a CNE. Apparently CNE was never obtained. (Ecology WQ - Wright)
WAR002137	United Iron Works	7421 5th Avenue S	August 12, 2010	Structural steel working. Facility requested to terminate permit due to no discharge and/or no exposure. Site review revealed that both exist. (Ecology WQ - Wright)
			September 28, 2010	Notice of Termination site review. Request denied. (Ecology WQ - Wright)
RM 2.2-3.4 West (Riverside Drive)				
NA	American Civil Constructors	700 S Riverside Drive	January 11, 2010	Urban Waters compliance inspection (Jeffers/Gray)
NA	Coast Crane Company	8250 5th Ave S	August 14, 2009	Ecology HWTR inspection
WAR003598	Fibres International	9208 4th Ave S	July 20, 2010	Permit compliance and joint Urban Waters inspection (WAR003598). Glass bottle and recycling plant, some metal and plastic mixed in with glass. Storm drains with heavy sediment. Facility was shutting down and going out of business but still has active ISGP coverage. (Gray/Ecology WQ - Wright)
WAR000763	Gear Works Seattle Inc	500 S Portland Street	June 8, 2010	Permit compliance inspection (WAR000763). Large machine shop. SWPPP needed updating but facility doing a good job. Installed a stormwater treatment system. (Ecology WQ - Wright/Gray)
WAR009725	Independent Metals	816 S Kenyon St	November 4, 2009	Compliance inspection (WAR009725) with EPA. Scrap metal recycler. Warning letter issued for inadequate SWPPP, and required the addition of total mercury and total PCBs to stormwater discharge monitoring. (Ecology WQ - Wright)
NA	Independent Metals	747 S Monroe St	January 21, 2010	Ecology HWTR inspection
WAR011741	Marine Lumber Services	525 S Chicago St	October 23, 2009	Joint Urban Waters inspection (WAR011741) with SPU in follow-up to March 2009 inspection requiring coverage. High arsenic, copper, zinc found in soil at exit gate of treated lumber storage yard. Source control and cleanup plan not submitted as requested by inspection report. Formal Administrative Order issued for a plan to clean up and control ACZA treated lumber. Plan was submitted and most of plan implemented. Follow-up site visit is needed to determine status of plan implementation. (Ecology WQ - Wright)
			February 9, 2010	Compliance meeting and site visit regarding the Immediate Action Order (IAO #7247) issued in January requiring the facility to develop a source control (and cleanup) plan for the treated lumber storage yard. (Ecology WQ - Wright)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
NA	National Products Inc. - Die Cast and Powder Coat	1017 S Elmgrove St	April 8, 2010	Urban Waters compliance inspection. Aluminum die-casting and powder-coating facility. Most liquid waste goes to sanitary sewer (permitted with KCIW). Stormwater drains to combined sewer - no permit or CNE needed. Die casting building needs improved housekeeping. (Gray)
			May 20, 2010	Urban Waters follow-up inspection. Shop floor cleanliness much improved. Combined sewer - no permit or CNE needed. As of June, floor drain has been sealed and facility is in compliance. (Gray)
NA	National Products Inc. - Packaging	1205 S Orr St	April 8, 2010	Urban Waters compliance inspection. Make mounting units for electronic devices in cars/boats/motorcycles. This facility is the packaging plant; some plastic molding and minor primer paint application done here. Minor housekeeping issues. Floor drain may connect to storm drain; working with manager to seal or prove connection to sanitary. Need stormwater permit or CNE. (Gray)
			May 20, 2010	Urban Waters follow-up inspection. Manager has elected to seal their one floor drain. Initial seal failed when a forklift drove over it. Still need stormwater permit or CNE - will refer to Ecology WQ. (Gray)
WAR001918	Northwest Grating Products	9230 4th Ave S	July 20, 2010	Permit compliance inspection (WAR001918). Facility makes steps, stairs and drain grating. Warning letter issued for inadequate SWPPP, failure to conduct sampling, and reporting/monitoring location not correct. Minor hazardous waste issues. (Gray/Ecology WQ - Wright)
NA	NRC Environmental Services	9520 10th Ave S, Suite 150	August 26, 2010	Urban Waters compliance inspection. Environmental cleanup spill response company. Minor housekeeping issues. Product storage shed does not have adequate secondary containment and is immediately adjacent to catch basin. (Gray/Evanson-KC)
NA	Repair Technology Inc	400 S 96th St	February 11, 2010	Ecology HWTR inspection
RM 3.4-3.8 West (Terminal 117)				
NA	Basin Oil Co Inc	8661 Dallas Ave S	January 21, 2010	Ecology HWTR inspection
RM 3.8-4.2 West (Sea King Industrial Park)				
NA	A&H Bookkeeping	10806 1st Ave S	July 13, 2010	Urban Waters compliance inspection. Bookkeeping service, but property used for storage of wastes and product associated with apartment rental maintenance and other activities. Large amounts of motor parts and scrap metal stored outside. Several unidentified waste drums, used oil and product with inadequate labeling and secondary containment, no cover. Strom drain near property downhill of waste and product storage. (Gray/Evanson-KC)
Needs Permit	Absolute German	9510 14th Avenue S	July 27, 2010	Permit determination inspection with King County. Facility is an auto wrecker that is disconnecting all discharges to the sanitary sewer and going to be discharging to surface waters. An ISGP is required. Facility subsequently applied for permit but is on hold pending PCHB stay on new permits. (Ecology WQ - Wright)
WAR000154	Ace Galvanizing Inc 96th	429 S 96th St	November 12, 2009	Ecology HWTR inspection

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
NA	Allied Body Works	625 S 96th St	April 20, 2010	Follow-up Urban Waters compliance inspection. Manufacture tool box storage for trucks and utility vans. Most previous issues taken care of; small quantities of miscellaneous waste need disposal and/or proper storage. Some washing outside near storm drain. No spill kits/spill plan. Have not yet applied for stormwater permit or CNE. Paint booth is leased to Phil's Finishing Touch. No major issues. (Gray/Smith)
			July 20, 2010	Urban Waters follow-up inspection. No permit. Field Ticket/Corrections Required Form issued to submit a CNE application that was previously requested on three separate occasions. (Wright/Gray)
NA	Anthony's Auto Care	11027 1st Ave S	August 12, 2010	Urban Waters compliance inspection. Small auto repair shop. Minor hazardous waste issues, oil stains in parking lot. (Evanson-KC/Gray)
WAR004556	Architectural Stonewerks	429 S 96th St	April 8, 2010	Urban Waters compliance inspection. Small shop specializing in custom marble, granite, and travertine sinks and counter tops. Two drums of unknown waste material found - need analysis/proper disposal. Buckets and can of miscellaneous waste paints and epoxy resins. Stone table washing conducted outside near storm drain. Stone grit ventilated to outside - may need authorization through PSCAA. (Gray)
			July 20, 2010	Permit compliance inspection (WAR004556). Custom countertop manufacturer; minor operation. Inspection report noted need to monitor and report each quarter at proper discharge location. Owner had not contacted PSCAA re: ventilation system, and a drum of unknown waste was still present. (Gray/Ecology WQ - Wright)
NA	Atomic Fabrications	1605 S 93rd St #E-R	March 16, 2010	Urban Waters compliance inspection. Small steel and aluminum metal fabrication shop. Minor compliance problems: no spill kit/plan, used rags in trash may contain dangerous waste. Need to apply for CNE exemption. (Gray)
			May 20, 2010	Urban Waters follow-up inspection. Still need stormwater permit or CNE application. No other compliance issues. CNE application subsequently applied for and granted. (Gray)
NA	Azteca Mexican Restaurants	10818 Myers Way S	August 12, 2010	Urban Waters compliance inspection. Facility makes salsa for Azteca restaurants in the Seattle area. Minor housekeeping issues. Blowdown from boilers piped to storm drain; food product stored in drums near storm drain with no secondary containment. Occasional outdoor washing of fleet truck, which drains to stormwater. (Gray/Evanson-KC)
NA	Brosson Co. Paint and Varnish	10808 Myers Way S	June 22, 2010	Urban Waters compliance inspection. Retail paint and varnish store. Minor hazardous waste issues. Two small storm drains in lot with small amounts of product stored nearby. (Gray/Evanson-KC)
NA	Craft Built	10714 1st Ave S	July 13, 2010	Urban Waters compliance inspection. Wood shop - louvre manufacture. Minor hazardous waste issues. Stormwater catch basin onsite, nearly full and needed cleaning. (Gray/Evanson-KC)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
NA	Craftsman Doors	720 S 96th St	July 28, 2010	Urban Waters compliance inspection. Wood shop - door manufacture. No painting. Wood dust accumulating in storm drain. May require a CNE. (Gray/Haberman)
WAG030091	Delta Marine Industries Inc	1608 S 96th St	October 7, 2009	Boatyard Permit compliance inspection (WAG030091). (Ecology WQ - Stegman)
SO3003120C	Gary Merlino Construction Co	9125 10th Ave S	July 14, 2009	Follow-up meeting about stormwater permit compliance (SO3003120). (Jeffers/Wright)
NA	Gaston Brothers Excavating	10740 Myers Way S	July 6, 2010	Urban Waters compliance inspection. Trucking/hauling operation. Complaints from neighbors regarding noise/smell. Storage of dirt/debris piles outside. Truck washing done on site; system past due for maintenance and does not provide treatment for soap/chemicals. KC will take lead. (Gray)
NA	GTS Classic Auto	110 S 112th St	July 13, 2010	Urban Waters compliance inspection. Auto repair/detail shop. Minor hazardous waste issues. Wash vehicles commercially outside on gravel lot, which slopes downhill to storm drain. Washwater containment berm degraded and no longer trapping water. (Evanson-KC/Gray)
NA	Heath Northwest	727 S 96th St S	July 28, 2010	Urban Waters compliance inspection. Sign manufacture and installation/maintenance. Staging area only. Minor hazardous waste/housekeeping issues. Outside washing of signs, water flowing to drain, like a stormwater catch basin. (Gray)
WAG503282	ICON Materials Seattle Asphalt	1115 S 96th St	May 25, 2010	Permit compliance inspection (WAG503282). Field Ticket/Corrections Required Form issued for inadequate SWPPP. (Ecology WQ - Wright)
NA	Jim's Southend Motorcycle Repair	10840 Myers Way S	June 16, 2010	Urban Waters compliance inspection. Small motorcycle repair shop. Minor hazardous waste management issues. Unidentified waste stored outside with no cover or secondary containment. (Evanson-KC/Gray)
NA	M&M Grinding and J C Ross	10846 Myers Way S	June 16, 2010	Urban Waters compliance inspection. Small metal fabrication shop. Minor housekeeping and waste management issues. May need CNE. (Gray/Evanson-KC)
NA	McDonald's Restaurant	9610 Des Moines Memorial Dr.	June 22, 2010	Urban Waters compliance inspection. Referral from SPU due to power washing of parking lot and play area, washwater runs to storm drain. Practice should be stopped immediately. (Gray)
NA	Millennium Motorwerkx	851 Myers Way S	June 16, 2010	Urban Waters compliance inspection. Small auto repair shop. Minor hazardous waste issues. Owner mixes used oil and solvent in used oil storage tanks. Corrective action needed. (Evanson-KC/Gray)
NA	Nico Auto Service	10819 Myers Way	June 22, 2010	Urban Waters compliance inspection. Small auto repair shop. Minor hazardous waste issues. Building does not provide adequate secondary containment and is uphill of a nearby storm drain. Numerous vehicle fluid stains in lot. One catch basin completely blocked. Catch basins need regular maintenance and oil leaks need to be addressed. (Gray)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
WAR000264	Psf Mechanical Inc	9322 14th Ave S	June 9, 2010	Permit compliance inspection (WAR000264). Warning letter issued for failure to fully implement SWPPP, cover all dumpsters and scrap metal bins, and revision to monitoring plan. Zinc numbers very high. Follow-up needed. (Ecology WQ - Wright)
	Puget Sound Coatings	9220 8th Ave S	August 12, 2010	Permit compliance inspection (WAR002142). Metal workings and coatings. Hexavalent chrome found in discharge from facility stormwater treatment system. Found that shallow groundwater was entering underground vault which contained 3,000 ug/L of hexavalent chrome. Facility lined underground vault to exclude groundwater intrusion. Report was submitted to Ecology in November 2010. (Ecology WQ - Wright)
	RMC Inc.	10766 Myers Way S	July 7, 2009	Follow-up inspection; closed out. (Jeffers)
NA	Scott's Autobody	117 S 108th St	July 6, 2010	Urban Waters compliance inspection. Small auto body shop. Small quantities of hazardous waste and product stored inappropriately, stored outside with partial cover. Unregistered paint booth. Filters disposed in trash without testing. Paint dust visible outside shop door - potential stormwater impact. (Gray/Evanson-KC)
	Selland Auto Transport	615 S 96th St	January 26, 2010	Permit compliance inspection (WAR000650). Auto carrier and maintenance base. Warning letter issued for failure to have a SWPPP, discharge of wastewater to storm drains, lack of containment around waste oil drums, and failure to conduct sampling and monitoring. Monetary penalty issued in May 2010. (Ecology WQ - Wright)
NA	Ser Pro Inc	11064 1st Ave S	June 22, 2010	Urban Waters compliance inspection. Metal fabrication shop. Minor hazardous waste issues. May need CNE - referred to Ecology WQ. (Evanson-KC/Gray)
	Show Quality Finishing	S 96th St	January 26, 2010	Permit determination. CNE eligible, but no evidence that application was submitted. Follow-up needed. (Ecology WQ - Wright)
NA	SimplexGrinnel	9520 10th Ave S	August 19, 2010	Urban Waters compliance inspection. Fire extinguisher servicing/testing company. Minor housekeeping issues. (Evanson-KC/Gray)
NA	Southwest Saw and Mower Service	10843 1st Ave S	June 16, 2010	Urban Waters compliance inspection. Lawn mower and weed eater repair and sales. Minor waste issues. (Gray/Evanson-KC)
NA	T&H Autobody	10832 Myers Way S	July 6, 2010	Urban Waters compliance inspection. No issues. (Evanson-KC/Gray)
WAR001901	TEREX Utilities	1303 S 96th St	June 9, 2010	Permit compliance inspection (WAR010446). Facility does not manufacture equipment anymore, only engaged in maintenance. Facility eligible to terminate permit. (Ecology WQ - Wright)
NA	Teris LLC	9520 10th Ave S	October 28, 2009	Ecology HWTR inspection
NA	Wakefield Glass	11014 1st Ave S	June 22, 2010	Urban Waters compliance inspection. Small window installation company. Minor hazardous waste issues. Storm drains on site, minor lot housekeeping issues. (Gray/Evanson-KC)

Appendix C: Ecology Source Control Inspections (July 2009 through September 2010)

NPDES Permit ID	Facility Name	Address	Date Inspected	Ecology Findings
NA	Warner Transmission	10851 Myers Way	June 16, 2010	Urban Waters compliance inspection. Small transmission repair shop. One significant hazardous waste issue - owner is accepting used oil and solvent from surrounding businesses and allowing them to store in his outside storage tanks; solvent is mixed with used oil. Line drain outside shop does not appear to be connected to anything. Oil staining on ground. (Gray/Evanson-KC)
NA	Warp Corporation	631 S 96th St	August 19, 2010	Urban Waters compliance inspection. Specialty fabric sign and show booth manufacturer. Minor housekeeping issues. Storage of solvent-based inks in small buckets. May need stormwater CNE. (Gray/Evanson-KC)
WAR011548	Western Ports Transportation	9600 8th Ave S	June 9, 2010	Permit compliance inspection (WAR011548) with King County. Field Ticket/Corrections Required Form issued to facility to develop and implement a track-out management plan. (Ecology WQ - Wright)
			July 27, 2010	Site review of track-out management plan with King County. (Ecology WQ - Wright)
RM 4.2-4.8 West (Restoration Areas)				
NA	Bidadoo Auctions	9605 West Marginal Place S	August 26, 2010	Urban Waters compliance inspection. Construction equipment repair and auction company. Minor housekeeping issues. Large concrete wash bay; washwater is filtered and discharged to sanitary sewer. Large oil stains on gravel lot. (Evanson-KC/Gray)
Source Control Area Unknown				
NA	Davis Wire		December 3, 2009	Harding
NA	Eagle Tire & Automotive		February 17, 2010	Ecology (Gray)
NA	Frontier Geosciences		December 10, 2009	Walton
	Mercedes Dealership		January 11, 2010	SPU (Jeffers)
NA	Pro Weld	8th Ave S	July 28, 2010	Urban Waters compliance inspection. Small welding shop. Minor hazardous waste issues. May need CNE. (Gray/Haberman)
NA	Providence Trucking		May 20, 2010	Urban Waters compliance inspection (Gray/Tijiernia-KC)
NA	Stonehedge Tree Service	8th Ave S	July 28, 2010	Urban Waters compliance inspection. Small maintenance shop and staging area for arborist. Minor housekeeping issues. Not a covered category for ISGP. (Gray)
NA	Tiny's Tire Factory		March 16, 2010	Ecology WQ (Wright)

Appendix D

Source Tracing Sample Results
July 2009 through September 2010

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID	Date	Type	Sewer	Location	Total solids	TOC	As	Cu	Pb	Hg	Zn	TPH-D	TPH-O
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB13	08/23/10	CB	CS	Seattle Injector	56.3	5.47	12	131	90	0.1	521	99	580
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB19	07/09/10	CB	CS	Dubb City	34.5	22	10 U	120	163	0.31	629	910	6,000
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB27A	08/12/10	CB	CS	Union 76 CB2	28.3	17.3	3	102	77	0.1	613	2,100	13,000
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB27B	08/12/10	CB	CS	IHOP	16.9	26.2	5	134	70	0.1 U	594	4,300	30,000
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB30	09/16/10	CB	CS	Diabetes Center	10.9	27.8	16	854	320	1.1	900	390	4,200
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB10	07/09/10	CB	SD	Shell Gas Station	18.4	20.8	20 U	279	168	0.1	1,130	1,100	7,500
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB106	05/27/10	CB	SD	Colorgraphics	34.6	14.2 J	10 U	129	28	0.06	981	710	8,500
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB117	07/28/10	CB	SD	Alaskan Copper & Brass	73.0	3.8	7	1,370	41	0.04	291	620	5,700
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB121	08/12/10	CB	SD	3D Systems Corp. (formerly Moeller Design)	28.8	14	10 U	167	102	0.66	1,720	320	12,000
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB158	05/14/10	CB	SD	Intermountain Supply Inc.	38.3	13.1	20	160	249	0.26	3,770	680	4,400
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB161	07/27/10	CB	SD	Washington State DOT	87.1	3.7	10 U	175	31	0.02 U	126	73	780
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB83	08/30/10	CB	SD	Budget Batteries	32.5	11.1	8	299	805	0.11	687	840	5,900
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST1	04/30/10	Inline	SD	MH west of E Marginal Wy S	40.1	8.15	20	209	292	2.72	661	1,800	4,100
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST2	04/30/10	Inline	SD	Airport Wy S and 6th Ave S (I-5 SB RP)	91	0.43	10 U	40	16	0.02 U	105	55 U	220
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST7	04/30/10	Inline	SD	S Dakota St and 6th Ave S	82.4	1.37	6	40	59	0.02 U	161	110	470
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	RCB37	02/23/10	RCB	SD	MH at SE corner Airport Wy S and S Stevens St	68.5	5.6	8	68	55	0.03 U	209	320	2,100
RM 2.0 to 2.3 east	S Brighton St CSO/SD	CB163	08/18/10	CB	SD	Shultz Distributing	62.5	6.7	7 U	92	114	0.19	810	1,200	6,200
RM 2.0 to 2.3 east	S Brighton St CSO/SD	MH110	12/03/09	Inline	SD	Between RR tracks and E Marginal WyS	65	3.62	18 J	227 J	84 J	0.13 J	455 J	400	930
RM 2.0 to 2.3 east	S Brighton St CSO/SD	MH111	12/03/09	Inline	SD	Same location as MH101	74.7	1.81	960 J	998 J	878 J	0.4 J	2,630 J	620	1,700
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB177	12/03/09	RCB	SD	East side of Fox Ave S at Cascade Columbia Building	56.6	5.95	17 J	242 J	290	0.45	1,100	1,000	4,200
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB178	12/03/09	RCB	SD	West side of Fox Ave s by Seattle Boiler Works	52.3	5.82	18 J	327 J	275	0.39	1,340	1,200	6,600
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB179	12/03/09	RCB	SD	West side of Fox Ave S by Dawn Food Products	43.1	13.8	20 J	238 J	284	0.36	1,400	4,700	13,000
RM 2.3 to 2.8 east	S Garden St SD	CB157F	05/11/10	CB	SD	Seattle Iron and Metals	67.3	4.59	208	1,890	1,260	0.8	4,940	840	6,200
RM 2.3 to 2.8 east	S Garden St SD	CB157S	05/11/10	CB	SD	Seattle Iron and Metals	46.2	6.7	17	2,240	1,380	1.55	5,880	970	8,200
RM 2.3 to 2.8 east	S Garden St SD	RD1	05/11/10	CB	SD	Seattle Iron and Metals	49.2	8.84	18	1,090	1,410	0.92	5,370	210	2,400
RM 2.3 to 2.8 east	S Myrtle St SD	RD2	05/11/10	CB	SD	Seattle Iron and Metals	29.6	8.37	21	975	1,700	2.56	8,310	190	1,700
RM 2.3 to 2.8 east	S Myrtle St SD	RCB176	12/03/09	RCB	SD	CB at NE corner of intersection	83.1	1.55	7 J	291 J	230	0.42	985	1,300	6,300
RM 2.3 to 2.8 east	S Myrtle St SD	RCB180	12/03/09	RCB	SD	CB at north side of cul-de-sac next to Seattle Boiler Works	66	3.58	7 J	1,110 J	192	0.33	1,500	500	2,900
RM 2.3 to 2.8 east	S Myrtle St SD	RCB189F	05/11/10	RCB	SD	CB immediately east of Seattle Iron and Metals driveway (filter sock)	65.9	4.85	22	3,280	904	0.66	3,890	1,800	8,600
RM 2.8 east	I-5 SD at Slip 4	SL4-T6	10/07/09	Trap	SD	MH at Airport Way S and S Hardy St	67.0	3.5	7 UJ	112 J	130 J	0.04 J	496 J	320	1,700
Rm 2.8 east	I-5 SD at Slip 4	SL4-T6	04/29/10	Trap	SD	MH at Airport Way S and S Hardy St	65.8	5.9	7 U	90	91	0.07	390	170	1,000
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T1	04/08/10	Trap	SD	KC airport SD, north + north-central lateral, u/s of pump station	59.5	5.65	15	140	309	0.36	554	100	720

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID	Date	Type	Sewer	Location	Total solids	TOC	As	Cu	Pb	Hg	Zn	TPH-D	TPH-O
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2	04/08/10	Trap	SD	KC Airport SD, south lateral, d/s North Boeing Field	25	NA	NA	NA	NA	NA	NA	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2A	10/07/09	Trap	SD	KC airport SD, south lateral, d/s runway	39.5	0	10 UJ	216 J	311 J	0.25 J	1200 J	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2A	04/29/10	Trap	SD	KC airport SD, south lateral, d/s runway	NA	NA	20 U	190	246	0.24	1,070	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3	04/08/10	Trap	SD	KC Airport SD, south-central lateral, d/s North Boeing Field	17.5	NA	NA	NA	NA	NA	NA	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3A	10/07/09	Trap	SD	KC Airport SD, south-central lateral, d/s runway	NA	NA	30 UJ	56 J	60 J	0.06 UJ	163 J	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3A	04/29/10	Trap	SD	KC Airport SD, south-central lateral, d/s runway	NA	NA	10 U	48	31	0.05 U	91	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T4	04/08/10	Trap	SD	KC Airport SD, north-central lateral, d/s North Boeing Field	28.1	12.1	30	334	382	0.37	1,880	380	1,900
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T4A	04/08/10	Trap	SD	KC Airport SD, north-central lateral, d/s runway	62.1	9.17	14	248 J	376 J	0.23	551	210	1,400
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T5	04/08/10	Trap	SD	KC Airport SD, north lateral, d/s North Boeing Field	52.9	9.84	15	287	277	0.34	705	340	1,800
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T5A	04/08/10	Trap	SD	KC Airport SD, north lateral, d/s Steamplant	29.5	12.8	20	248	342	0.31	1,380	400	1,600
RM 2.8 to 3.7 east	KCIA-Jorgensen SD	KCIAJ-ST1	12/10/09	Trap	SD	KC Airport SD at Boeing/Jorgensen, MH east of E Marginal Wy S	NA	NA	NA	NA	NA	NA	NA	NA	NA
RM 3.7 to 3.9 east	KCIA SD#2	KCIA2-ST1	10/21/09	Inline	SD	KC Airport SD#2 at former Slip 5, MH east of E Marginal Wy S	79.5	0.65	6 UJ	13 J	10 J	0.03 UJ	0	62 U	120
RM 3.7 to 3.9 east	KCIA SD#2	KCIA2-ST1	10/21/09	Trap	SD	KC Airport SD#2 at former Slip 5, MH east of E Marginal Wy S	56.6	1.23	20 UJ	16.1 J	18 J	0.03 UJ	79 J	87 U	170
RM 3.7 to 3.9 east	KCIA SD#2/PS45 EOF	CB40	12/03/09	CB	SD	Ameriflight	72.1	4.46	7 UJ	41 J	63 J	0.03 UJ	228 J	800	2,600
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	CB84	09/02/10	CB	SD	Pacific Coatings	64.4	23.7	19	82	23	0.11	132	2,000	15,000
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST1	10/07/09	Inline	SD	60-in line west of MLK Way	44.2	5.43	10 UJ	110 J	76 J	0.1 J	603 J	1,100 J	4,700
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST2	10/07/09	Inline	SD	Overflow to WSDOT system	82.4	1.68	7 J	51 J	55 J	0.06 J	344 J	770 J	2,600
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST3	10/07/09	Inline	SD	Ditch at MLK Way and Boeing Access Rd	60.8	6.02	8 UJ	89 J	62 J	0.18 J	645 J	440 J	2,400
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST4	10/07/09	Inline	SD	S Norfolk St at SE corner KC Airport	78.9	2.1	6 UJ	18 J	32 J	0.03 J	74 J	60 UJ	120
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST1	10/07/09	Trap	SD	60-in line west of MLK Way	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST2	10/07/09	Trap	SD	Overflow to WSDOT system	37.4	7.74	10 J	156 J	165 J	0.17 J	1,230 J	2,300	7,900
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST3	10/07/09	Trap	SD	Ditch at MLK Way and Boeing Access Rd	44.6	10.2	10 UJ	112 J	73 J	0.09 J	870 J	330	1,900
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST4	10/07/09	Trap	SD	S Norfolk St at SE corner KC Airport	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST5	10/07/09	Trap	SD	E Marginal Wy S at S Norfolk St	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID	Date	Type	Sewer	Location	Total solids	TOC	As	Cu	Pb	Hg	Zn	TPH-D	TPH-O
Lake Washington	Lake Washington	CB159	07/09/10	CB	SD	Safeway - Rainier	65.1	10.0	7 U	32	13	0.03 U	194	110	860
Lake Washington	Lake Washington	CB160	07/09/10	CB	SD	Safeway - Rainier	32.7	18.5	10 U	3,620	107	0.09	512	720	5,400
RM 0.0 to 1.0 west	SW Dakota St SD/ditch	CB41C	04/16/10	CB	SD	West Seattle Radiator	29.6	8.4	10 U	350	203	0.22	3,740	370	2,000
RM 0.0 to 1.0 west	SW Dakota St SD/ditch	RCB185	04/16/10	RCB	SD	CB in curbline just north of main entrance to site	81.3	2.77	10 U	169	39	0.04	202	89	460
RM 1.3 to 1.6 west	SW Kenny St SD/T115 CSO	KN-ST1	05/06/10	Inline	SD	Eastern end of S Kenny St, on T115	50.8	4.03	70	193	470	0.42	879	660	2,300
RM 2.1 to 2.2 west	2nd Ave S SD	CB116	06/07/10	CB	SD	Jon's Recycling	34.7	10.7	50	806	1,540	48	2,950	2,600	14,000
RM 2.1 to 2.2 west	2nd Ave S SD	RCB109	08/09/10	RCB	SD	Resample of RCB109	56.1	5.71	8 U	124	91	0.11	452	680	3,900
RM 2.1 to 2.2 west	2nd Ave S SD	RCB110	06/07/10	RCB	SD	Resample of RCB110	59.8	6.49	14	154	135	0.15	630	330	3,100
RM 2.1 to 2.2 west	2nd Ave S SD	RCB190	08/09/10	RCB	SD	CB at NE corner of 2nd Ave S & S Webster St	51.1	6.86	9 U	151	76	0.07	591	920	6,600
RM 2.1 west	1st Ave S SD (west)	1st-ST5	08/02/10	Inline	SD	SR 509 (northbound), S Occidental St offramp	24.6	12.8	20	171	254	0.42	924	1,000	3,600
RM 2.1 west	1st Ave S SD (west)	1st-ST5	08/02/10	Inline	SD	SR 509 (northbound), S Occidental St offramp	35	9.88	20	153	262	0.49	852	980	3,300
RM 2.2 to 3.4 west	7th Ave S SD	CB154	11/18/09	CB	SD	Olympic Steel Door	64.1	1.6	8 UJ	274 J	17 J	0.03 UJ	176 J	920	970
RM 2.2 to 3.4 west	7th Ave S SD	7th-ST1	04/29/10	Inline	SD	S Portland St and 7th Ave S	43.4	7.46	20	208	157	0.19	678	330	1,300
RM 2.2 to 3.4 west	7th Ave S SD	7th-ST3	04/29/10	Inline	SD	S Southern St just W of 7th Ave S	43.9	6.66	20	154	160	0.23	775	260	1,300
RM 3.4 to 3.8 west	CS	CB2-DAL	03/10/10	RCB	CS	CB on 17th Ave S near Basin Oil driveway	42.3	10.9	10 U	147	237 J	0.08	571	530	2,300
RM 3.4 to 3.8 west	CS	CB4-DAL	03/10/10	RCB	CS	CB on Dallas Ave S near T117 south driveway	61.3	10.2	8	143	67 J	0.04	588	75 U	550
RM 3.4 to 3.8 west	CS	RCB181	03/10/10	RCB	CS	INL at NE corner 14th Ave S and S Cloverdale St	NA	NA	9	105	83 J	0.04	278	NA	NA
RM 3.4 to 3.8 west	CS	RCB182	03/10/10	RCB	CS	CB at SE corner 14th Ave S and S Cloverdale St	23	12.3	8 J	116	101 J	0.1 U	813	860	3,100
RM 3.4 to 3.8 west	CS	RCB183	03/10/10	RCB	CS	INL at NE corner 14th Ave S and S Donovan St	43.1	7.5	10	86	719 J	0.87	592	1,000	2,200
RM 3.4 to 3.8 west	CS	RCB184	03/10/10	RCB	CS	CB at SE corner 14th Ave S and S Donovan St	46.9	6.4	10	103	61 J	0.08	430	530	1,700
RM 3.4 to 3.8 west	CS	SD14	03/10/10	RCB	CS	CB at SE corner 14th Ave S and Dallas Ave S	55.6	4.1	8 U	112	111 J	0.24	602	580	2,700
RM 3.4 to 3.8 west	CS	SW1	03/10/10	RCB	CS	Tanks at 17th Ave S and S Donovan St	45	9.15	11 J	284	250 J	0.33	1,040	900	3,500
RM 3.4 to 3.8 west	Port SD	PortCB6	08/09/10	CB	SD	Terminal 117	45.6	9.3	10	248	187	0.31	882	1,200	6,500

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID	BEP	BBP	Total PCBs	Acenaph-thene	Acenaph-thylene	Anthra-cene	Fluorene	Naphtha-lene	Phenan-threne	LPAH	Benzo(a)-anthracene
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB13	9,200 B	560	326	160 U	160 U	160 U	160 U	160 U	480	480	160 J
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB19	30,000	910	194 J	160 U	160 U	160 U	160 U	85 J	220	305 J	160 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB27A	20,000 B	1,400 J	48 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB27B	1,400,000 B	3,600	330	2,100 U	2,100 U	2,100 U	2,100 U	2,100 U	2,400	2,400	1,200 J
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB30	570,000 B	110 U	259	92 J	110 U	210	160	99 J	1,500 J	2,061 J	520
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB10	90,000	2,000 U	255 J	2,000 U	2,000 U	2,000 U	2,000 U	2,000 U	1,300 J	1,300 J	2,000 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB106	64,000	150,000	49	240 U	240 U	240 U	240 U	240 U	390	390	200 J
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB117	6,800	320 J	138 J	520 U	520 U	520 U	520 U	520 U	520 U	520 U	520 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB121	16,000 B	25,000	3,700	880 U	880 U	880 U	880 U	880 U	880 U	880 U	880 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB158	13,000	610	180	150 U	150 U	150 U	150 U	150 U	280	280	140 J
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB161	770	320	19 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB83	21,000	420 J	49	520 U	520 U	520 U	520 U	520 U	320 J	320 J	520 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST1	14,000	78 U	13,300	78 U	78 U	78 U	78 U	150	78 U	150	260
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST2	180	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST7	950	95	19 U	20 U	20 U	12 J	20 U	20 U	100	112 J	81
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	RCB37	4,200	190	390	96 U	96 U	96 U	96 U	96 U	250	250	120
RM 2.0 to 2.3 east	S Brighton St CSO/SD	CB163	10,000	550 U	311	550 U	550 U	550 U	550 U	550 U	340 J	340 J	550 U
RM 2.0 to 2.3 east	S Brighton St CSO/SD	MH110	7,500	250	NA	130	34 J	7,300	140	41 J	6,000	13,645	13,000
RM 2.0 to 2.3 east	S Brighton St CSO/SD	MH111	4,700	150	190	700	96 U	1,300	610	96 U	1,500	4,110	1,000
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB177	21,000	1,400	3,460	170 U	170 U	180	120 J	110 J	710	1,120 J	540
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB178	15,000	2,100	2,000	220 U	220 U	220 U	220 U	220 U	450	450	370
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB179	28,000	1,800	1,740	260 U	260 U	210 J	190 J	140 J	1,200	1,740 J	750
RM 2.3 to 2.8 east	S Garden St SD	CB157F	33,000	5,000	2,960	220 U	220 U	130 J	220 U	150 J	900	1,180	550 J
RM 2.3 to 2.8 east	S Garden St SD	CB157S	41,000	4,300	4,020	250 U	250 U	200 J	250 U	210 J	880	1,290	800 J
RM 2.3 to 2.8 east	S Garden St SD	RD1	11,000	2,200	1,930	88 U	88 U	88 U	88 U	66 J	640	706	440
RM 2.3 to 2.8 east	S Myrtle St SD	RD2	12,000	4,600	4,570	150 U	150 U	190	86 J	130 J	1,100	1,506	720
RM 2.3 to 2.8 east	S Myrtle St SD	RCB176	23,000	2,100	2,360	250	230 U	300	320	200 J	1,900	2,970 J	820
RM 2.3 to 2.8 east	S Myrtle St SD	RCB180	6,800	1,500	840	200	100 U	460	360	120	2,500	3,640	790
RM 2.3 to 2.8 east	S Myrtle St SD	RCB189F	84,000	6,200	1,650	330 U	330 U	200 J	240 J	470	1,600	2,510 J	610 J
RM 2.8 east	I-5 SD at Slip 4	SL4-T6	5,200	520	107	430 U	430 U	270 J	430 U	430 U	1,000	1,270 J	420 J
Rm 2.8 east	I-5 SD at Slip 4	SL4-T6	4,300	440	61	110 U	110 U	100 J	58 J	72 J	630	860 J	420
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T1	7,400	330	3,950	200 J	200 U	560	260	200 U	4,000	5,020	3,100

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID		BEP	BBP	Total PCBs	Acenaph-thene	Acenaph-thylene	Anthra-cene	Fluorene	Naphtha-lene	Phenan-threne	LPAH	Benzo(a)-anthracene
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2		19,000	530	460	430 J	470 U	1,300	570	470 U	11,000	13,300	7,200
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2A		NA	NA	179	NA	NA	NA	NA	NA	NA	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2A		48,000	1,100	450	930 U	930 U	2,700	1,600	930 U	27,000	31,300	20,000
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3		4,000	180 U	250	180 U	180 U	180 U	180 U	180 U	760	760	440
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3A		NA	NA	20 U	NA	NA	NA	NA	NA	NA	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3A		1,600	110 U	20 U	110 U	110 U	130	60 J	110 U	1,500	1,690	1,000
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T4		18,000	320 J	340	390 U	390 U	420	240 J	390 U	4,300	4,960 J	2,300
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T4A		6,000	630	680	170 J	250 U	680	260	250 U	4,900	6,010	3,900
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T5		10,000	280 J	2,100	140 J	250 U	540	250	250 U	4,200	5,130	2,800
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T5A		16,000	300 J	440	350 J	360 U	830	400	360 U	7,800	9,380 J	5,200
RM 2.8 to 3.7 east	KCIA-Jorgensen SD	KCIAJ-ST1		NA	NA	5,500	NA	NA	NA	NA	NA	NA	NA	NA
RM 3.7 to 3.9 east	KCIA SD#2	KCIA2-ST1	U	58	19 U	NA	19 U	19 U	11 J	19 U	19 U	51	NA	61
RM 3.7 to 3.9 east	KCIA SD#2	KCIA2-ST1	U	210	20 U	18 U	48	12 J	260	73	20 U	1,400	1,793 J	1,300
RM 3.7 to 3.9 east	KCIA SD#2/PS45 EOF	CB40		5,500	500	3,400	1,300	260	3,000	1,600	240	26,000	32,400	20,000
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	CB84		6,300	960 U	20 U	960 U	960 U	600 J	590 J	960 U	3,800	4,990 J	1,000
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST1	J	12,000 B	1,100 U	104	1,100 U	1,100 U	1,100 U	1,100 U	1,100 U	1,100	NA	950 J
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST2	J	1,600 B	89 U	57	71 J	89 U	89 U	100	140	200	NA	110
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST3	J	4,400 B	400	108	59 U	59 U	94	38 J	59 U	470	NA	380
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST4	UJ	73 U	59 U	18 U	37 J	59 U	59 U	55 J	93	85	NA	56 J
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST2		12,000	1,000 U	NA	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	900 J	NA	1,000 U
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST3		7,800	1,000 U	NA	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	750 J	NA	620 J
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST5		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID	BEP	BBP	Total PCBs	Acenaph-thene	Acenaph-thylene	Anthra-cene	Fluorene	Naphtha-lene	Phenan-threne	LPAH	Benzo(a)-anthracene
Lake Washington	Lake Washington	CB159	4,200	250	19 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Lake Washington	Lake Washington	CB160	33,000	960	123 J	520 U	520 U	520 U	520 U	520 U	590	590	280 NJ
RM 0.0 to 1.0 west	SW Dakota St SD/ditch	CB41C	37,000	1,800	317	230 U	230 U	180 J	160 J	260	1,000	1,600 J	370
RM 0.0 to 1.0 west	SW Dakota St SD/ditch	RCB185	2,900	19,000	610	74 U	74 U	74 U	74 U	38 J	75	113 J	53 J
RM 1.3 to 1.6 west	SW Kenny St SD/T115 CSO	KN-ST1	2,900 J	150 J	500	140	88	1,400	270	42 J	3,300	5,240 J	990 J
RM 2.1 to 2.2 west	2nd Ave S SD	CB116	39,000 B	11,000	902	850 U	850 U	730 J	850 U	850 U	1,300	2,030 J	470 J
RM 2.1 to 2.2 west	2nd Ave S SD	RCB109	8,200 B	190 U	147	190 U	190 U	140 J	120 J	190 U	540	800 J	140 J
RM 2.1 to 2.2 west	2nd Ave S SD	RCB110 U	3,200 B	250	158	160 U	160 U	160 U	160	160 U	210 U	160	130 J
RM 2.1 to 2.2 west	2nd Ave S SD	RCB190	13,000 B	640	151	360 U	360 U	360 U	360 U	360 U	1,000	1,000	840
RM 2.1 west	1st Ave S SD (west)	1st-ST5	26,000	700 U	193 J	550 J	700 U	700 U	530 J	700 U	1,400	2,480 J	540 J
RM 2.1 west	1st Ave S SD (west)	1st-ST5	24,000	570 U	274 J	350 J	570 U	570 U	380 J	570 U	1,000	1,730 J	510 J
RM 2.2 to 3.4 west	7th Ave S SD	CB154	33,000	95 J	230 J	86 U	86 U	86 U	86 U	86 U	79 J	79 J	86 U
RM 2.2 to 3.4 west	7th Ave S SD	7th-ST1	7,300	400 J	236	170 U	170 U	130 J	170 U	170 U	590	720	680
RM 2.2 to 3.4 west	7th Ave S SD	7th-ST3	2,100	320	82	21 J	20 J	57	21 J	24 J	290	433	220
RM 3.4 to 3.8 west	CS	CB2-DAL	21,000	580	420 NJ	460 U	460 U	260 J	360 J	550	2,100	3,270 J	540
RM 3.4 to 3.8 west	CS	CB4-DAL	1,600 J	260	560 NJ	41 U	41 U	41 U	41 U	41 U	110	110	44
RM 3.4 to 3.8 west	CS	RCB181	5,200	430	670 NJ	170 U	170 U	170 U	170 U	170 U	360	360	300
RM 3.4 to 3.8 west	CS	RCB182	27,000	190 U	490 NJ	190 U	190 U	160 J	210	100 J	1,300	1,770 J	340
RM 3.4 to 3.8 west	CS	RCB183	7,300	100 U	1,300 NJ	100 U	100 U	100 U	100 U	100 U	100 U	100	100 U
RM 3.4 to 3.8 west	CS	RCB184	12,000	73,000	340	230 U	230 U	230 U	140 J	230 U	750	890 J	390
RM 3.4 to 3.8 west	CS	SD14	24,000	1,600	280 NJ	330 U	330 U	380	450	630	1,900	3,360	620
RM 3.4 to 3.8 west	CS	SW1	18,000	240 U	620 NJ	240 U	240 U	230 J	120 J	240 U	750	1,100 J	330
RM 3.4 to 3.8 west	Port SD	PortCB6	57,000 B	7,400	1,020	270 U	270 U	620	200 J	270 U	860	1,680 J	400

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenz(a,h)-anthracene	Fluoran-thene	Indeno-(1,2,3-cd)-pyrene	Pyrene	HPAH
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB13	260	160 U	340	160 U	550	160 U	620	190	600	2,720
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB19	110 J	180	200	180	460	160 U	390	85 J	680	2,285
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB27A	2,000 U	1,300 J	2,000 U	1,300 J	1,500 J	2,000 U	2,300	2,000 U	1,200 J	7,600
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB27B	1,400 J	2,400	2,100 U	2,400	3,000	2,100 U	6,700	2,100 U	3,800	20,900
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB30	890 J	1,100 J	420 J	1,100 J	1,500 J	92 J	2,200 J	320 J	2,500 J	10,642
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB10	1,400 J	3,000	1,400 J	3,000	2,200	2,000 U	2,200	2,000 U	2,400	15,600
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB106	200 J	270	320	270	500	240 U	580	150 J	680 J	3,170
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB117	520 U	520 U	520 U	520 U	520 U	520 U	520 U	520 U	520 U	520
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB121	880 U	880 U	880 U	880 U	750 J	880 U	600 J	880 U	500 J	1,850
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB158	540	430	440	430	930	150 U	580	140 J	600	4,230
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB161	190 U	190 U	190 U	190 U	99 J	190 U	190 U	190 U	190 U	99
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB83	520 U	340 J	520 UJ	340 J	420 J	520 U	630 J	520 U	670 J	2,400
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST1	340	460	270 J	460	1,100	72 J	1,200	160	1,500 J	5,822
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST2	19 U	7 J	19 U	7 J	15 J	19 U	12 J	19 U	13 J	53
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST7	100	110	40 J	110	180	18 J	240	31	180 J	1,090
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	RCB37	140	290	150	210	280	96 U	400	86 J	370	2,046
RM 2.0 to 2.3 east	S Brighton St CSO/SD	CB163	550 U	550 U	440 J	550 U	550 U	550 U	550	550 U	500 J	1,490
RM 2.0 to 2.3 east	S Brighton St CSO/SD	MH110	8,400	8,700	1,500	8,700	15,000	1,100	27,000	1,800	25,000	110,200
RM 2.0 to 2.3 east	S Brighton St CSO/SD	MH111	1,000	1,100	240	1,100	1,600	75 J	4,100	250	3,000	13,465
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB177	650	850	460	850	1,200	140 J	1,600	400	1,600	8,290
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB178	470	660	350	660	990	220 U	890	220	1,100	5,710
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB179	800	1,100	560	1,100	1,900	200 J	2,800	380	3,100	12,690
RM 2.3 to 2.8 east	S Garden St SD	CB157F	440	590	180 J	590	990	55 J	1,700	130 J	1,100	6,325
RM 2.3 to 2.8 east	S Garden St SD	CB157S	580	890	270	890	1,600	250 U	2,400	200 J	1,500	9,130
RM 2.3 to 2.8 east	S Garden St SD	RD1	670	700	290	700	1,400	70 J	1,400	170	910	6,750
RM 2.3 to 2.8 east	S Myrtle St SD	RD2	1,000	1,500	440	1,500	1,300	120 J	2,600	360	1,400	10,940
RM 2.3 to 2.8 east	S Myrtle St SD	RCB176	720	770	530	770	1,400	210 J	2,500	350	2,300	10,370
RM 2.3 to 2.8 east	S Myrtle St SD	RCB180	720	790	200	790	1,200	66 J	2,400	180	1,600	8,736
RM 2.3 to 2.8 east	S Myrtle St SD	RCB189F	520	610	220 J	610	1,300	330 U	2,200	330 U	1,700	7,770
RM 2.8 east	I-5 SD at Slip 4	SL4-T6	400 J	310 J	290 J	310 J	540 NJ	430 U	1,300	250 J	780	4,600
Rm 2.8 east	I-5 SD at Slip 4	SL4-T6	420	440	220	440 J	640	74 J	1,500	190	700	5,044
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T1	4,600	4,300	3,600	4,300	5,100	1,300	9,900	3,100	5,400	44,700

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenz(a,h)-anthracene	Fluoran-thene	Indeno-(1,2,3-cd)-pyrene	Pyrene	HPAH
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2	12,000	13,000	9,400	13,000	16,000	3,500	28,000	8,500	15,000	125,600
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2A	29,000	38,000	24,000	38,000 J	45,000	9,900	100,000	26,000	33,000	362,900
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3	670	810	550	810	1,100	180 J	1,800	480	1,100	7,940
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3A	1,700	2,300	1,800	2,300 J	2,400	600	3,800	1,700	2,000	19,600
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T4	4,200	4,900	3,000	4,900	6,200	1,000	11,000	2,800	5,200	45,500
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T4A	5,700	5,500	2,900	5,500	6,500	1,200	13,000	2,800	7,100	54,100
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T5	4,500	4,400	3,000	4,400	5,500	1,100	10,000	2,700	5,500	43,900
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T5A	8,400	9,900	4,600	9,900	12,000	2,000	20,000	4,700	11,000	87,700
RM 2.8 to 3.7 east	KCIA-Jorgensen SD	KCIAJ-ST1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RM 3.7 to 3.9 east	KCIA SD#2	KCIA2-ST1	68	73	29	73	78	13 J	170 B	34	120	NA
RM 3.7 to 3.9 east	KCIA SD#2	KCIA2-ST1	1,300	1,300	620	1,300	1,300	330	4,400 B	730	2,700	15,280
RM 3.7 to 3.9 east	KCIA SD#2/PS45 EOF	CB40	27,000	36,000	8,200	36,000	34,000	5,600	64,000	8,700	44,000	283,500
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	CB84	800 J	730 J	640 J	730 J	2,500	960 U	2,000	960 U	2,500	10,900
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST1	1,200	1,100	640 J	1,100	1,600	1,100 U	2,500	610 J	1,900	NA
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST2	190	140	120 J	140	260	89 U	450	120 J	280	NA
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST3	420	580	260	580	560	59 U	1,000	270	620	NA
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST4	82	89	76 J	89	120	59 U	200	79 J	130	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST2	640 J	500 J	770 J	500 J	1,200 NJ	1,000 U	1,800	500 J	1,300	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST3	750 J	730 J	820 J	730 J	1,100 NJ	1,000 U	1,700	660 J	1,100	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID	Benzo(a)-pyrene	Benzo(b)-fluoranthene	Benzo(g,h,i)-perylene	Benzo(k)-fluoranthene	Chrysene	Dibenz(a,h)-anthracene	Fluoran-thene	Indeno-(1,2,3-cd)-pyrene	Pyrene	HPAH
Lake Washington	Lake Washington	CB159	200 U	200 U	200 U	200 U	200 U	200 U	200	200 U	200 U	200
Lake Washington	Lake Washington	CB160	800	620	480 J	620	1,000	520 U	1,100	290 J	1,400	6,590
RM 0.0 to 1.0 west	SW Dakota St SD/ditch	CB41C	620	790	320 J	790	1,600	230 U	1,600	260	1,200 J	7,550
RM 0.0 to 1.0 west	SW Dakota St SD/ditch	RCB185	78	87	43 J	87	140	74 U	120	74 U	110 J	718
RM 1.3 to 1.6 west	SW Kenny St SD/T115 CSO	KN-ST1	1,100	1,700	560	1,700 J	2,400 J	190	6,900	590	2,900 J	19,030
RM 2.1 to 2.2 west	2nd Ave S SD	CB116	540 J	500 J	580 J	500 J	1,400	850 U	1,200	850 U	1,100	6,290
RM 2.1 to 2.2 west	2nd Ave S SD	RCB109	230	300	170 J	300	560	57 J	870	120 J	970	3,717
RM 2.1 to 2.2 west	2nd Ave S SD	RCB110	300	340	300	340 J	510	160 U	520 U	160 U	470	2,390
RM 2.1 to 2.2 west	2nd Ave S SD	RCB190	720	800	270 J	800	1,300	120 J	2,000	240 J	2,000	9,090
RM 2.1 west	1st Ave S SD (west)	1st-ST5	550 J	650 J	380 J	650 J	980	700 U	1,700	700 U	1,900	7,350
RM 2.1 west	1st Ave S SD (west)	1st-ST5	490 J	560 J	300 J	560 J	850	570 U	1,600	570 U	1,600	6,470
RM 2.2 to 3.4 west	7th Ave S SD	CB154	86 U	63 J	86 U	63 J	68 J	86 U	190	86 U	140	435
RM 2.2 to 3.4 west	7th Ave S SD	7th-ST1	780	890	400	890	1,200	170 J	1,900	360	1,200	8,470
RM 2.2 to 3.4 west	7th Ave S SD	7th-ST3	410	410	270	410	450	86	900	210	540	3,906
RM 3.4 to 3.8 west	CS	CB2-DAL	710	760	390 J	760	1,400	460 U	1,800	460 U	1,700	8,060
RM 3.4 to 3.8 west	CS	CB4-DAL	100	150	74	150	260	41 U	190 J	48	210 J	1,226
RM 3.4 to 3.8 west	CS	RCB181	420	450	180	450	600	170 U	850	140 J	780	4,170
RM 3.4 to 3.8 west	CS	RCB182	580	650	440	650	1,500	58 J	1,700	200	2,500	8,618
RM 3.4 to 3.8 west	CS	RCB183	110	140	110	140	280	100 U	280	53 J	560	1,673
RM 3.4 to 3.8 west	CS	RCB184	450	550	330	550	870	230 U	920	190 J	1,200	5,450
RM 3.4 to 3.8 west	CS	SD14	650	720	370	720	1,100	330 U	1,900	230 J	1,900	8,210
RM 3.4 to 3.8 west	CS	SW1	740	750	400	750	1,200	240 U	1,400	210 J	1,700	7,480
RM 3.4 to 3.8 west	Port SD	PortCB6	540	630	480	630	980	140 J	1,400	300	1,900	7,400

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID		Diethyl-phthalate	Dimethyl-phthalate	Di-n-butyl-phthalate	Di-n-octyl-phthalate	2,4 Dimethyl-phenol	4-methyl phenol	Benzoic acid	Pentachloro-phenol	Phenol
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB13	J	160 U	650	160 U	160 U	160 U	880	660 J	800 U	160 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB19	J	160 U	160 U	440	760 J	160 U	2300	560 J	800 U	170
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB27A	J	2,000 U	2,000 U	2000 U	2000 U	2000 U	6900	20000 U	10000 UJ	2000 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB27B	J	2,100 U	2,100 U	2100 U	2100 U	2100 U	61000	21000 U	10000 UJ	2100 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB30	J	110 U	110 U	110 U	1600 J	110 U	210	2000 Q	550 U	290 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB10	J	2,000 U	2,000 U	2000 U	2000 U	2000 U	2000 U	20000 U	10000 U	2000 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB106	J	240 U	240 U	3200	7700	240 U	6300	33000 0	1200 U	1400
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB117	U	520 U	520 U	520 U	520 U	520 U	850	5200 U	2600 U	520 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB121	J	880 U	880 U	4100	1800 J	880 U	6700	3500 J	4400 UJ	880 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB158	J	150 U	150 U	230	1200	150 U	150 U	710 J	770 U	150 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB161	J	190 U	190 U	190 U	190 U	190 U	190 U	1900 U	940 U	190 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	CB83	J	520 U	520 U	940 J	520 U	520 U	520 U	5200 UJ	2600 U	520 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST1	J	78 U	78 U	78 U	78 U	78 U	78 U	780 UJ	390 U	78 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST2	J	19 U	19 U	19 U	19 U	19 U	19 U	190 UJ	97 U	19 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	ST7	J	20 U	20 U	54	160	20 U	20 U	200 UJ	98 U	20 U
RM 0.1 to 0.9 east	Diagonal Ave S CSO/SD	RCB37	J	96 U	96 U	96 U	96 U	96 U	60 J	960 UJ	480 UJ	61 J
RM 2.0 to 2.3 east	S Brighton St CSO/SD	CB163	J	550 U	520 J	550 U	550 U	550 U	1400	5500 U	2800 U	550 U
RM 2.0 to 2.3 east	S Brighton St CSO/SD	MH110		66 U	66 U	41 J	190	66 U	66 U	660 U	330 U	66 U
RM 2.0 to 2.3 east	S Brighton St CSO/SD	MH111		50 J	49 J	140	530	96 U	96 U	960 U	480 U	96 U
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB177		170 U	420	400	860	170 U	290	1700 U	870 U	170 U
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB178		220 U	1,400	470	740	220 U	15000	3000	1100 U	180 J
RM 2.0 to 2.3 east	S Brighton St CSO/SD	RCB179		140 J	510	860	2600	260 U	630	640 J	1300 U	260 U
RM 2.3 to 2.8 east	S Garden St SD	CB157F	J	220 U	2,500	1500	2200	220 U	330	870 J	1100 U	420
RM 2.3 to 2.8 east	S Garden St SD	CB157S	J	250 U	620	1200	3400	250 U	7800	1100 J	1200 U	1300
RM 2.3 to 2.8 east	S Garden St SD	RD1	J	88 U	510	670	920	88 U	88 U	590 J	440 U	240
RM 2.3 to 2.8 east	S Myrtle St SD	RD2	J	150 U	1,100	2200	970	150 U	150 U	1500 U	730 U	320
RM 2.3 to 2.8 east	S Myrtle St SD	RCB176		130 J	780	680	3400	230 U	460	2300 U	1100 U	230 U
RM 2.3 to 2.8 east	S Myrtle St SD	RCB180		63 J	360	270	770	100 U	160	1000 U	530 U	55 J
RM 2.3 to 2.8 east	S Myrtle St SD	RCB189F	J	330 U	870	3200	3500	330 U	330 U	3300 U	1600 U	330 U
RM 2.8 east	I-5 SD at Slip 4	SL4-T6	J	430 U	430 U	430 U	1200	430 U	430 U	4300 U	2200 U	430 U
Rm 2.8 east	I-5 SD at Slip 4	SL4-T6	J	110 UJ	110 J	110 U	110 U	110 U	270	1100 U	540 U	110 U
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T1		200 U	200 U	6900	1900	200 U	200 U	2000 U	1000 U	200 U

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID		Diethyl-phthalate	Dimethyl-phthalate	Di-n-butyl-phthalate	Di-n-octyl-phthalate	2,4 Dimethyl-phenol	4-methyl phenol	Benzoic acid	Pentachloro-phenol	Phenol
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2		470 U	470 U	1600	27000	470 U	470 U	4700 U	2300 U	470 U
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2A		NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T2A		930 UJ	930 U	930 U	930 U	930 U	930 U	9300 U	4600 U	930 U
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3		180 U	180 U	660	20000	180 U	180 U	1800 U	910 U	180 U
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3A		NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T3A		110 UJ	110 U	110 U	110 U	110 U	110 U	280 J	560 U	110 U
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T4		390 U	390 U	890	22000	390 U	390 U	3900 U	2000 U	390 U
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T4A		250 U	250 U	320	1200	250 U	270	2500 U	1300 U	250 U
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T5		250 U	250 U	1200	2500	250 U	660	2500 U	1200 U	250 U
Rm 2.8 east	KCIA SD#3/PS44 EOF	SL4-T5A		360 U	360 U	800	16000	360 U	360 U	3600 U	1800 U	360 U
RM 2.8 to 3.7 east	KCIA-Jorgensen SD	KCIAJ-ST1		NA	NA	NA	NA	NA	NA	NA	NA	NA
RM 3.7 to 3.9 east	KCIA SD#2	KCIA2-ST1		19 U	19 U	19 U	19 U	19 U	19 U	190 U	96 U	19 U
RM 3.7 to 3.9 east	KCIA SD#2	KCIA2-ST1	B	20 U	20 U	20 U	20 U	20 U	20 U	48 J	97 U	20 U
RM 3.7 to 3.9 east	KCIA SD#2/PS45 EOF	CB40		45 J	90 U	100	4400	90 U	70 J	260 J	450 U	67 J
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	CB84	J	960 U	960 U	560 J	960 U	960 U	960 U	9600 U	4800 U	960 U
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST1		1,100 U	1,100 U	1100 U	3200	1100 U	1100 U	11000 U	5500 U	1100 U
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST2		89 U	89 U	89 U	89 U	89 U	89 U	890 U	440 U	89 U
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST3		59 U	33 J	93	170 J	59 U	620	590 U	300 U	59 U
RM 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST4		59 U	59 U	59 U	59 U	59 U	59 U	590 U	300 U	59 U
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST1		NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST2		1,000 U	660 J	1000 U	1000 U	1100 U	1100 U	11000 U	5500 U	1100 U
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST3		1,000 U	1,000 U	1000 U	1000 U	1000 U	1000 U	10000 U	5100 U	1000 U
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST4		NA	NA	NA	NA	NA	NA	NA	NA	NA
Rm 4.9 east	Norfolk CSO/SD/PS#17 EOF	NST5		NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).

Appendix D: Source Tracing Sample Results (July 2009 - September 2010)

SCA	Outfall	Sta_ID		Diethyl-phthalate	Dimethyl-phthalate	Di-n-butyl-phthalate	Di-n-octyl-phthalate	2,4 Dimethyl-phenol	4-methyl phenol	Benzoic acid	Pentachloro-phenol	Phenol
Lake Washington	Lake Washington	CB159	U	200 U	200 U	200 U	200 U	200 U	9100	2000 U	1000 U	1200
Lake Washington	Lake Washington	CB160	J	520 U	520 U	520 U	2900 J	520 U	290 J	5200 U	2600 U	520 U
RM 0.0 to 1.0 west	SW Dakota St SD/ditch	CB41C	J	230 U	220 J	200 J	3700	230 U	390	2300 U	1200 U	230 U
RM 0.0 to 1.0 west	SW Dakota St SD/ditch	RCB185	J	74 U	66 J	1700	250	74 U	74 U	1900	370 U	74 U
RM 1.3 to 1.6 west	SW Kenny St SD/T115 CSO	KN-ST1	J	77 UJ	77 U	230	77 U	77 U	77 U	770 U	380 U	52 J
RM 2.1 to 2.2 west	2nd Ave S SD	CB116	J	850 U	850 U	1400	2100	850 U	2200	8500 U	4300 U	850 U
RM 2.1 to 2.2 west	2nd Ave S SD	RCB109	J	190 U	190 U	190 U	670 J	190 U	190 U	1900 U	950 UJ	190 U
RM 2.1 to 2.2 west	2nd Ave S SD	RCB110	J	160 U	160 U	160 U	18000	160 U	160 U	1600 U	780	160
RM 2.1 to 2.2 west	2nd Ave S SD	RCB190	J	360 U	360 U	360 U	1100 J	360 U	360 U	3600 U	1800 UJ	360 U
RM 2.1 west	1st Ave S SD (west)	1st-ST5		700 U	700 U	700 U	700 U	700 U	700 U	7000 U	3500 U	700 U
RM 2.1 west	1st Ave S SD (west)	1st-ST5		570 U	570 U	570 U	570 U	570 U	570 U	5700 U	2800 U	570 U
RM 2.2 to 3.4 west	7th Ave S SD	CB154	J	86 U	295	245	955	85.5 U	98	340 J	425 U	245
RM 2.2 to 3.4 west	7th Ave S SD	7th-ST1		170 UJ	170 U	130 J	210	170 U	170 U	1700 U	850 U	170 U
RM 2.2 to 3.4 west	7th Ave S SD	7th-ST3		34 UJ	56	110	46	34 U	34 U	120 J	170 U	69 B
RM 3.4 to 3.8 west	CS	CB2-DAL	J	630	460 U	460 U	460 U	460 U	370 J	4600 U	2300 UJ	460 U
RM 3.4 to 3.8 west	CS	CB4-DAL	J	41 U	80	41 U	41 U	41 U	630	270 J	210 UJ	110
RM 3.4 to 3.8 west	CS	RCB181	J	170 U	170 U	170 J	170 U	170 U	2000	1700 U	860 UJ	170 U
RM 3.4 to 3.8 west	CS	RCB182	J	650	1,200	330	190 U	190 U	1900	800 J	970 UJ	190 U
RM 3.4 to 3.8 west	CS	RCB183	J	200	100 U	100 U	100 U	100 U	140	320 J	510 UJ	100 U
RM 3.4 to 3.8 west	CS	RCB184	J	230 U	230 U	230 U	230 U	230 U	230	2300 U	1200 UJ	230 U
RM 3.4 to 3.8 west	CS	SD14	J	330 U	330 U	350	330 U	330 U	300 J	3300 U	1600 UJ	330 U
RM 3.4 to 3.8 west	CS	SW1	J	240 U	240 U	240 U	240 U	240 U	240 U	2400 U	1200 UJ	240 U
RM 3.4 to 3.8 west	Port SD	PortCB6	J	270 U	270 U	270 U	4800 J	270 U	270 U	2700 U	1300 UJ	270 U

NOTE: Data is listed as provided by SPU and may not be complete.
A complete set of sample results is provided in SPU's December 2010 Status Report (SPU 2010).