

90b - Actions Taken Pursuant to S4F

The City, through Seattle Public Utilities (SPU), provided notifications to the Department of Ecology under S4.F of potential water quality problems that may be related to discharges from the City of Seattle's (City) municipal separate storm sewer system (MS4). The City continues to apply and implement its programs for stormwater management and to seek improvement to those programs through increased understanding of stormwater impacts and mitigation tools. Per the requirement of S4.F.3.d, Seattle is providing the status of implementation and the results of any monitoring, assessment or evaluation efforts conducted during 2014 related to the Seattle Iron and Metals S4F notification and the Lower Duwamish Waterway S4F notification..

Starting with the Annual Report submitted in March 2016, the source control activities and information related to these Adaptive Management Response Plans will be incorporated and submitted with the Annual Report that is required as a result of SPU's S4F notification for Lower Duwamish Waterway (LDW) Sediments(December 2, 2013). Ecology's response in June 2014 to the LDW Sediments S4.F notification noted that an adaptive management response under S4.F.3 is warranted "for all the City's MS4 Discharge to the LDW, include City MS4 discharges to outfalls not owned or operated by the City." Ecology's response went on to direct SPU to incorporate future adaptive management in the S. Myrtle Street drainage basin into the adaptive management plan for source control in the City-owned MS4 portions of the LDW. The plan is known as "Seattle's Source Control Plan for the Lower Duwamish Waterway." SPU has done this as a draft and looks forward to working with Ecology as they implement a broader source control strategy for controlling sources of pollutants to prevent or minimize the likelihood that in-waterway sediments will be recontaminated.

Seattle Iron & Metals S4F Report for 2014

Background

SPU has been engaged with Ecology in inspection and enforcement of City code and a state issued NPDES permit, respectively, regarding a private business, Seattle Iron & Metals Corp, 601 S. Myrtle St. Evidence indicated that the source control BMPs implemented by the business have failed to contain and eliminate the discharge of pollutants from the work site of the business into the City's MS4. The City's MS4 discharges into the Duwamish Waterway, which is part of the Lower Duwamish Waterway (LDW) Superfund site. SPU has been engaged in storm drain solid sampling from private and public catch basins in the City's MS4 as part of the LDW source control program. Results from storm drain samples collected by SPU in 2008-2009 indicated elevated PCBs in the MS4 on S. Myrtle St. that could be associated with operations at Seattle Iron & Metals. SPU conducted a business inspection at Seattle Iron & Metals on January 30, 2009 and after sampling both the MS4 in the vicinity of the property and onsite catch basins, sent a corrective action letter on July 10, 2009, requiring the following improvements:

- Eliminate trackout of sediment and dirt onto adjacent City streets.
- Cover all outside materials that have a potential to leach or spill to the Duwamish River, including scrap piles adjacent to the dock where gaps in the dock permit material and stormwater to discharge directly to the river.
- Remove scrap metal storage bins from the City right-of-way.
- Prepare a written spill response plan for the site and post at an appropriate location onsite.
- Improve onsite housekeeping by regularly 1) sweeping the lot, 2) checking catch basins for sediment accumulation and maintaining as needed, and 3) cleaning up leaks/spills when they occur and employing the spill plan when necessary.

As a result of the business inspection and source tracing sampling of the MS4, SPU jetted and cleaned all the MS4 and associated MS4 structures (inlets, catch basins and maintenance holes) to remove sediment from the City's MS4 that discharges to the LDW at S. Myrtle St.

Following the jetting and cleaning of the MS4, SPU conducted a joint inspection of Seattle Iron & Metals with EPA. During the inspection, SPU and EPA collected sediment samples from the roofs of the main office and maintenance buildings, as well as the catch basins in the Seattle Iron & Metals employee parking lot and from a City-owned catch basin in the right-of-way adjacent to Seattle Iron & Metals' property. The data collected by SPU indicated that contaminants in the City's MS4, that had accumulated after jetting and cleaning, continued to exceed source control screening levels and these contaminants might be associated with stormwater discharges from Seattle Iron & Metals. Because of this, SPU issued a Notice of Violation (NOV) to Seattle Iron & Metals on July 8th, 2010. Upon receipt of the NOV, Seattle Iron & Metals requested, and SPU agreed to a, Voluntary Compliance Agreement (VCA) on September 29th, 2010. The VCA requires Seattle Iron & Metals to implement the following source control measures:

A. Roof Drains:

SIM agreed to survey roofs and drains for solid buildup and provide a report on this survey to SPU for review

SIM agreed to clean roof and drains per the roof survey results. Wash water associated with this cleaning will be routed to the onsite treatment system.

SIM agreed to design a roof drain treatment system and provide the design to SPU by November 15, 2010.

SIM submitted the engineering plans for the roof drain treatment system to SPU on November 15, 2010. In their submittal, SIM noted that Ecology had indicated that the roof drain system as planned may not satisfy the requirements of SIM's NPDES Industrial Wastewater Discharge permit requirements. SIM requested that SPU and Ecology meet and determine which standard the roof drain system must meet; Seattle Stormwater Code (SMC 22.800-22.808) or Ecology NPDES Industrial Wastewater Discharge permit requirements.

SPU and Ecology met to discuss this issue and determined that SIM should design the roof drain system to meet the Ecology NPDES Industrial Wastewater Discharge permit requirements.

SPU referred enforcement of this provision of the VCA to Ecology on June 10, 2011 under Special Condition S5.C.7.b of the 2007 NPDES Phase I Municipal Stormwater Permit.

B. Track Out:

- SIM will continue to implement a sweeping regiment that includes: sweeping at least once per day at the end of shift, moving employee vehicles to the employee parking lot onsite, rather than in the street, and more frequent sweeping as needed.

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C. Storm Drain Cleaning

- SIM agreed to clean the catch basins located on the south side of S. Myrtle Street from the end of Myrtle St. to 7th Ave. South by November 15, 2010.

SIM cleaned the catch basins located on the south side of S. Myrtle Street by November 15, 2010.

On April 4, 2013 SPU informed SIM via letter that the VCA had been completed.

SPU Adaptive Management Response Report

Ecology responded to the S4.F Notification on September 20th, 2010 that improved source control efforts by Seattle Iron & Metals will address their contribution to pollutant discharges, but Ecology expressed concern that Seattle Iron & Metals efforts by themselves may not eliminate the problem because there may be contribution to MS4 from an unpaved right-of-way on S. Myrtle St. Because of the potential for contribution to the MS4 from the unpaved right-of-way, Ecology determined that an Adaptive Management Response under condition S4.F.3 was necessary.

SPU submitted the Adaptive Management Response report to Ecology on November 22, 2010. The Adaptive Management Response report addressed the requirements detailed in S4.F.3.a and the required elements requested by Ecology in their September 20, 2010, response to the S4.F notification. Ecology acknowledged receipt of the Adaptive Management Response report on November 29, 2010. However, Ecology required additional actions and information prior to Approval. On April 4, 2011 SPU submitted a revised Adaptive Management report, which was approved on April 20, 2011 by Ecology.

Per the requirements of Special Condition S4.F.3.d, SPU is providing a summary of the status of the Adaptive Management Response report for 2014.

Quarterly Inspections of Catch Basins on S. Myrtle Street

During 2014, SPU monitored solids accumulation in catch basins in the vicinity of SIM. The table below details the results of this monitoring effort.

EQNUM	576148	576126	576140	576158	576162	576145	576165	943593
Location	S Myrtle St cul-de-sac, west	S Myrtle St cul-de-sac, north	north side S Myrtle St, west of SIM	south side S Myrtle St, west of SIM	south side S Myrtle St, east of SIM	S Myrtle St and Fox Ave S	south side S Myrtle St at 7th Ave	north side S Myrtle St, east of SIM
Type	CBL	CBL	CBL	CBL	CBL	CBL	CBL	CBL
March, 2014								
% Full	4%	13%	30%	68%	19%	38%	49%	26%
June, 2014								
% Full	5%	15%	38%	73%	22%	29%	55%	36%
September, 2014								
% Full	6%	13%	42%	72%	22%	29%	55%	36%
December, 2014								
% Full	6%	15%	16%	81%	30%	28%	50%	36%

The Large Catch Basin (CBL) numbered 576158 is above the City of Seattle's maintenance standard (60% full). Maintenance of the catch basin is scheduled.

Historically CBL 576162 has accumulated solids and required cleaning more frequently than the other catch basins on S. Myrtle Street. In 2013 Seattle Iron and Metals installed two Filtera units adjacent to their driveway on S. Myrtle Street

Quarterly Inspections of Maintenance holes on S. Myrtle St.

During 2014, SPU monitored solids accumulation in the main-line of the MS4 on S. Myrtle St. The table below details the results of this monitoring effort.

EQNUM	599350	599353	599354
Location	S Myrtle St cul-de-sac	S Myrtle St at SIM	S Myrtle St at 7 th Ave S
Type	MH	MH	MH
March, 2014			
% Full	0%	0%	0%
June, 2014			
% Full	0%	0%	0%
September, 2014			
% Full	0%	0%	0%
December, 2014			
% Full	0%	0%	0%

Based upon these quarterly inspections, line cleaning on S. Myrtle Street is not needed at this time.

Street Sweeping for Water Quality on S. Myrtle Street

S. Myrtle St. was swept by SDOT 37 times in 2014 as part the Street Sweeping for Water Quality Program (SS4WQ). The SS4WQ is currently focused on bi-weekly sweeping arterial streets that drain into the Municipal Storm Sewer System (MS4). S. Myrtle St. is included in

two sweeping routes (8 & 10) so that it is scheduled to be swept every week during the sweeping season¹. The SS4WQ program will continue to sweep S. Myrtle Street during 2015.

Unpaved ROW feasibility Study

SPU and SDOT completed and submitted a feasibility study focused on controlling discharges from the unpaved right-of-way on S. Myrtle St to Ecology in 2011. The study concluded that continuation of the actions outlined in the Adaptive Management Response plan (sweeping and MS4 infrastructure inspections) was the best option given evaluation of PCB data from catch basins in the unpaved right-of-way.

SPU included two structural stormwater control projects for S. Myrtle Street in its study for development of an Integrated Plan as part of the activities for compliance with a Consent Decree for CSO control. (The Consent Decree allows SPU to delay construction of CSO projects if SPU can demonstrate that construction of stormwater projects would result in greater environmental benefit.) SPU rated and ranked stormwater projects based upon their effectiveness at providing greater environmental benefits and meeting SPU's triple bottom line (environmental, economic and social benefits). The projects on S. Myrtle Street projects did not rank high enough in the process to be proposed as a stormwater project in the Draft Integrated Plan that was submitted to Ecology in May of 2014.

Other Activities

In November 2014, SPU received a request from SPU's Source Control Specialist about illegal dumping, improper material storage and abandoned vehicles in the vicinity of SIM. A SPU Source Control inspector visited the site, reported the abandoned vehicles to the Seattle Department of Transportation and contacted Ecology to discuss SIM activities and potential non-compliance with SIM's Ecology NPDES Industrial Wastewater Discharge permit requirements. At that time SPU requested coordination on a joint inspection of the SIM site. The Ecology inspector informed SPU that he would contact SPU when Ecology was ready to inspect SIM.

In December 2014, Ecology informed SPU that Ecology had conducted an inspection of the SIM site during the last week of November and requested that SPU delay an inspection of SIM given that Ecology had just visited the site. Given this information, SPU has placed SIM on the list of businesses for inspection per the requirements of the 2013 NPDES Phase I Permit and will most likely inspect SIM during Summer 2015. SPU will coordinate with Ecology when SIM is to be inspected, so that the two agencies can conduct a joint inspection of the site.

Lower Duwamish River Water Quality and Sediments S4F Report for 2014

An S4.F notification was submitted in 2007 to notify Ecology of potential water quality problems that may be related to discharges from the City's MS4 for the Lower Duwamish

¹ Due to holidays, mechanical issues, weather and funding, the sweeping program is currently not sweeping all 52 weeks of the year.

River. Ecology determined that a report under S4.F.2.a was not necessary, with that determination conditioned on certain City actions. Ecology required the City, beginning with its Phase I Permit Annual Report for 2008, to include a summary of its stormwater management efforts in basins that discharge to the Lower Duwamish River. The City must notify Ecology if Seattle's involvement in Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and associated Source Control Strategy processes changes or new information becomes available regarding phthalate recontamination in the Lower Duwamish Waterway.

An S4F notification was submitted on December 5, 2013 to notify Ecology of potential sediment quality problems that may be related to discharges from the City's MS4 for the Lower Duwamish Waterway (LDW). Ecology accepted the notification (June 4, 2014) as a general notification for all MS4 discharges to the LDW for all LDW sediment chemicals of concern (COC). The City's draft Source Control Implementation Plan (SCIP; November 2013) fulfills the City's requirement for submittal under S4.F.3.a of an expanded adaptive management response. The City is revising the SCIP, and a final draft of the SCIP is expected to be completed by March 31, 2015.

An S4F notification was submitted on September 5, 2014 to notify Ecology of potential sediment quality problems that may be related to discharges from the City's MS4 for the East Waterway (EWW) of the Duwamish Waterway. The City believes that S4.F.2 applies and that the collective efforts in the LDW, including business inspections, source tracing, line cleaning, and other programs, and ongoing source control efforts to support the EWW CERCLA cleanup satisfy the Permit requirements.

The Lower Duwamish River extends from approximately the north end of Harbor Island in the City of Seattle to the upper turning basin in the City of Tukwila. This area is subject to, and is undergoing, contaminated sediment studies and cleanup actions governed by CERCLA and State Model Toxics Control Act (MTCA) cleanup laws. This area includes the East and West Waterway operable units of the Harbor Island Superfund site and the Lower Duwamish Waterway (LDW) Superfund site. The City of Seattle and others are conducting source tracing and source control activities on adjacent upland public and private properties. Source Control activities are organized and prioritized across drainage areas to minimize the possibility for recontamination of the waterway.

Regarding City stormwater management efforts in basins that discharge to the Lower Duwamish River, the City implements several source tracing programs with specific emphasis to the Lower Duwamish Waterway. These programs include:

- **Business Inspections:** In support of the clean-up effort, multi-media inspections are conducted, which cover stormwater pollution prevention, hazardous waste management and industrial waste management. In 2014, 166 inspections were conducted with the Lower Duwamish Waterway (LDW) and East Waterway Basins (EWW). Each business is inspected for compliance with the City's Stormwater Code and required to be brought into compliance with all relevant best management practices (BMP) for source control. The inspections resulted in 145 Corrective

Action Letters, and none of these sites were referred to Ecology for potential NPDES Industrial Stormwater permit coverage. Sixteen facilities were issued NOV's for non-compliance with the City's Stormwater Code, and no facility entered into a Voluntary Compliance Agreement.

- **Stormwater Facility Inspections:** While inspecting a business for source control BMPs, the flow control and/or treatment facility is also inspected. Within the LDW and EWW basins, 81 facilities were inspected for Code compliance with regard to flow control and treatment system code requirements during 2014.
- **Illicit Discharge Detection and Elimination (IDDE):** SPU conducts sediment sampling of onsite catch basins, right of way catch basins and drainage system mainlines to identify sources of contamination and potential illicit discharges and illicit connections. Sampling is conducted in tandem with business inspections to identify and terminate sources of pollution. Samples are analyzed for the LDW contaminants of concern, including TOC, SVOC's, TPH-Dx, select Metals, PCB's, Grain Size and occasionally site specific parameters, such as pH, additional metals, VOCs.

The IDDE Summary Report: Duwamish Basin 2014 is attached (Attachment 1). Also included are maps, one identifying the basins screened and what remains and the other showing the illicit connections discovered in the individual basins.

- **Water Quality Complaints:** Inspectors respond to complaints as they are received through the water quality hotline, webpage or from agency referrals. In 2014, 82 water quality complaints were reported in the LDW and EWW basins, which include 33 IDDE trigger investigations and 9 complaints that resulted in business inspections. When a complaint is reported at a business, a full business inspection is completed. **Spill Response:** Spills are dispatched through the SPU Operations Response Center to on-call Spill Coordinators as they are received. In 2014, SPU responded to 41 spills within the LDW and EWW basins.
- **Education and Outreach:** SPU funds the Resource Venture, a conservation service for Seattle businesses. Resource Venture implements the City's Spill Kit Incentive Program, which provides free spill kits, assistance in developing spill plan and site specific technical assistance to Seattle businesses. Approximately 78 businesses in the LDW and EWW basins received spill kits, either stemming from a business inspection or through targeted outreach. Surveys conducted of spill kit recipients statistically show that businesses who participate in this program show an improved understanding of stormwater pollution prevention.
- **Line Cleaning:** In 2014, 57,736 linear feet on storm drainage lines were cleaned in the East Waterway and South Lander Street basin.
- **Source Tracing:** As part of the Lower Duwamish Waterway source control efforts, Seattle Public Utilities conducts periodic sampling of drainage infrastructure sediments across the basin. A sediment sample collected in July 2012 from a

maintenance hole sump located at the intersection of 6th Ave S and S Snoqualmie St was found to have contain high levels of PCB (45.9 ppm). A work order was created to clean the drainage system in an effort to remove the contaminant. The system was cleaned shortly after the initial sample was taken, and the location was flagged for ongoing monitoring. The station location is identified as MH18. In May 2013, another sample was taken and found to have reduced but still high PCB contamination (6.5 ppm). The drainage sub-area involved covers approximately ten blocks, and includes approximately twenty businesses. The businesses within the basin were prioritized for inspection based upon prior inspection history and site activity and risk potential.

Thirteen businesses were inspected as part of the source tracing efforts. The inspections conducted included a routine assessment of stormwater BMP compliance with a specific focus on potential PCB sources. Several locations had potential as PCB sources, due to the age of the buildings, electrical equipment on site, and site activities dealing with potentially PCB containing materials. SPU collected sample(s) at each site where feasible. The sediment samples collected were tested using the standard Duwamish parameters of PCBs, Metals, SVOCs, TOC, TPHDX, and Grain Size. Several businesses in the basin were not inspected during the source tracing, as they had been inspected within the prior year; however, samples were collected from their drainage infrastructure. Several locations were unable to be sampled due to lack of sediment in their infrastructure. In total, thirty-eight samples were collected within the sub-area (see Table 1).

The location for sample CB246-050714 is an Asian food goods distributor named Sun Foods. While business activities on the site did not appear to have a potential PCB impact, the property historically had several large concrete grain silos located in the parking area. These silos were removed years ago, but a large quantity of debris (paint chips, concrete, etc.) from their removal was scattered across the paved parking lot. Sample results from around the silo site varied greatly, with levels of PCB up to 45 ppm. A sample taken where the private drainage at the site entered the SPU system showed PCB level at "background levels", far lower than the samples taken on the property. This business was required, using progressive enforcement, to clean their drainage infrastructure and to remove all remnant debris from the grain silos that remained on site. Upon completion, subsequent sampling found levels of PCBs in the site's drainage system similar to background for the area.

Table 1. Sample Results

Sample Station	Sample Name	Sample Date	Result	Unit	Exceedance	Location
CB251	CB251-041614	4/16/2014	145	mg/kg	Yes	Western Waterproofing Catch Basin
CB261	CB261-051414	5/14/2014	39	mg/kg	Yes	Western Waterproofing Catch Basin
CB246	CB246-050714	5/17/2014	32	mg/kg	Yes	Sun Foods Catch Basin
CB260	CB260-051414	5/14/2014	28.9	mg/kg	Yes	Western Waterproofing Catch Basin
CB251	CB251-051414	5/14/2014	16.1	mg/kg	Yes	Western Waterproofing Catch Basin
CB247	CB247-050714	5/17/2014	14	mg/kg	Yes	Sun Foods Catch Basin
CB241	CB241-040414	4/4/2014	10	mg/kg	Yes	Sun Foods Catch Basin
CB242	CB242-040414	4/4/2014	6.2	mg/kg	Yes	Sun Foods Catch Basin
MH18	MH18-051414	5/14/2014	3.06	mg/kg	Yes	Inline Initiating Sample
CB248	CB248-050714	5/17/2014	2.9	mg/kg	Yes	Sun Foods Catch Basin
CB177	CB177-022614	2/26/2014	1.57	mg/kg	Yes	Catch Basin
CB2	CB2-031314	3/13/2014	0.97	mg/kg	No	Catch Basin
CB250	CB250-041614	4/16/2014	0.77	mg/kg	No	Catch Basin
RCB58	RCB58-040214	4/2/2014	0.68	mg/kg	No	ROW Catch Basin
RCB36	RCB36-041614	4/16/2014	0.55	mg/kg	No	ROW Catch Basin
RCB51	RCB51-051414	5/14/2014	0.5	mg/kg	No	ROW Catch Basin
CB180	CB180-022714	2/27/2014	0.45	mg/kg	No	Catch Basin
CB176	CB176-022614	2/26/2014	0.377	mg/kg	No	Catch Basin
CB231	CB231-032114	3/21/2014	0.29	mg/kg	No	Catch Basin
CB178	CB178-022614	2/26/2014	0.27	mg/kg	No	Catch Basin
CB240	CB240-040414	4/4/2014	0.27	mg/kg	No	Catch Basin
CB223	CB223-030714	3/7/2014	0.26	mg/kg	No	Catch Basin
CB226	CB226-030714	3/7/2014	0.218	mg/kg	No	Catch Basin
CB222	CB222-030714	3/7/2014	0.208	mg/kg	No	Catch Basin
CB221	CB221-030714	3/7/2014	0.191	mg/kg	No	Catch Basin
CB243	CB243-041014	4/10/2014	0.183	mg/kg	No	Catch Basin
RCB57	RCB57-040214	4/2/2014	0.167	mg/kg	No	ROW Catch Basin
CB179	CB179-022714	2/27/2014	0.166	mg/kg	No	Catch Basin
CB245	CB245-041014	4/10/2014	0.133	mg/kg	No	Catch Basin
CB224	CB224-030714	3/7/2014	0.123	mg/kg	No	Catch Basin
CB244	CB244-041014	4/10/2014	0.123	mg/kg	No	Catch Basin
RCB233	RCB233-041614	4/16/2014	0.104	mg/kg	No	ROW Catch Basin
CB220	CB220-030714	3/7/2014	0.099	mg/kg	No	Catch Basin
RCB294	RCB294-050714	5/17/2014	0.094	mg/kg	No	ROW Catch Basin
CB225	CB225-030714	3/7/2014	0.077	mg/kg	No	Catch Basin
RCB59	RCB59-040214	4/2/2014	0.076	mg/kg	No	ROW Catch Basin
CB230	CB230-032114	3/21/2014	0.038	mg/kg	No	Catch Basin
CB232	CB232-041614	4/16/2014	0.025	mg/kg	No	Catch Basin
CB227	CB227-030714	3/7/2014	0.019	mg/kg	No	Inline

The second PCB hotspot discovered during the sampling sweep was a structural waterproofing and restoration company called Western Waterproofing. A sediment sample taken from a storage yard drain at this site contained 145 ppm PCBs. The business and the property owner were contacted and informed of the contamination, and SPU staff began progressive enforcement with the site. Several samples were taken to determine the locations on site with contamination. Samples taken in the public MS4 infrastructure downstream had elevated PCB levels as well. The Toxics Clean-up Program (TCP) at Ecology was notified of the contamination and a formal request for the site to be listed was made. SPU Source Control required the business to sweep their lot, clean all catch basins, and to jet and clean the private and public drainage infrastructure from the business to MH18. The property owner hired a contractor and conducted a full cleaning of the drainage system as requested. Over 1,000 feet of MS4 was cleaned as a part of the enforcement process. Samples taken after the cleaning showed greatly reduced PCB levels, but levels still above the sediment management levels. The exact source of the PCBs at this site is unknown. The property owner is known to have conducted a PCB cleanup of the property five years prior to the discovery of PCBs in MH18, but he believes that the current PCBs are not related to this.

SPU Source Control is actively monitoring this sub-area and will be conducting follow up sampling of MH18 as sediment accumulates in the system. The basin will continue to be regularly inspected per the SPU Source Control compliance inspection frequencies, and if additional PCB contamination is found, SPU will continue source tracing efforts.