ANCHOR QEA

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May 24, 2010

Mr. Jim Orr
Oregon Department of Environmental Quality
2020 SW 4th Avenue, Suite 400
Portland, Oregon

Re: Revised Stormwater and Catch Basin Sediment Sampling Plan, McCall Oil and Chemical Corporation, RIFS, Portland, Oregon, ECSI #134
Project Number: 030162-01

Dear Jim:

This revised sampling plan was originally developed based on a April 23, 2010 email from Keith Johnson to Ted McCall which requests additional stormwater sampling and catch basin sediment sampling at the McCall Oil and Chemical site in Portland, Oregon (Figure 1). The first version of this plan was dated May 3, 2010. This revised plan has been modified to respond to DEQ's May 10, 2010 comment letter. This plan is consistent with DEQ's December 2005 Joint Source Control Strategy (JSCS) document. We are also preparing a plan to do the non-stormwater work requested by DEQ in the April 23rd e-mail. This stormwater workplan is being submitted on an expedited schedule so that we can get DEQ's approval and attempt to complete the stormwater sampling prior to the summer 2010 dry season.

The site includes both the McCall Terminal and the Brenntag facility. Brenntag currently operates the portions of the site formerly managed by Quadra Chemical and was occupied by Great Western Chemical at the time of the time of the Remedial Investigation (RI) Workplan (IT Corporation, November 2000).

Stormwater Sampling

Consistent with the JSCS document, storm water samples will be collected from the four locations identified in the RI Workplan (S-1 through S-4) as shown on Figure 2. Locations S-1, S-2, and S-3 are associated with the Brenntag facility and S-4 is associated with the McCall Terminal. Sampling procedures will be consistent with the RI Workplan and the December 2002 (rev. 1/05) Washington Department of Ecology Storm Water Sampling Guidance. Two rounds of stormwater sampling are proposed; one sample will be representative of first flush samples (within 30 minutes of stormwater discharge) and one sample representative of a normal storm event (within 3 hours of stormwater discharge).

As requested by DEQ, the stormwater samples will be laboratory tested for the following analyte list.

- Polynuclear Aromatic Hydrocarbons (PAHs) by EPA method 8270-SIM
- 4-Methylphenol by EPA method 8270D
- Dibenzofuran by EPA method 8270D
- Phthalates by EPA method 8270D
- Diesel Range Petroleum Hydrocarbons by method NWTPH-Dx
- Gasoline Range Hydrocarbons by method NWTPH-Gx
- Total and Dissolved Metals (As, Cu, Cr, Cd, Pb, and Zn) by EPA method 6020
- Polychlorinated biphenyls (PCB Aroclors) by EPA method 8082
- Organochlorine pesticides (pesticides) by EPA method 8081A
- Total Suspended Solids by EPA method 160.2

It should be noted that PCB and pesticide testing is being included at the request of DEQ; there are no known sources of PCBs or pesticides at the Site.

Catch Basin Sediment Sampling

The plan includes one round of catch basin sediment sampling. The catch basins (S-1, S-2, and S-3) are equipped with particulate filters so sediment is not likely to be present. Anchor QEA will open each catch basin and remove the particulate filters. If sediment is present, a sample will be collected and analyzed as indicated below. Consistent with the 2007 catch basin sediment sampling, if the catch basins contain no sediment, which is expected, we will check the filters to see if there is enough recoverable sediment accumulated on the filters to allow sampling. This method is being done with the understanding that sediment that is entrained in the catch basin filters does not represent sediment that is discharged to the river through the stormwater system. Station S-4 is an oil water separator and does not use a particulate filter, although the catch basins that feed the oil water separator have filters on

them. The final chamber of the oil water separator at S-4 will be checked for sediment, and sampled if present. If the last chamber of the oil water separator does not have sufficient sediment, then sediment will be collected from one or more of the upstream chambers. If no sediment is present in the upstream chambers or collection of a sample is not feasible due to limited access to the oil/water separator chambers, a composite sample will be collected from four or more catch basins representing different sections of the S-4 drainage basin.

Below is the analyte list for catch basin sediment sampling.

- PAHs by EPA method 8270-SIM
- 4-Methylphenol by EPA method 8270D
- Dibenzofuran by EPA method 8270D
- Phthalates by EPA method 8270D
- Diesel Range Petroleum Hydrocarbons by method NWTPH-Dx
- Gasoline Range Hydrocarbons by method NWTPH-Gx
- Total Metals (As, Cu, Cr, Cd, Pb, and Zn) by EPA method 6020
- PCB Aroclors by EPA method 8082
- Organochlorine pesticides (pesticides) by EPA method 8081A
- Total Organic Carbon by EPA method 9060A

The attached tables show a comparison of the laboratory method detection limits (MDLs) and Portland Harbor JSCS SLVs for both catch basin sediment and water. In general, the MDLs are below the SLVs; however, in some cases (Total PCBs and some pesticides) the SLVs are so low that they can't be met using standard laboratory test methods.

Reporting

Results of the stormwater and catch basin sediment samples will be submitted within 30 days of receipt of validated laboratory data. The results will be submitted both electronically and by hard copy. The reports will include the following items:

- Map of Sampling Locations
- Hydrograph of Rain Gage Data from Yeon Gage #121 with estimated onset of discharge relative to sample time shown
- Deviations from Field Sampling Plan, if any
- Tabulated Laboratory Analytical Results presented of the DEQ recommended SLV data tables

- Laboratory Data Validation Report
- Field Sampling Data Sheets

Anchor QEA has mobilized to the site in preparation for stormwater sampling, based on DEQ's approval as provided in the May 10, 2010 letter. If you have any questions, please let us know.

Sincerely,

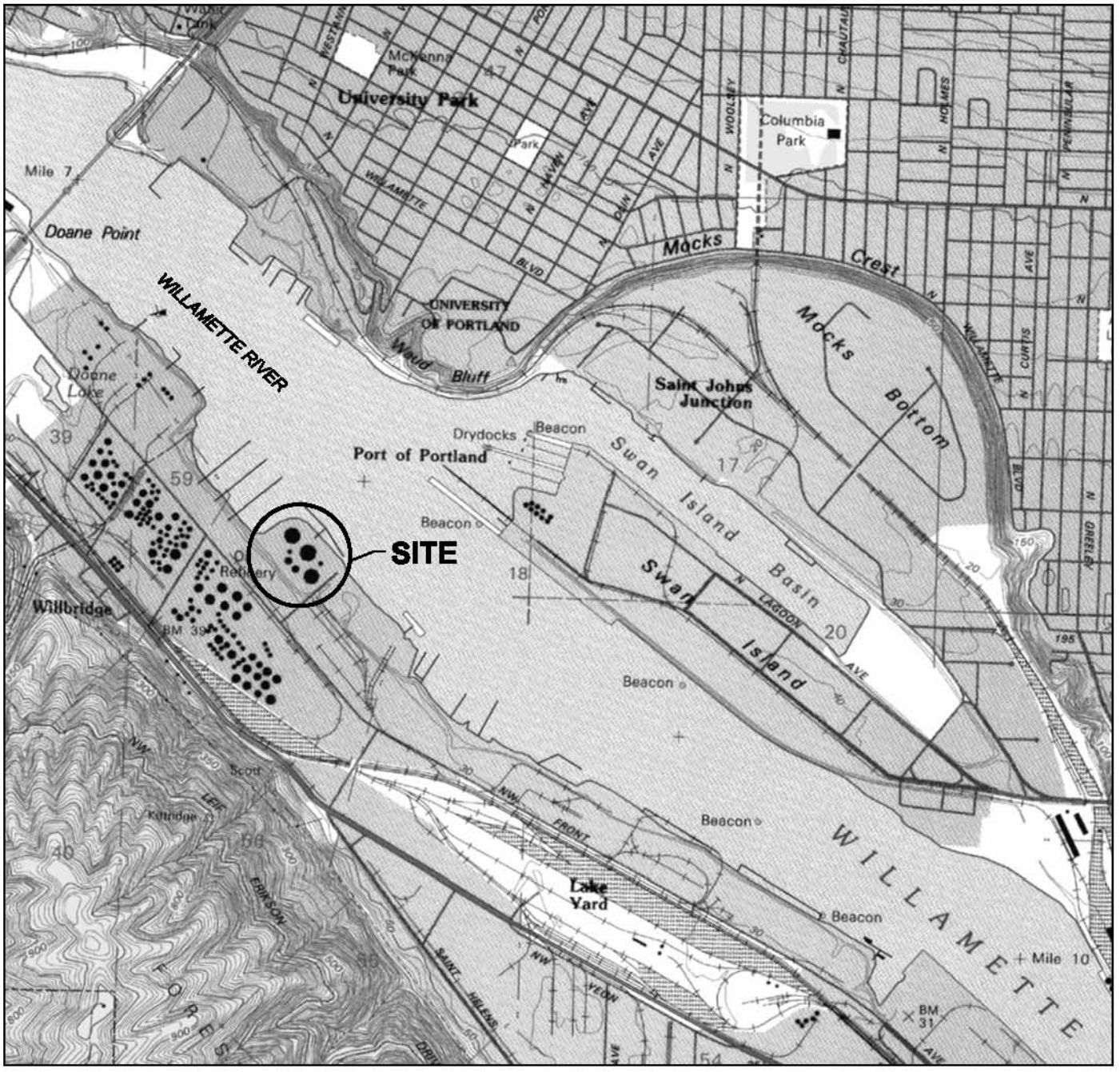
John J. Renda, R.G.
Anchor QEA, LLC

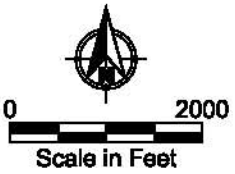
John E. Edwards, C.E.G, R.G.

Cc: Ted McCall; McCall Oil and Chemical

Attachments

Figure 1	Vicinity Map
Figure 2	Source Control Sample Location Plan
Table 1	Stormwater Screening Levels, Analytical Methods, and Practical Quantitation Limits
Table 2	Sediment Screening Levels, Analytical Methods, and Practical Quantitation Limits

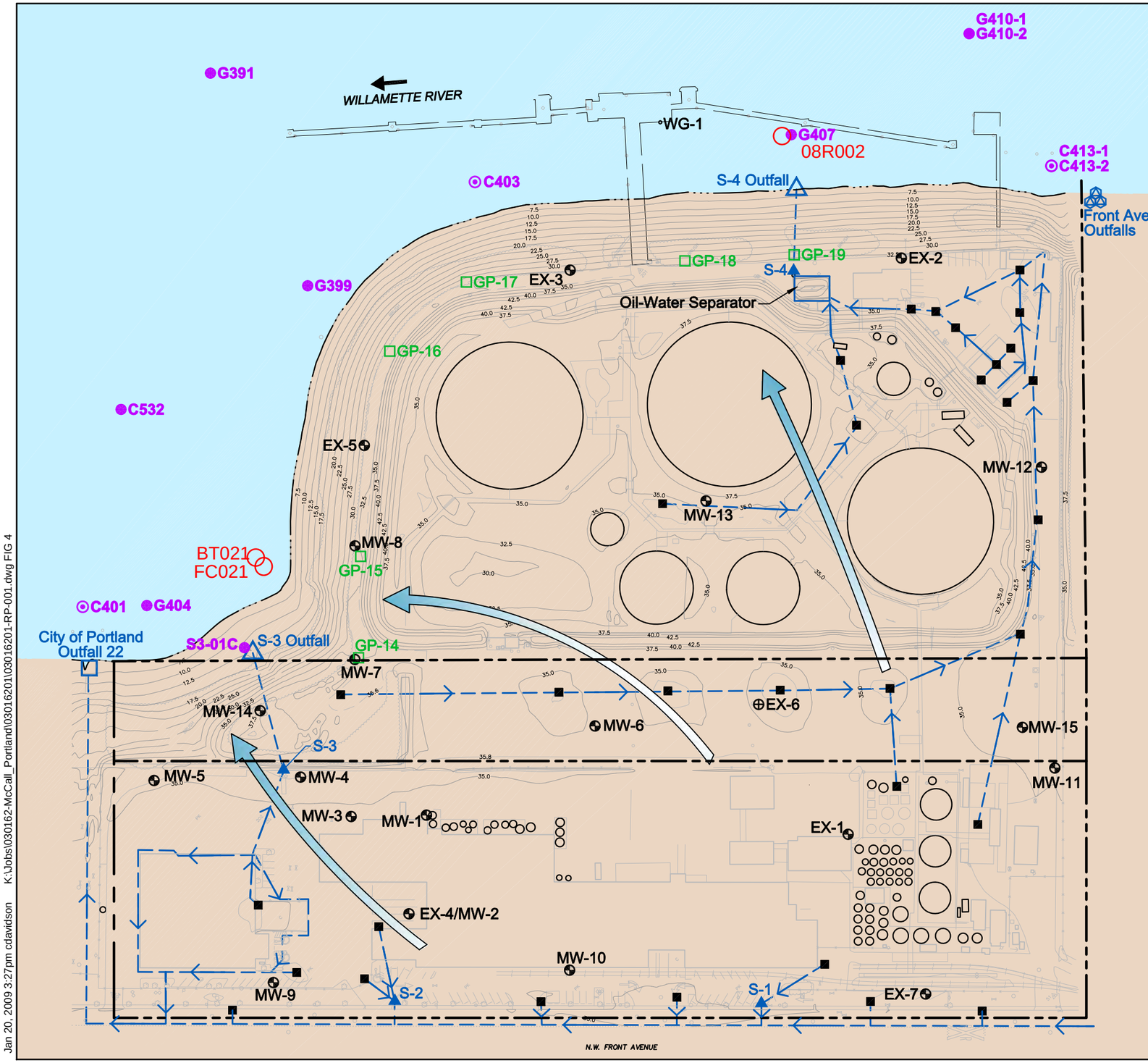




May 09, 2003 2:16pm cdavidson I:\CAD\Jobs\030162-McCall_Portland\030162010\030162201-12.dwg FIG 1

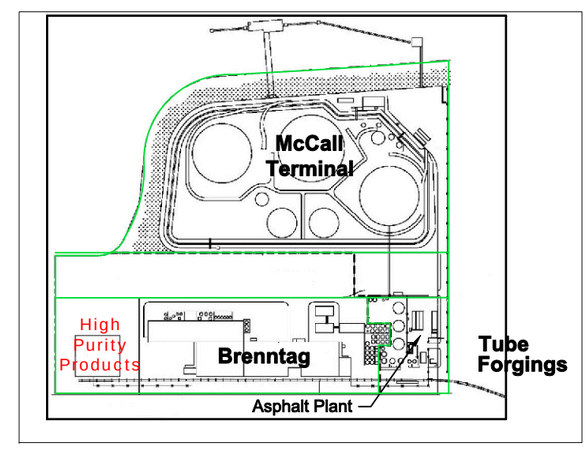
ANCHOR ENVIRONMENTAL, L.L.C.

Figure 1
Vicinity Map
McCall Oil and Chemical



Generalized Groundwater Flow Direction
Property Boundary (approximate)
Storm Drain Line (approximate)
Front Ave LLP Outfall
McCall / Brenntag Outfall
City of Portland Outfall
Catch Basin
LWG Sediment Sample
LWG Bioassay Sample
LWG Tissue Sample
Monitoring Well
Decommissioned Monitoring Well
Stormwater/Catch Basin Sample
Bank Surface Soil Sample
Vegetation
Building
Tank

0 150
Scale in Feet



Note: Figure prepared from base map provided by IT Corporation.

Horizontal Datum
Coordinates are on a local plane and are assumed.

Elevation Datum
Elevations are based on City of Portland Benchmark #2528.
Elevation = 34.64 Feet

Jan 20, 2009 3:27pm cdavidson K:\Jobs\030162-McCall_Portland\03016201\03016201-RP-001.dwg FIG 4

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Figure 2
Source Control Sample Location Plan
McCall Oil and Chemical

Table 1
Stormwater Screening Levels, Analytical Methods, and Practical Quantitation Limits

Units:	EPA's 2004 NRWQC (organisms only)[1] µg/L	DEQ's 2004 AWQC (organisms only)[1] µg/L	Portland Harbor Specific Fish Consumption Rate[1] µg/L	MCL[1] µg/L	Tap Water PRGs[1] µg/L	EPA's 2004 NRWQC (Chronic)[1] µg/L	DEQ's 2004 AWQC (Chronic)[1] µg/L	Oak Ridge National Laboratory Tier II SCV[1] µg/L	Analytical Method	Method Reporting Limit (ug/L)	Method Detection Limit (ug/L)
Dissolved Metals (µg/L)										-	-
Arsenic	0.14	0.14	0.014	10	0.045	150		3.1	6020	0.05	0.02
Cadmium				5	18	0.094	0.38		6020	0.09	0.04
Chromium				100					6020	2	0.2
Copper				1300	1400	2.7	3.6		6020	2.7	0.5
Lead				15	15	0.54	0.54		6020	0.5	0.1
Zinc	26000	26000	2600	5000	11000	36	33		6020	4	1.3
Total Metals (µg/L)										-	-
Arsenic	0.14	0.14	0.014	10	0.045	150		3.1	6020	0.05	0.02
Cadmium				5	18	0.094	0.38		6020	0.09	0.04
Chromium				100					6020	2	0.2
Copper				1300	1400	2.7	3.6		6020	2.7	0.5
Lead				15	15	0.54	0.54		6020	0.5	0.1
Zinc	26000	26000	2600	5000	11000	36	33		6020	4	1.3
Aromatic Hydrocarbons (µg/L)										-	-
2-Methylnapthalene				0.2						0.04	0.02
Acenaphthene	990	990	99	0.2	370		520		8270D/SIM	0.02	0.01
Acenaphthylene				0.2					8270D/SIM	0.02	0.01
Anthracene	40000	40000	4000	0.2	1800			0.73	8270D/SIM	0.02	0.01
Benzo(a)anthracene	0.018	0.018	0.0018	0.2	0.092			0.027	8270D/SIM	0.02	0.01
Benzo(a)pyrene	0.018	0.018	0.0018	0.2	0.0092			0.014	8270D/SIM	0.02	0.015
Benzo(b)fluoranthene	0.018	0.018	0.0018	0.2	0.092				8270D/SIM	0.02	0.01
Benzo(g,h,i)perylene				0.2					8270D/SIM	0.02	0.01
Benzo(k)fluoranthene	0.018	0.018	0.0018	0.2	0.92				8270D/SIM	0.02	0.01
Chrysene	0.018	0.018	0.0018	0.2	9.2				8270D/SIM	0.02	0.01
Dibenzo(a,h)anthracene	0.018	0.018	0.0018	0.2	0.0092				8270D/SIM	0.02	0.01
Fluoranthene	140	140	14	0.2	1500				8270D/SIM	0.02	0.01
Fluorene	5300	5300	530	0.2	240			3.9	8270D/SIM	0.02	0.01
Indeno(1,2,3-c,d)pyrene	0.018	0.018	0.0018	0.2	0.092				8270D/SIM	0.02	0.01
Naphthalene				0.2	6.2		620	12	8270D/SIM	0.04	0.02
Phenanthrene				0.2					8270D/SIM	0.02	0.01
Pyrene	4000	4000	400	0.2	180				8270D/SIM	0.02	0.01
Semivolatile Organics (µg/L)										-	-
Bis(2-ethylhexyl) phthalate	2.2	2.2	0.22	6	4.8		3		8270D	1	0.5
Diethyl phthalate	44000	44000	4400		29000		3	210	8270D	1	0.5
Butylbenzyl phthalate	1900	1900	190		7300		3	19	8270D	1	0.5
Dimethyl phthalate	1100000	1100000	110000		370000		3		8270D	1	0.5
Di-n-butyl phthalate	4500	4500	450		3700		3		8270D	1	0.5
Di-n-octyl phthalate					1500		3		8270D	1	0.5
4-Methylphenol					180				8270D	0.5	0.25
Dibenzofuran									8270D	0.02	0.01
Organochlorine Pesticides (µg/L)										-	-
alpha-BHC	0.0049	0.0049	0.00049		0.011			2.2	8081A	0.03	0.01
beta-BHC	0.017	0.017	0.0017		0.037				8081A	0.03	0.01
gamma-BHC (Lindane)	1.8	1.8	0.18		0.052		0.08		8081A	0.03	0.01

Table 1
Stormwater Screening Levels, Analytical Methods, and Practical Quantitation Limits

	EPA's 2004 NRWQC (organisms only)[1]	DEQ's 2004 AWQC (organisms only)[1]	Portland Harbor Specific Fish Consumption Rate[1]	MCL[1]	Tap Water PRGs[1]	EPA's 2004 NRWQC (Chronic)[1]	DEQ's 2004 AWQC (Chronic)[1]	Oak Ridge National Laboratory Tier II SCV[1]	Analytical Method	Method Reporting Limit (ug/L)	Method Detection Limit (ug/L)
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
Heptachlor	0.000079	0.000079	0.0000079	0.4	0.015	0.0038	0.0038	0.0069	8081A	0.03	0.01
Heptachlor Epoxide	0.000039	0.000039	0.0000039	0.2	0.0074	0.0038	0.0038		8081A	0.03	0.01
Aldrin	0.00005	0.00005	0.000005		0.004				8081A	0.03	0.01
alpha Chlordane									8081A	0.03	0.01
gamma Chlordane									8081A	0.03	0.01
Total Chlordane (alpha and gamn	0.00081	0.000081	0.000081	2	0.19				8081A	0.03	0.01
Endosulfan I	89	89	8.9		220	0.0043	0.0043	0.051	8081A	0.03	0.01
Endosulfan II	89	89	8.9		220	0.056	0.056	0.051	8081A	0.03	0.01
Endosulfan sulfate	89	89	8.9			0.056	0.056		8081A	0.03	0.01
DDD[2]	0.00031	0.00031	0.000031		0.28				8081A	0.03	0.01
DDE[2]	0.00022	0.00022	0.000022		0.2				8081A	0.03	0.01
DDT[2]	0.00022	0.00031	0.000022		0.2	0.001	0.001		8081A	0.03	0.01
Total DDT[2]					0.2				8081A	-	-
Dieldrin	0.000054	0.000054	0.0000054		0.0042	0.056	0.0019		8081A	0.03	0.01
Endrin	0.06	0.06	0.006	2	11	0.036	0.0023		8081A	0.03	0.01
Endrin aldehyde	0.3	0.3	0.03						8081A	0.03	0.01
Endrin ketone									8081A	0.03	0.01
Methoxychlor				40		0.03	0.03		8081A	0.08	0.04
Toxaphene	0.00028	0.00028	0.000028	3	180	0.002	0.002		8081A	1	0.1
PCB Aroclors (µg/L)										-	-
Aroclor 1016					0.96				8082	0.04	0.02
Aroclor 1221					0.034			0.28	8082	0.04	0.02
Aroclor 1232					0.034			0.58	8082	0.04	0.02
Aroclor 1242					0.034			0.053	8082	0.04	0.02
Aroclor 1248					0.034			0.081	8082	0.04	0.02
Aroclor 1254					0.034			0.033	8082	0.04	0.02
Aroclor 1260					0.034			94	8082	0.04	0.02
Aroclor 1262									8082	0.04	0.02
Aroclor 1268									8082	0.04	0.02
Total PCB Aroclors	0.000064	0.000064	0.0000064	0.5	0.034	0.014	0.014	0.14	8082	0.04	0.02
Total Petroleum Hydrocarbons (mg/L)										-	-
Diesel Range Hydrocarbons									NWTPHDX	0.08	0.04
Gasoline Range Hydrocarbons									NWTPHGX	0.2	0.08
Residual Range Hydrocarbons									NWTPHDX	0.1	0.05

Notes:

1 Screening criteria taken from Table 3-1 (7/16/07 revision) Portland Harbor JSCS, December 2005.

2 The sum of the 2,4' and 4,4' isomers.

AWQC = ambient water quality criteria

PRG = preliminary remediation goals

NRWQC = National Recommended Water Quality Criteria

Use for initial screening

Reporting limit exceeds highlighted screening level.

Table 2
Sediment Screening Levels, Analytical Methods, and Practical Quantitation Limits

Location ID: Sample Date: Sample ID: Monitoring Event: Units:		MacDonald PECs and other SQVs µg/kg	DEQ 2007 Bioaccumulative Sediment SLVs µg/kg	Analytical Method	MRL (ug/kg)	MDL (ug/kg)
Total Metals (µg/kg)						
	Arsenic	33000	7000	6020	0.5	0.08
	Cadmium	4980	1000	6020	0.2	0.04
	Chromium	111000		6020	0.5	0.045
	Copper	149000		6020	0.2	0.055
	Lead	128000	17000	6020	0.5	0.025
	Zinc	459000		6020	1	0.305
Aromatic Hydrocarbons (µg/kg)					-	-
	2-Methylnaphthalene	200		8270D/SIM	20	10
	Acenaphthene	300		8270D/SIM	10	5
	Acenaphthylene	200		8270D/SIM	10	5
	Anthracene	845		8270D/SIM	10	5
	Benzo(a)anthracene	1050		8270D/SIM	10	5
	Benzo(a)pyrene	1450		8270D/SIM	10	5
	Benzo(b)fluoranthene			8270D/SIM	10	5
	Benzo(g,h,i)perylene	300		8270D/SIM	10	5
	Benzo(k)fluoranthene	13000		8270D/SIM	10	5
	Chrysene	1290		8270D/SIM	10	5
	Dibenzo(a,h)anthracene	1300		8270D/SIM	10	5
	Fluoranthene	2230	37000	8270D/SIM	10	5
	Fluorene	536		8270D/SIM	10	5
	Indeno(1,2,3-c,d)pyrene	100		8270D/SIM	10	5
	Naphthalene	561		8270D/SIM	20	10
	Phenanthrene	1170		8270D/SIM	10	5
	Pyrene	1520	1900	8270D/SIM	10	5
Semivolatile Organics (µg/kg)					-	-
	Bis(2-ethylhexyl) phthalate	800	330	8270D	100	50
	Diethyl phthalate	600		8270D	100	50
	Butylbenzyl phthalate			8270D	100	50
	Dimethyl phthalate			8270D	100	50
	Di-n-butyl phthalate	100	60	8270D	100	50
	Di-n-octyl phthalate			8270D	100	50
	4-Methylphenol			8270D	250	125
	Dibenzofuran			8270D	10	5
Organochlorine Pesticides (µg/kg)					-	-
	alpha-BHC			8081A	1.7	0.5
	beta-BHC			8081A	1.7	0.5
	gamma-BHC (Lindane)	4.99		8081A	1.7	0.5
	Heptachlor	10		8081A	1.7	0.5
	Heptachlor Epoxide	16		8081A	1.7	0.5
	Aldrin	40		8081A	1.7	0.5
	alpha Chlordane			8081A	1.7	0.5
	gamma Chlordane			8081A	1.7	0.5
	Total Chlordane (alpha and gamm	17.6	0.37	8081A	1.7	0.5
	Endosulfan I			8081A	1.7	0.5

Table 2
Sediment Screening Levels, Analytical Methods, and Practical Quantitation Limits

Location ID: Sample Date: Sample ID: Monitoring Event: Units:		MacDonald PECs and other SQVs µg/kg	DEQ 2007 Bioaccumulative Sediment SLVs µg/kg	Analytical Method	MRL (ug/kg)	MDL (ug/kg)
	Endosulfan II			8081A	1.7	0.5
	Endosulfan sulfate			8081A	1.7	0.5
	DDD[2]	28	0.33	8081A	1.7	0.5
	DDE[2]	31.3	0.33	8081A	1.7	0.5
	DDT[2]	62.9	0.33	8081A	1.7	0.5
	Total DDT[2]		0.33	8081A	1.7	0.5
	Dieldrin	61.8	0.0081	8081A	1.7	0.5
	Endrin	207		8081A	1.7	0.5
	Endrin aldehyde			8081A	1.7	0.5
	Endrin ketone			8081A	1.7	0.5
	Methoxychlor			8081A	5	0.5
	Toxaphene			8081A	20	10
PCB Aroclors (µg/kg)					-	-
	Aroclor 1016	530		8082	10	5
	Aroclor 1221			8082	10	5
	Aroclor 1232			8082	10	5
	Aroclor 1242			8082	10	5
	Aroclor 1248	1500		8082	10	5
	Aroclor 1254	300		8082	10	5
	Aroclor 1260	200		8082	10	5
	Aroclor 1262			8082	10	5
	Aroclor 1268			8082	10	5
	Total PCB Aroclors	676	0.39	8082	10	5
Total Petroleum Hydrocarbons (mg/kg)						
	Diesel Range Hydrocarbons			NWTPHDX	4	1
	Gasoline Range Hydrocarbons			NWTPHGX	8	2
	Residual Range Hydrocarbons			NWTPHDX	4	2

Notes:

1 Screening criteria taken from Table 3-1 (7/16/07 revision) Portland Harbor JSCS, December 2005.

2 The sum of the 2,4' and 4,4' isomers.

Use for initial screening

Reporting limit exceeds highlighted screening level.