



State of Oregon Department of Environmental Quality

Portland Harbor Stormwater Strategy Update

Appendix B – Tables 6.1-3a and 6.1- 3b from Lower Willamette Group 2016 Final Portland Harbor Remedial Investigation Report

Table 6.1-3a. Percentage of Stormwater Composite Water Loading by Land Use and Non-Representative Location.

Analyte	Representative Land Use Types						Non-Representative Outfalls												
	Heavy Industrial	Light Industrial	Parks/Open Space	Residential/Commercial	Major Transportation	Total of Representative Land Uses	Basin L	Basin R	OF22B	WR107	WR123	WR14	WR142/145	WR147	WR161	WR22	WR384	WR96	Total of Non-Representative Outfalls
Metals																			
Arsenic	63.73%	11.12%	3.35%	4.67%	5.09%	87.96%												12.04%	12.04%
Chromium	32.57%	10.76%	3.98%	4.49%	5.49%	57.30%		4.62%		0.20%						23.46%	14.42%		42.70%
Copper	49.61%	7.79%	1.07%	4.91%	6.93%	70.30%		1.91%					8.26%	2.95%	4.35%		12.22%		29.70%
Lead	37.57%	11.82%	0.62%	4.51%	3.66%	58.17%		7.91%	1.91%					1.57%			30.45%		41.83%
Mercury	29.44%	10.00%	5.89%	6.20%	1.64%	53.18%		1.66%	3.38%								36.49%	5.30%	46.82%
Nickel	61.31%	8.96%	4.93%	5.25%	5.66%	86.11%											11.58%		13.89%
Zinc	55.07%	8.71%	0.67%	3.72%	4.39%	72.56%		3.84%					13.15%		2.12%		8.33%		27.44%
PCBs																			
PCB077	30.12%	3.55%	0.18%	1.03%	1.62%	36.49%											63.51%		63.51%
PCB081	16.19%	5.42%	1.59%	8.47%	2.23%	33.90%											66.10%		66.10%
PCB105	26.70%	2.01%	0.10%	0.68%	0.95%	30.44%											69.56%		69.56%
PCB118	25.84%	2.02%	0.11%	0.69%	0.95%	29.61%											70.39%		70.39%
PCB126	42.32%	5.40%	1.29%	3.14%	1.30%	53.45%											46.55%		46.55%
PCB156 & 157	28.49%	2.00%	0.11%	0.69%	0.87%	32.16%											67.84%		67.84%
PCB169	56.87%	12.14%	6.09%	21.24%	3.66%	100.00%													0.00%
Total PCBs	25.45%	2.47%	0.04%	0.60%	1.03%	29.59%											70.41%		70.41%
PCB TEQ	28.31%	3.64%	0.00%	0.12%	1.44%	33.51%											66.49%		66.49%
Pesticides																			
4,4'-DDD	23.64%	0.35%	0.02%	0.53%	0.21%	24.75%			9.46%									65.79%	75.25%
4,4'-DDT	19.92%	0.21%	0.03%	1.46%	0.15%	21.78%												78.22%	78.22%
Total DDE	7.08%	0.44%	0.08%	0.91%	0.16%	8.66%			1.84%									89.51%	91.34%
Total DDD	20.71%	0.43%	0.01%	0.80%	0.15%	22.11%			6.78%									71.11%	77.89%
Total DDT	9.38%	0.16%	0.03%	1.15%	0.11%	10.83%			0.27%									88.90%	89.17%
DDx	13.11%	0.16%	0.04%	1.02%	0.04%	14.36%			1.43%									84.21%	85.64%
Total chlordanes	86.30%	2.04%	0.02%	1.48%	0.99%	90.83%			7.52%					1.66%					9.17%
γ-Hexachlorocyclohexane (Lindane)	95.53%	3.23%	0.02%	1.06%	0.16%	100.00%													0.00%
Hexachlorobenzene	86.88%	4.27%	0.05%	7.66%	1.13%	100.00%													0.00%
Aldrin	86.56%	2.20%	0.06%	0.76%	0.34%	89.92%			10.08%										10.08%
Dieldrin	44.99%	2.18%	0.06%	2.57%	0.70%	50.50%			49.50%										49.50%
PAHs																			
Naphthalene	58.14%	20.44%	5.55%	5.03%	10.85%	100.00%													0.00%
Benzo(a)pyrene	38.70%	12.95%	0.67%	2.52%	8.52%	63.36%	15.16%			1.67%		0.35%					19.45%		36.64%
Total cPAHs BaPEq	35.17%	13.18%	0.30%	2.20%	8.60%	59.46%	14.84%			1.56%		0.45%					23.70%		40.54%
Total PAHs	48.98%	12.72%	0.17%	2.12%	8.23%	72.21%	7.38%										20.40%		27.79%
Phthalates																			
Bis(2-ethylhexyl) phthalate	52.26%	23.09%	3.16%	17.28%	0.00%	95.79%	1.69%						2.53%						4.21%

Notes:

Percentages are based on the geomean of the site averaged loads in kilograms.

BaPEq - benzo(a)pyrene equivalent

cPAH - carcinogenic polycyclic aromatic hydrocarbon

DDx - 2,4'- and 4,4'-DDD, DDE, and DDT

PAH - polycyclic aromatic hydrocarbon

PCB - polychlorinated biphenyl

TEQ - toxic equivalent concentration

Table 6.1-3b. Percentage of Stormwater Sediment Loading by Land Use and Non-Representative Location.

Analyte	Representative Land Use Types						Non-Representative Outfalls											Total of Non-Representative Outfalls	
	Heavy Industrial	Light Industrial	Parks/Open Space	Residential/Commercial	Major Transportation	Total of Representative Land Uses	Basin L	Basin R	OF22B	WR107	WR123	WR14	WR142/145	WR147	WR161	WR22	WR384		WR96
Metals																			
Arsenic	84.72%	6.20%	1.24%	4.36%	3.48%	100.00%													0.00%
Chromium	27.88%	20.19%	1.34%	3.97%	4.92%	58.30%				0.16%						37.09%	4.45%		41.70%
Copper	11.08%	1.51%	0.14%	1.08%	2.15%	15.96%									82.11%		1.93%		84.04%
Lead	44.27%	33.12%	0.27%	4.82%	4.27%	86.74%											13.26%		13.26%
Mercury	45.02%	10.24%	1.19%	6.62%	2.83%	65.90%											34.10%		34.10%
Nickel	70.56%	10.50%	1.78%	5.51%	8.09%	96.45%											3.55%		3.55%
Zinc	57.34%	6.68%	0.35%	4.49%	7.21%	76.07%									17.44%		6.49%		23.93%
PCBs																			
PCB077	38.54%	3.47%	0.03%	1.86%	3.24%	47.14%											52.86%		52.86%
PCB081	27.31%	2.20%	0.23%	1.06%	1.52%	32.31%											67.69%		67.69%
PCB105	29.88%	2.63%	0.07%	2.29%	1.79%	36.65%											63.35%		63.35%
PCB118	33.85%	2.83%	0.08%	2.70%	2.03%	41.48%											58.52%		58.52%
PCB126	47.62%	4.35%	0.16%	2.23%	2.58%	56.95%											43.05%		43.05%
PCB156 & 157	34.86%	2.59%	0.05%	2.14%	1.97%	41.60%											58.40%		58.40%
PCB169	72.77%	10.90%	8.11%	2.94%	5.28%	100.00%													0.00%
Total PCBs	33.65%	2.82%	0.04%	1.89%	2.29%	40.69%											59.31%		59.31%
PCB TEQ	30.33%	1.93%	0.00%	3.07%	3.54%	38.88%											61.12%		61.12%
Pesticides																			
4,4'-DDD	7.45%	0.43%	0.02%	0.64%	0.26%	8.79%			11.57%									79.64%	91.21%
4,4'-DDT	7.78%	0.24%	0.04%	1.68%	0.17%	9.91%												90.09%	90.09%
Total DDE	2.86%	0.46%	0.08%	0.95%	0.17%	4.51%			1.95%									93.54%	95.49%
Total DDD	8.26%	0.50%	0.01%	0.92%	0.17%	9.87%			7.93%									82.21%	90.13%
Total DDT	7.11%	0.17%	0.03%	1.18%	0.11%	8.59%			0.30%									91.11%	91.41%
DDx	6.84%	0.17%	0.04%	1.09%	0.04%	8.17%			1.58%									90.25%	91.83%
Total chlordanes	31.40%	9.23%	0.08%	6.72%	4.49%	51.92%			36.66%					11.42%					48.08%
γ-Hexachlorocyclohexane (Lindane)	67.03%	23.82%	0.14%	7.82%	1.19%	100.00%													0.00%
Hexachlorobenzene	56.57%	14.15%	0.18%	25.35%	3.75%	100.00%													0.00%
Aldrin	42.15%	9.09%	0.25%	3.14%	1.42%	56.05%			43.95%										43.95%
Dieldrin	10.34%	3.53%	0.09%	4.17%	1.14%	19.27%			80.73%										80.73%
PAHs																			
Naphthalene	49.49%	20.07%	0.21%	4.37%	25.86%	100.00%													0.00%
Benzo(a)pyrene	32.19%	13.90%	0.14%	4.67%	4.11%	55.01%	26.83%			4.49%		0.57%							44.99%
Total cPAHs BaPEq	27.89%	15.49%	0.12%	4.59%	3.80%	51.89%	26.73%		4.29%			0.69%							48.11%
Total PAHs	57.42%	9.91%	0.08%	2.62%	3.84%	73.87%	13.48%												26.13%
Phthalates																			
Bis(2-ethylhexyl) phthalate	49.79%	22.85%	0.01%	6.29%	15.67%	94.60%	5.40%												5.40%

Notes:

Percentage are based on the geometric mean of the site averaged loads in kilograms.

- BaPEq - benzo(a)pyrene equivalent
- cPAH - carcinogenic polycyclic aromatic hydrocarbon
- DDx - 2,4'- and 4,4'-DDD, DDE, and DDT
- PAH - polycyclic aromatic hydrocarbon
- PCB - polychlorinated biphenyl
- TEQ - toxic equivalent concentration