To: Gustavson, Karl[Gustavson.Karl@epa.gov]
From: King, Todd W.
Sent: Thur 7/24/2014 6:00:53 PM
Subject: Emailing: PH Fish Data Report Tables Final.xlsx, 2011-2012_Portland_Harbor_Bass.xlsx, PH 2012 SCRA data.xlsx, PH Fish Data Final Report - Feb 22 2013.pdf, PH Fish Data Report Final.pdf, PH Fish Data Report Final_ Feb 2013- text only.docx

PH Fish Data Report Tables Final.xlsx
2011-2012_Portland_Harbor_Bass.xlsx
PH 2012 SCRA data.xlsx
PH Fish Data Final Report - Feb 22 2013.pdf
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Table 1: Sample Locations

Portland Harbor Sample Receipt, Analysis, and Results Report

Location	Sample ID (EPA1-)	Collection Date	Sample Purpose	Analyzed?	Easting (NAD83)	Northing (NAD83)	Shipment
RM2E	EPA1-SB02E-01	9/22/2011	Target	Not Analyzed	7617559.5870	724490.8171	EPA 1
	EPA1-SB02E-04	9/15/2011	Target	Not Analyzed	7616831.9168	721677.8505	EPA 1
RM2W	EPA1-SB02W-02	9/16/2011	Target	Not Analyzed	7615381.2888	723941.6522	EPA 1
	EPA1-SB02W-05	9/16/2011	Target	Not Analyzed	7615077.7717	720994.6204	EPA 1
RM3E	EPA1-SB03E-04	9/15/2011	Target	Not Analyzed	7617951.5436	717347.3249	EPA 1
	EPA1-SB03E-05	9/20/2011	Target	Not Analyzed	7618807.7333	717284.6256	EPA 1
	EPA1-SB03E-08	9/22/2011	Target	Not Analyzed	7619736.8935	717037.2854	EPA 1
RM3W	EPA1-SB03W-01	9/16/2011	Target	Not Analyzed	7615068.6544	719538.6133	EPA 1
	EPA1-SB03W-03	9/16/2011	Target	Not Analyzed	7615813.7848	717984.5561	EPA 1
	EPA1-SB03W-05	9/16/2011	Target	Not Analyzed	7616463.1741	716444.7617	EPA 1
MC	EPA1-SBMC-01	9/15/2011	Target	Not Analyzed	7611620.6892	721658.7832	EPA 1
	EPA1-SBMC-03	9/15/2011	Target	Not Analyzed	7612397.2282	720301.7512	EPA 1
	EPA1-SBMC-04	9/15/2011	Target	Not Analyzed	7611374.3123	721259.7402	EPA 1
RM4E	EPA1-SB04E-02	9/29/2011	Target	Analyzed	7618740.3626	714962.8020	EPA 2
	EPA1-SB04E-06	9/29/2011	Target	Analyzed	7618995.0805	714296.5253	EPA 2
	EPA1-SB04E-08	9/14/2011	Target	Not Analyzed	7620447.4535	713407.5043	EPA 1
	EPA1-SB04E-10	9/14/2011	Target	Not Analyzed	7619734.6972	712843.0509	EPA 1
RM4W	EPA1-SB04W-02	9/16/2011	Target	Not Analyzed	7617350.9321	714289.1719	EPA 1
RM5E	EPA1-SB05E-01	9/14/2011	Target	Not Analyzed	7620479.9472	711431.5204	EPA 1
	EPA1-SB05E-02	10/3/2011	Target	Analyzed	7621025.9515	710385.5935	EPA 2
	EPA1-SB05E-03	10/3/2011	Target	Analyzed	7621611.1795	709354.4934	EPA 2
	EPA1-SB05E-04	10/6/2011	Target	Analyzed	7622425.6789	708300.1288	EPA 2
RM5W	EPA1-SB05W-02	10/2/2011	Target	Analyzed	7620011.5042	709612.5127	EPA 2
	EPA1-SB05W-03	9/28/2011	Target	Analyzed	7620605.9674	708796.5154	EPA 2
	EPA1-SB05W-04	9/22/2011	Lifecycle	Analyzed	7621193.7511	708165.8562	USACE

RM6E	RM6E	EPA1-SB06E-01	9/12/2011	Target	Not Analyzed	7623765.1730	707139.9929	EPA 1
		EPA1-SB06E-02	10/3/2011	Target	Analyzed	7625302.7482	706147.4378	EPA 2
		EPA1-SB06E-03	9/12/2011	Target	Not Analyzed	7626095.4709	705927.5462	EPA 1
		EPA1-SB06E-04	9/21/2011	Target	Not Analyzed	7626744.2407	705806.6349	EPA 1
		EPA1-SB06E-05	9/12/2011	Target	Not Analyzed	7627396.9465	705617.3686	EPA 1
		EPA1-SB06E-06	9/16/2011	Target	Not Analyzed	7627142.7577	704779.2220	EPA 1
		EPA1-SB06E-08	10/8/2011	Lifecycle	Analyzed	7627751.0048	704513.7004	USACE
		EPA1-SB06E-09	10/8/2011	Lifecycle	Analyzed	7627261.8801	704853.8424	USACE
		EPA1-SB06E-10	10/8/2011	Lifecycle	Analyzed	7627239.7773	704870.1191	USACE
		EPA1-SB06E-11	10/8/2011	Lifecycle	Analyzed	7627178.5231	704970.9609	USACE
RM6W	RM6W	EPA1-SB06W-01	10/7/2011	Target	Analyzed	7623259.7390	706089.1385	EPA 2
		EPA1-SB06W-02	9/21/2011	Target	Not Analyzed	7624486.3170	705395.1558	EPA 1
		EPA1-SB06W-04	10/6/2011	Target	Analyzed	7625793.9513	704637.7654	EPA 2
		EPA1-SB06W-05	9/20/2011	Target	Not Analyzed	7626390.2578	704033.1639	EPA 1
RM7E	RM7E	EPA1-SB07E-01	9/22/2011	Target	Not Analyzed	7627963.1834	704313.4497	EPA 1
		EPA1-SB07E-02	9/12/2011	Target	Not Analyzed	7629007.5720	703478.0664	EPA 1
		EPA1-SB07E-04	10/3/2011	Target	Analyzed	7630501.7604	702199.7767	EPA 2
		EPA1-SB07E-05	10/3/2011	Target	Analyzed	7631760.2932	701577.0326	EPA 2
		EPA1-SB07E-06	10/3/2011	Target	Analyzed	7631349.4996	701694.0680	EPA 2
RM8E	RM8E	EPA1-SB08E-01	9/19/2011	Target	Not Analyzed	7632509.7734	701744.1795	EPA 1
		EPA1-SB08E-04	9/12/2011	Target	Not Analyzed	7633809.8748	698774.8865	EPA 1
RM8W	RM8W	EPA1-SB08W-01	9/27/2011	Target	Analyzed	7630437.2081	699436.5357	EPA 2
		EPA1-SB08W-05	9/27/2011	Target	Analyzed	7633514.5928	696771.2835	EPA 2
		EPA1-SB08W-06	10/7/2011	Lifecycle	Analyzed	7630400.5316	699535.9693	USACE
SIL	SIL	EPA1-SBSIL-01	9/21/2011	Target	Not Analyzed	7633413.0652	701868.4090	EPA 1
RM9E	RM9E	EPA1-SB09E-04	9/13/2011	Target	Not Analyzed	7638082.5826	695670.2471	EPA 1
		EPA1-SB09E-05	9/28/2011	Target	Analyzed	7639620.3431	694926.9917	EPA 2
RM9W	RM9W	EPA1-SB09W-03	9/19/2011	Target	Not Analyzed	7636621.4442	694872.3983	EPA 1

RM10E	RM10E	EPA1-SB10E-01	9/13/2011	Target	Not Analyzed	7640156.5257	694052.8473	EPA 1
		EPA1-SB10E-03	9/13/2011	Target	Not Analyzed	7641370.1634	692238.8199	EPA 1
		EPA1-SB10E-04	9/28/2011	Target	Analyzed	7641543.9453	692043.6338	EPA 2
		EPA1-SB10E-06	9/28/2011	Lifecycle	Analyzed	7640465.8526	693421.9495	USACE
RM11E	RM11E	EPA1-SB11E-01	9/19/2011	Target	Not Analyzed	7643282.6779	690004.2714	EPA 1
		EPA1-SB11E-02	9/13/2011	Target	Not Analyzed	7644492.4098	689157.4272	EPA 1
		EPA1-SB11E-03	9/13/2011	Target	Not Analyzed	7645051.2669	688194.8416	EPA 1
		EPA1-SB11E-04	9/13/2011	Target	Not Analyzed	7645545.6549	687339.7093	EPA 1
		EPA1-SB11E-05	9/13/2011	Target	Not Analyzed	7646028.5524	686729.8025	EPA 1
		EPA1-SB11E-06	9/13/2011	Target	Not Analyzed	7644188.9814	689349.8960	EPA 1
		EPA1-SB11E-07	9/19/2011	Lifecycle	Analyzed	7643279.6427	690016.3478	USACE
		EPA1-SB11E-08	10/7/2011	Lifecycle	Analyzed	7644062.9295	689439.2818	USACE
		EPA1-SB11E-09	10/7/2011	Lifecycle	Analyzed	7643687.4064	689713.2152	USACE
		EPA1-SB11E-10	10/7/2011	Lifecycle	Analyzed	7643305.4448	689983.1343	USACE
RM11W	RM11W	EPA1-SB11W-04	9/16/2011	Target	Not Analyzed	7644463.1731	687488.7531	EPA 1
		EPA1-SB11W-05	9/28/2011	Target	Analyzed	7645552.1395	686305.2547	EPA 2
		EPA1-SB11W-06	9/16/2011	Lifecycle	Analyzed	7645637.3541	686200.0404	USACE
		EPA1-SB11W-07	9/28/2011	Lifecycle	Analyzed	7643703.1530	688248.8439	USACE
		EPA1-SB11W-08	9/28/2011	Lifecycle	Analyzed	7642440.5451	689464.8130	USACE
RM15E	RM15E	EPA1-SB15E-01	9/26/2011	Target	Not Analyzed	7646308.0338	668795.0119	EPA 1
		EPA1-SB15E-02	9/23/2011	Target	Not Analyzed	7647151.9207	668742.9954	EPA 1
		EPA1-SB15E-03	9/23/2011	Target	Not Analyzed	7646369.0729	668317.7888	EPA 1
		EPA1-SB15E-04	9/26/2011	Target	Not Analyzed	7646307.1184	668494.3107	EPA 1
		EPA1-SB15E-05	9/26/2011	Target	Not Analyzed	7647121.2253	667554.4248	EPA 1
RM16W	RM16W	EPA1-SB16W-01	9/26/2011	Target	Not Analyzed	7646073.9461	662735.8685	EPA 1
		EPA1-SB16W-02	9/26/2011	Target	Not Analyzed	7646177.9411	662992.9936	EPA 1
RM17W	RM17W	EPA1-SB17W-01	9/26/2011	Target	Not Analyzed	7648317.5271	657983.1762	EPA 1
		EPA1-SB17W-02	9/26/2011	Target	Not Analyzed	7648171.4210	658470.3637	EPA 1
		EPA1-SB17W-03	9/26/2011	Target	Not Analyzed	7647825.1467	659142.0138	EPA 1

Table 2: Data Validation Results
Portland Harbor Sample Receipt, Analysis, and Results Report

Analysis	Matrix	Number Qualified as Estimated	Number Qualified as Rejected	Total Number of Results	Percent Qualified as Estimated	Percent Qualified as Rejected
Polychlorinated Biphenyls	Fish Tissue	39	0	11084	0.35%	0.00%
Lipids	Fish Tissue	0	0	64	0.00%	0.00%
Total Fish Tissue		39	0	11148	0.35%	0.00%

Table 3. Summary of Analyte Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

Summed Analyte	Analytes Included in the Summed Analyte Total	TEF	Summation Rules Used
Total PCB Congeners (RI Calc; ND=0)	All PCB congeners	1	RI Rules
Dioxin-like PCB congener TCDD toxicity equivalent (ND = 0)	PCB-77	0.0001	RI Rules
	PCB-81	0.0003	
	PCB-105	0.00003	
	PCB-114	0.00003	
	PCB-118	0.00003	
	PCB-123	0.00003	
	PCB-126	0.1	
	PCB-156	0.00003	
	PCB-157	0.00003	
	PCB-167	0.00003	
	PCB-169	0.03	
	PCB-189	0.00003	
Monochlorobiphenyl homologs	PCB-1 through PCB-3	1	RA Rules
Dichlorobiphenyl homologs	PCB-4 through PCB-15	1	RA Rules
Trichlorobiphenyl homologs	PCB-16 through PCB-39	1	RA Rules
Tetrachlorobiphenyl homologs	PCB-40 through PCB-81	1	RA Rules
Pentachlorobiphenyl homologs	PCB-82 through PCB-127	1	RA Rules
Hexachlorobiphenyl homologs	PCB-129 through PCB-169	1	RA Rules
Heptachlorobiphenyl homologs	PCB-170 through PCB-193	1	RA Rules
Octachlorobiphenyl homologs	PCB-194 through PCB-205	1	RA Rules
Nonachlorobiphenyl homologs	PCB-206 through PCB-208	1	RA Rules
Total PCB Congeners (RA Calc; ND=0.5 RDL)	All PCB congeners	1	RA Rules
PCB TEQ - Mammals	PCB-77	0.0001	RA Rules
	PCB-81	0.0003	
	PCB-105	0.00003	
	PCB-114	0.00003	
	PCB-118	0.00003	
	PCB-123	0.00003	
	PCB-126	0.1	
	PCB-156	0.00003	
	PCB-157	0.00003	
	PCB-167	0.00003	
	PCB-169	0.03	
	PCB-189	0.00003	

PCB TEQ - Birds	PCB TEQ - Birds			PCB-77
				PCB-81
				PCB-105
				PCB-114
				PCB-118
				PCB-123
				PCB-126
				PCB-156
				PCB-157
				PCB-167
				PCB-169
				PCB-189
PCB TEQ - Fish	PCB TEQ - Fish			PCB-77
				PCB-81
				PCB-105
				PCB-114
				PCB-118
				PCB-123
				PCB-126
				PCB-156
				PCB-157
				PCB-167
				PCB-169
				PCB-189

Notes:	**Notes:**	
PCB	PCB	Polychlorinated biphenyl
RA	RA	Risk assessment
RI	RI	Remedial investigation
TEF	TEF	Toxic equivalency factor
TEQ	TEQ	Toxic equivalent

RI rules for summarization are as follows:

Calculated totals are the sum of all detected concentrations. Non-detection concentrations are treated as zero.

If none of the analytes are detected in a sample, the highest reporting limit is used for the calculated total, and a U qualifier is used to indicate the lack of detected values.

RA rules for summarization are as follows:

Calculated totals are the sum of all detected concentrations. For each analyte detected in the data set within the study area for the given medium, the given reporting limit is multiplied by one-half the detection limit.

If none of the analytes are detected in a sample, the highest reporting limit is used for the calculated total, and a U qualifier is used to indicate the lack of detected values.

Non-detect results for analytes that were not detected within a data set for a given medium are treated as zero.

Table 3. Summary of Analyte Summation Groups

Portland Harbor Sample Receipt, Analysis, and Results Report

Summed Analyte	TEF	Summation Rules Used
Total PCB Congeners (RI Calc; ND = 0)	1	RI Rules
Dioxin-like PCB congeners TCDD toxicity equivalent (ND = 0)	0.0001	RI Rules
	0.0003	
	0.00003	
	0.00003	
	0.00003	
	0.00003	
	0.1	
	0.00003	
	0.00003	
	0.00003	
	0.03	
	0.00003	
Monochlorobiphenyl homologs	1	RA Rules
Dichlorobiphenyl homologs	1	RA Rules
Trichlorobiphenyl homologs	1	RA Rules
Tetrachlorobiphenyl homologs	1	RA Rules
Pentachlorobiphenyl homologs	1	RA Rules
Hexachlorobiphenyl homologs	1	RA Rules
Heptachlorobiphenyl homologs	1	RA Rules
Octachlorobiphenyl homologs	1	RA Rules
Nonachlorobiphenyl homologs	1	RA Rules
Total PCB Congeners (RA Calc; ND = 0.5 RDL)	1	RA Rules
PCB TEQ - Mammals	0.0001	RA Rules
	0.0003	
	0.00003	
	0.00003	
	0.00003	
	0.00003	
	0.1	
	0.00003	
	0.00003	
	0.00003	
	0.03	
	0.00003	

PCB TEQ - Birds	RA Rules	0.05	
		0.1	
		0.0001	
		0.0001	
		0.00001	
		0.00001	
		0.1	
		0.0001	
		0.0001	
		0.00001	
		0.001	
		0.00001	
PCB TEQ - Fish	RA Rules	0.0001	
		0.0005	
		0.000005	
		0.000005	
		0.000005	
		0.000005	
		0.005	
		0.000005	
		0.000005	
		0.000005	
		0.00005	
		0.000005	

Notes:

PCB

RA

RI

TEF

TEQ

RI rules for summation are as follows:

Calculated totals are the sum of all detected concentrations. Non-detected concentrations are treated as zero.

If none of the analytes are detected in a sample, the highest reporting limit is used for the calculated total, and a U qualifier is used to indicate the lack of detected values.

RA rules for summation are as follows:

Calculated totals are the sum of all detected concentrations. For any analyte detected at least once in the data set within the study area for a given medium, the result is included in the summation at one-half the detection limit.

If none of the analytes are detected in a sample, the highest reporting limit is used for the calculated total, and a U qualifier is used to indicate the lack of detected values.

Non-detect results for analytes that were never detected within a data set for a given medium were treated as zero.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

Table 4. Analytic
Portland Harbor S

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02			EPA1-SB05E-03
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet
X-coordinate	7618740.36258	7618740.36258	7618740.36258	7618995.08054	7618995.08054	7618995.08054	7621025.9515	7621025.9515	7621025.9515	7621611.17954
Y-coordinate	714962.80202	714962.80202	714962.80202	714296.52532	714296.52532	714296.52532	710385.59352	710385.59352	710385.59352	709354.49337
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2	5.4
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54	9:32
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12	198.04
PCB001	21.6 U	21.4 U	NC	38.6	22.3 U	NC	36.8 U	15 U	NC	21 U
PCB002	26.8 U	26.6 U	NC	26.6 U	27.6 U	NC	45.6 U	18.6 U	NC	26.1 U
PCB003	16.9	14 U	NC	34.2	16.3	NC	24 U	9.8 U	NC	16.9
PCB004	465	88.2	NC	757	151	NC	264	46.5	NC	500
PCB005	26.8 U	26.6 U	NC	26.6 U	27.6 U	NC	45.6 U	18.6 U	NC	26.1 U
PCB006	79.1	24.9 U	NC	113	28.7	NC	42.6 U	17.4 U	NC	48.2
PCB007	34 U	33.7 U	NC	33.7 U	35 U	NC	57.8 U	23.6 U	NC	33.1 U
PCB008	384	93.1	NC	407	106	NC	130 U	46.7 U	NC	204
PCB009	25.8	16.3 U	NC	23.8 J	16.9 U	NC	27.9 U	11.4 U	NC	16 U
PCB010	22.8	17.7 U	NC	38.4	18.4 U	NC	30.4 U	12.4 U	NC	19.5
PCB011	241	172	NC	269	159	NC	239 U	154	NC	329
PCB012 & 013	23.9 U	23.7 U	NC	23.7 U	24.7 U	NC	40.7 U	16.6 U	NC	23.3 U
PCB014	26.3 U	26 U	NC	26 U	27 U	NC	44.6 U	18.2 U	NC	25.5 U
PCB015	170	57.2	NC	169	86.8	NC	67.2 U	27.4 U	NC	115
PCB016	471	102	NC	382	108	NC	163	36.4	NC	167
PCB017	942	181	NC	1,010	224	NC	418	67.6	NC	587
PCB018 & 030	1,370	273	NC	1,250	327	NC	491	92.1 U	NC	528 U
PCB019	751	132	NC	687	146	NC	528	78.7	NC	822
PCB020 & 028	5,770	1,110	NC	8,570	1,820	NC	2,150	348 U	NC	1,840
PCB021 & 033	1,090	249	NC	873	277	NC	367	90.2 U	NC	366
PCB022	1,310	269	NC	1,330	336	NC	418	79.3	NC	331
PCB023	31.7 U	31.4 U	NC	31.4 U	32.7 U	NC	53.9 U	22 U	NC	30.8 U
PCB024	27.3	19.1 U	NC	28.5	19.9 U	NC	32.8 U	13.4 U	NC	18.8 U
PCB025	301	56.5	NC	326	69.5	NC	110	19.6 U	NC	121
PCB026 & 029	773	145	NC	787	170	NC	284	45.2	NC	282
PCB027	162	31.9	NC	294	61.7	NC	97.8	19 U	NC	127
PCB031	3,140	616	NC	3,100	717	NC	1,010	183 U	NC	930
PCB032	497	97.1 U	NC	1,420	283	NC	216	40.1 U	NC	326
PCB034	22.8 U	22.6 U	NC	24.2	23.5 U	NC	38.7 U	15.8 U	NC	22.1 U
PCB035	23.7 U	23.4 U	NC	23.4 U	24.4 U	NC	40.2 U	16.4 U	NC	23 U
PCB036	25.1 U	24.9 U	NC	24.9 U	25.8 U	NC	42.6 U	17.4 U	NC	24.4 U
PCB037	930	195	NC	482	195	NC	142	46.1	NC	239
PCB038	18.2 U	18 U	NC	23	18.7 U	NC	30.9 U	12.6 U	NC	17.7 U
PCB039	22.8 U	22.6 U	NC	22.6 U	23.5 U	NC	38.7 U	15.8 U	NC	22.1 U
PCB040 & 041 & 071	2,620	501	NC	10,600	1,920	NC	1,120	204	NC	1,430
PCB042	2,160	403	NC	6,110	1,100	NC	878	145	NC	725
PCB043 & 073	226	40.7	NC	672	119	NC	174	27.5	NC	161
PCB044 & 047 & 065	10,600	1,890	NC	29,000	5,170	NC	5,550	928	NC	10,500
PCB045 & 051	1,420	256	NC	3,010	516	NC	592	89.2	NC	1,760
PCB046	273	71.4 U	NC	669	120	NC	123 U	50 U	NC	145
PCB048	1,240	223	NC	3,530	648	NC	513	90.2	NC	433
PCB049 & 069	7,030	1,270	NC	21,100	3,770	NC	3,540	565	NC	5,330

PCB050 & 053	PCB050 & 053	908	159	NC	2,730	477	NC	432
PCB052	PCB052	11,400	2,140	NC	35,700	6,610	NC	5,660
PCB054	PCB054	120	22.5	NC	99.7	21.1 U	NC	109
PCB055	PCB055	21.6 U	21.4 U	NC	21.4 U	22.3 U	NC	36.8 U
PCB056	PCB056	1,990	375	NC	5,910	1,090	NC	889
PCB057	PCB057	47.7	18 U	NC	87.1	18.7 U	NC	30.9 U
PCB058	PCB058	30.6	19.1 U	NC	54.7	19.9 U	NC	32.8 U
PCB059 & 062 & 075	PCB059 & 062 & 075	872	214 U	NC	2,190	369	NC	368 U
PCB060	PCB060	2,010	377	NC	7,940	1,440	NC	1,270
PCB061 & 070 & 074 & 076	PCB061 & 070 & 074 & 076	12,900	2,340	NC	36,600	6,250	NC	6,320
PCB063	PCB063	511	88.5	NC	1,390	228	NC	269
PCB064	PCB064	4,320	801	NC	14,600	2,600	NC	1,490
PCB066	PCB066	9,640	1,770	NC	34,300	6,030	NC	6,490
PCB067	PCB067	226	41.7	NC	366	63.6	NC	107
PCB068	PCB068	109	57.1 U	NC	128	59.4 U	NC	98 U
PCB072	PCB072	134	22.9	NC	232	38.6	NC	85.8
PCB073	PCB073	31.7 U	31.4 U	NC	31.4 U	32.7 U	NC	53.9 U
PCB077	PCB077	625	111	NC	1,140	198	NC	276
PCB078	PCB078	13.3 U	13.1 U	NC	13.1 U	13.7 U	NC	22.5 U
PCB079	PCB079	75.9	22.3 U	NC	260	51.2	NC	47
PCB080	PCB080	21.3 U	21.1 U	NC	21.1 U	22 U	NC	36.3 U
PCB081	PCB081	46	25.7 U	NC	85.9	26.7 U	NC	44.1 U
PCB082	PCB082	1,010	185	NC	2,710	480	NC	663
PCB083	PCB083	739	111	NC	1,580	274	NC	489
PCB084	PCB084	2,620	467	NC	4,910	809	NC	1,230
PCB085 & 117 & 116	PCB085 & 117 & 116	3,450	591	NC	10,700	1,980	NC	3,710
PCB086 & 087 & 097 & 108 & 119 & 12	PCB086 & 087 & 097 & 108 & 119 & 12	8,710	1,550	NC	22,800	4,090	NC	7,290
PCB088 & 091	PCB088 & 091	2,380	407	NC	5,020	818	NC	1,170
PCB089	PCB089	78.5	16.6 U	NC	352	62.7	NC	48.4
PCB090 & 101 & 113	PCB090 & 101 & 113	17,000	2,980	NC	38,200	6,690	NC	16,300
PCB092	PCB092	3,540	602	NC	7,800	1,310	NC	3,430
PCB093 & 098 & 100 & 102	PCB093 & 098 & 100 & 102	983	329 U	NC	1,620	342 U	NC	942
PCB094	PCB094	79.5	71.4 U	NC	140	74.3 U	NC	123 U
PCB095	PCB095	9,910	1,770	NC	18,200	3,010	NC	5,240
PCB096	PCB096	91.7	32 U	NC	254	42.7	NC	54.9 U
PCB099	PCB099	9,460	1,660	NC	25,000	4,170	NC	11,600
PCB103	PCB103	281	47.9	NC	321	57	NC	244
PCB104	PCB104	43 U	42.6 U	NC	42.6 U	44.3 U	NC	73 U
PCB105	PCB105	6,610	1,180	NC	19,400	3,440	NC	7,370
PCB106	PCB106	42.7 U	42.3 U	NC	42.3 U	44 U	NC	72.5 U
PCB107 & 124	PCB107 & 124	509	87.2	NC	1,050	182	NC	490
PCB109	PCB109	1,360	232	NC	2,950	501	NC	1,660
PCB110 & 115	PCB110 & 115	14,000	2,590	NC	32,900	5,890	NC	11,900
PCB111	PCB111	21.3 U	21.1 U	NC	23.5	22 U	NC	53.1
PCB112	PCB112	31.7 U	31.4 U	NC	31.4 U	32.7 U	NC	53.9 U
PCB114	PCB114	508	89.3	NC	1,390	251	NC	616
PCB118	PCB118	19,800	3,520	NC	44,900	8,110	NC	23,100
PCB120	PCB120	90.7	71.4 U	NC	113	74.3 U	NC	170
PCB121	PCB121	20.9	19.7 U	NC	19.7 U	20.5 U	NC	38.9
PCB122	PCB122	117	26 U	NC	217	42.1	NC	77.4
PCB123	PCB123	340	57.9	NC	918	162	NC	508
PCB126	PCB126	41.5	38.6 U	NC	77.3	40.1 U	NC	66.2 U
PCB127	PCB127	39.5	24.6 U	NC	74.1	25.5 U	NC	42.2
PCB128 & 166	PCB128 & 166	3,140	515	NC	5,890	968	NC	4,580

PCB129 & 138 & 163	PCB129 & 138 & 163	29,500	4,780	NC	43,200	6,920	NC	45,700
PCB130	PCB130	1,490	238	NC	2,090	323	NC	1,600
PCB131	PCB131	149	26.8	NC	206	32.5	NC	140
PCB132	PCB132	4,270	722	NC	5,260	799	NC	3,590
PCB133	PCB133	521	83.6	NC	648	98	NC	1,260
PCB134 & 143	PCB134 & 143	734	143 U	NC	1,010	149	NC	710
PCB135 & 151	PCB135 & 151	7,610	1,300	NC	8,990	1,390	NC	10,400
PCB136	PCB136	1,790	307	NC	2,270	357	NC	1,650
PCB137	PCB137	1,480	226	NC	2,180	364	NC	1,760
PCB139 & 140	PCB139 & 140	428	68.8	NC	790	117	NC	662
PCB141	PCB141	4,100	692	NC	6,440	982	NC	5,440
PCB142	PCB142	24.5 U	24.3 U	NC	24.3 U	25.2 U	NC	41.7 U
PCB144	PCB144	897	145	NC	1,160	172	NC	825
PCB145	PCB145	27.1 U	26.9 U	NC	26.9 U	27.9 U	NC	46.1 U
PCB146	PCB146	5,070	818	NC	6,360	970	NC	11,700
PCB147 & 149	PCB147 & 149	15,200	2,590	NC	16,000	2,430	NC	13,200
PCB148	PCB148	69.1	42.9 U	NC	70.6	44.6 U	NC	108
PCB150	PCB150	47	30.9 U	NC	39.3	32.1 U	NC	52.9 U
PCB152	PCB152	33.8	33.4 U	NC	35.5	34.8 U	NC	57.4 U
PCB153 & 168	PCB153 & 168	29,000	4,640	NC	36,000	5,690	NC	52,400
PCB154	PCB154	467	77.1	NC	572	84.8	NC	860
PCB155	PCB155	35.5	35.1 U	NC	35.1 U	36.5 U	NC	60.3 U
PCB156 & 157	PCB156 & 157	2,920	502	NC	4,500	804	NC	4,660
PCB158	PCB158	2,300	367	NC	4,030	652	NC	3,290
PCB159	PCB159	72.1 U	71.4 U	NC	71.4 U	74.3 U	NC	123 U
PCB160	PCB160	2.6 U	2.57 U	NC	2.57 U	2.67 U	NC	4.41 U
PCB161	PCB161	34.3 U	34 U	NC	34 U	35.3 U	NC	58.3 U
PCB162	PCB162	92.4	24.1 U	NC	150	25.1 U	NC	92.6
PCB164	PCB164	1,210	211	NC	1,970	301	NC	1,870
PCB165	PCB165	34 U	33.7 U	NC	33.7 U	35 U	NC	68.5
PCB167	PCB167	1,210	201	NC	1,510	256	NC	1,710
PCB169	PCB169	84.7	22.6 U	NC	22.6 J	23.5 U	NC	38.8 U
PCB170	PCB170	4,140	697	NC	4,090	827	NC	7,800
PCB171 & 173	PCB171 & 173	1,520	241	NC	1,660	290	NC	2,610
PCB172	PCB172	976	149	NC	954	167	NC	1,600
PCB174	PCB174	3,640	603	NC	3,060	524	NC	3,400
PCB175	PCB175	223	42 U	NC	215	43.7 U	NC	318
PCB176	PCB176	406	63.2	NC	324	54.4 U	NC	361
PCB177	PCB177	2,970	484	NC	2,660	455	NC	3,730
PCB178	PCB178	1,500	231	NC	1,460	236	NC	2,910
PCB179	PCB179	1,740	286	NC	1,550	258	NC	2,070
PCB180 & 193	PCB180 & 193	13,600	2,260	NC	11,200	2,190	NC	26,200
PCB181	PCB181	65.9	38.3 U	NC	68.7	39.8 U	NC	103
PCB182	PCB182	37.1	26 U	NC	44.4	27 U	NC	44.6 U
PCB183 & 185	PCB183 & 185	4,410	701	NC	4,220	718	NC	7,960
PCB184	PCB184	31.4 U	31.1 U	NC	31.1 U	32.4 U	NC	53.4 U
PCB186	PCB186	45.6 U	45.1 U	NC	45.1 U	46.9 U	NC	77.5 U
PCB187	PCB187	10,200	1,640	NC	8,860	1,480	NC	23,700
PCB188	PCB188	45.6 U	36.3 U	NC	36.3 U	37.7 U	NC	62.3 U
PCB189	PCB189	191	30.1	NC	185	38	NC	434
PCB190	PCB190	442	86.8	NC	432	120	NC	1,490
PCB191	PCB191	209	36.3 U	NC	208	37.7 U	NC	375
PCB192	PCB192	25.4 U	25.1 U	NC	25.1 U	26.1 U	NC	43.1 U
PCB194	PCB194	1,540	286	NC	1,210	252	NC	3,570

PCB195	PCB195	708	118	NC	619	115	NC	1,650
PCB196	PCB196	918	163	NC	731	146	NC	1,920
PCB197 & 200	PCB197 & 200	260	59.3 U	NC	198	61.7 U	NC	367
PCB198 & 199	PCB198 & 199	1,960	391	NC	1,450	334	NC	5,280
PCB201	PCB201	328	51.3	NC	263	43.4	NC	595
PCB202	PCB202	691	111	NC	578	106	NC	1,340
PCB203	PCB203	1,570	264	NC	1,300	236	NC	2,860
PCB204	PCB204	35.2 U	34.8 U	NC	34.8 U	36.2 U	NC	59.8 U
PCB205	PCB205	91.7	34.7 U	NC	81	36 U	NC	223
PCB206	PCB206	710	142	NC	496	102	NC	2,560
PCB207	PCB207	113	68.6 U	NC	78.8	71.3 U	NC	313
PCB208	PCB208	300	69.8 U	NC	194	72.6 U	NC	866
PCB209	PCB209	316	65.3	NC	208	51.3	NC	966

Monochlorobiphenyl homologs	Monochlorobiphenyl homologs	27.7 T	26.6 UT	NC	72.8 T	27.5 T	NC	45.6 UT
Dichlorobiphenyl homologs	Dichlorobiphenyl homologs	1,390 T	440 T	NC	1,780 JT	549 T	NC	533 T
Trichlorobiphenyl homologs	Trichlorobiphenyl homologs	17,600 T	3,450 T	NC	20,600 T	4,780 T	NC	6,470 T
Tetrachlorobiphenyl homologs	Tetrachlorobiphenyl homologs	71,600 T	13,100 T	NC	219,000 T	38,900 T	NC	36,200 T
Pentachlorobiphenyl homologs	Pentachlorobiphenyl homologs	104,000 T	18,500 T	NC	244,000 T	42,700 T	NC	98,500 T
Hexachlorobiphenyl homologs	Hexachlorobiphenyl homologs	114,000 T	18,700 T	NC	151,000 JT	24,000 T	NC	168,000 T
Heptachlorobiphenyl homologs	Heptachlorobiphenyl homologs	46,300 T	7,580 T	NC	41,200 T	7,440 T	NC	85,100 T
Octachlorobiphenyl homologs	Octachlorobiphenyl homologs	8,070 T	1,430 T	NC	6,430 T	1,280 T	NC	17,800 T
Nonachlorobiphenyl homologs	Nonachlorobiphenyl homologs	1,120 T	211 T	NC	769 T	174 T	NC	3,740 T
Total PCB Congeners (RI Calc; ND=0)	Total PCB Congeners (RI Calc; ND=0)	364,000 JT	62,300 JT	235,000 JT	685,000 JT	119,000 JT	412,000 JT	417,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	Total PCB Congeners (RA Calc; ND=0.5 RDL)	364,000 JT	63,500 JT	235,000 JT	685,000 JT	120,000 JT	413,000 JT	418,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	7.71 T	0.179 JT	4.49 JT	10.7 JT	0.412 JT	5.76 JT	1.18 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	7.71 T	2.45 JT	5.46 JT	10.7 JT	2.77 JT	6.9 JT	5.08 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	41.3 T	8.99 JT	27.5 JT	76.3 JT	13.8 JT	46.2 JT	20.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.455 T	0.142 JT	0.321 JT	0.909 JT	0.193 JT	0.564 JT	0.397 JT
% Lipids	% Lipids	10.6	1.87	NC	9.95	1.98	NC	6.58

Notes:

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

EPA1-SB05E-02 LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02			
Tissue	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet
X-coordinate	7621025.9515	7621025.9515	7621611.17954	7621611.17954	7621611.17954	7622425.67887	7622425.67887	7622425.67887	7620011.50418	7620011.50418
Y-coordinate	710385.59352	710385.59352	709354.49337	709354.49337	709354.49337	708300.12878	708300.12878	708300.12878	709612.51266	709612.51266
RiverMile	5.2	5.2	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:54	9:54	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50
Sample Mass (g)	226.9	479.12	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59
PCB001	15 U	NC	21 U	22.1 U	NC	32.9 U	35 U	NC	27.3	21.8 U
PCB002	18.6 U	NC	26.1 U	27.4 U	NC	40.8 U	43.5 U	NC	27.4 U	27.1 U
PCB003	9.8 U	NC	16.9	14.4 U	NC	21.5 U	22.9 U	NC	15.9	14.3 U
PCB004	46.5	NC	500	154	NC	405	83.1	NC	606	183
PCB005	18.6 U	NC	26.1 U	27.4 U	NC	40.8 U	43.5 U	NC	27.4 U	27.1 U
PCB006	17.4 U	NC	48.2	25.6 U	NC	44.8	40.7 U	NC	91.1	27.9
PCB007	23.6 U	NC	33.1 U	34.7 U	NC	51.8 U	55.1 U	NC	34.7 U	34.4 U
PCB008	46.7 U	NC	204	95	NC	182	58.1	NC	447	138
PCB009	11.4 U	NC	16 U	16.8 U	NC	25 U	26.6 U	NC	19.3 J	16.6 U
PCB010	12.4 U	NC	19.5	18.2 U	NC	27.2 U	29 U	NC	32.3	18.1 U
PCB011	154	NC	329	182	NC	308	228 U	NC	292	177
PCB012 & 013	16.6 U	NC	23.3 U	24.4 U	NC	36.4 U	38.8 U	NC	24.4 U	24.2 U
PCB014	18.2 U	NC	25.5 U	26.8 U	NC	39.9 U	42.5 U	NC	26.8 U	26.5 U
PCB015	27.4 U	NC	115	59.9	NC	79.5	64 U	NC	111	48.3
PCB016	36.4	NC	167	113	NC	224	51.4 U	NC	279	91.6
PCB017	67.6	NC	587	250	NC	627	114	NC	803	242
PCB018 & 030	92.1 U	NC	528 U	314	NC	737	149 U	NC	892	294
PCB019	78.7	NC	822	250	NC	712	142	NC	549	173
PCB020 & 028	348 U	NC	1,840	1,340	NC	3,650	423	NC	4,250	1,290
PCB021 & 033	90.2 U	NC	366	231	NC	444	211 U	NC	775	268
PCB022	79.3	NC	331	310	NC	781	87.9	NC	711	220
PCB023	22 U	NC	30.8 U	32.4 U	NC	48.2 U	51.4 U	NC	32.4 U	32 U
PCB024	13.4 U	NC	18.8 U	19.7 U	NC	29.4 U	31.3 U	NC	19.7 U	19.5 U
PCB025	19.6 U	NC	121	86.7	NC	233	45.8 U	NC	229	70.3
PCB026 & 029	45.2	NC	282	195	NC	516	98.1 U	NC	608	181
PCB027	19 U	NC	127	42.8	NC	116	44.4 U	NC	128	41.9
PCB031	183 U	NC	930	812	NC	2,080	267	NC	1,980	620
PCB032	40.1 U	NC	326	126	NC	288	66.7	NC	523	158 U
PCB034	15.8 U	NC	22.1 U	23.2 U	NC	34.6 U	36.9 U	NC	23.2 U	23 U
PCB035	16.4 U	NC	23 U	24.1 U	NC	36 U	38.3 U	NC	24.1 U	23.9 U
PCB036	17.4 U	NC	24.4 U	25.6 U	NC	38.2 U	40.7 U	NC	25.6 U	25.3 U
PCB037	46.1	NC	239	148	NC	414	50.8	NC	180	75.3
PCB038	12.6 U	NC	17.7 U	18.5 U	NC	27.6 U	29.4 U	NC	18.5 U	18.3 U
PCB039	15.8 U	NC	22.1 U	23.2 U	NC	34.6 U	36.9 U	NC	23.2 U	23 U
PCB040 & 041 & 071	204	NC	1,430	659	NC	1,850	274	NC	2,620	761
PCB042	145	NC	725	602	NC	1,740	167	NC	1,860	532
PCB043 & 073	27.5	NC	161	66.9	NC	194	51.4 U	NC	205	63.1
PCB044 & 047 & 065	928	NC	10,500	3,170	NC	9,620	1,090	NC	11,100	3,260
PCB045 & 051	89.2	NC	1,760	439	NC	1,200	140	NC	1,000	301
PCB046	50 U	NC	145	73.5 U	NC	181	117 U	NC	159	72.8 U
PCB048	90.2	NC	433	288	NC	816	91.6	NC	1,240	376
PCB049 & 069	565	NC	5,330	2,190	NC	6,330	754	NC	8,400	2,530

PCB050 & 053	63.7	NC	1,080	226	NC	597	103	NC	857	259
PCB052	873	NC	7,150	3,270	NC	9,860	1,190	NC	12,500	3,730
PCB054	16.3	NC	232	45.6	NC	136	33.2 U	NC	105	31
PCB055	15 U	NC	21 U	22.1 U	NC	32.9 U	35 U	NC	22.1 U	21.8 U
PCB056	156	NC	611	656	NC	2,050	152	NC	1,390	432
PCB057	12.6 U	NC	22.7	18.5 U	NC	35.9	29.4 U	NC	54.8	18.3 U
PCB058	13.4 U	NC	23.3	19.7 U	NC	34.6	31.3 U	NC	37.9	19.5 U
PCB059 & 062 & 075	150 U	NC	427	221 U	NC	674	350 U	NC	801	235
PCB060	207	NC	710	509	NC	1,670	166	NC	2,290	687
PCB061 & 070 & 074 & 076	1,180	NC	6,190	3,640	NC	11,600	1,210	NC	14,000	4,160
PCB063	53.1	NC	278	120	NC	393	49.8	NC	657	189
PCB064	289	NC	1,450	1,180	NC	3,500	352	NC	3,900	1,150
PCB066	1,030	NC	5,170	2,500	NC	7,780	910	NC	12,200	3,630
PCB067	19.6	NC	99	64.3	NC	210	28 U	NC	199	56.8
PCB068	40 U	NC	181	58.8 U	NC	112	93.5 U	NC	132	58.3 U
PCB072	15.5	NC	137	43.3	NC	133	21 U	NC	187	53.6
PCB073	22 U	NC	30.8 U	32.4 U	NC	194	0 U	NC	32.4 U	21.8 U
PCB077	42.5	NC	249	149	NC	535	48.7	NC	486	148
PCB078	9.2 U	NC	12.9 U	13.5 U	NC	20.2 U	21.5 U	NC	13.5 U	13.4 U
PCB079	15.6 U	NC	93.8	30.8	NC	94.8	36.4 U	NC	92.1	34.8
PCB080	14.8 U	NC	20.7 U	21.8 U	NC	32.5 U	34.6 U	NC	21.8 U	21.6 U
PCB081	18 U	NC	25.7	26.5 U	NC	53.6	42.1 U	NC	38.7	26.2 U
PCB082	103	NC	612	330	NC	1,080	83.2	NC	911	260
PCB083	74.2	NC	752	256	NC	632	67.2	NC	828	225
PCB084	200	NC	1,850	904	NC	2,660	215	NC	2,040	579
PCB085 & 117 & 116	545	NC	3,120	1,010	NC	3,290	444	NC	6,130	1,780
PCB086 & 087 & 097 & 108 & 119 & 125	1,100	NC	7,430	2,900	NC	9,420	887	NC	10,800	3,130
PCB088 & 091	228	NC	2,130	846	NC	2,530	236	NC	2,400	675
PCB089	11.6 U	NC	52.8	25.8	NC	72.5	27.1 U	NC	84.9	25.5
PCB090 & 101 & 113	2,380	NC	20,100	5,580	NC	18,000	1,970	NC	22,400	6,390
PCB092	496	NC	4,520	1,140	NC	3,560	416	NC	4,990	1,410
PCB093 & 098 & 100 & 102	230 U	NC	1,970	343	NC	1,070	537 U	NC	1,130	335 U
PCB094	50 U	NC	129	73.5 U	NC	110 U	117 U	NC	73.5 U	72.8 U
PCB095	955	NC	10,100	3,090	NC	8,970	1,000	NC	10,000	2,860
PCB096	22.4 U	NC	156	32.9 U	NC	85.4	52.3 U	NC	117	33.3
PCB099	1,680	NC	12,700	2,810	NC	9,690	1,640	NC	16,700	4,740
PCB103	40.7	NC	625	116	NC	331	43 U	NC	327	92.9
PCB104	29.8 U	NC	41.8 U	43.8 U	NC	65.4 U	69.6 U	NC	43.8 U	43.4 U
PCB105	1,070	NC	5,330	1,760	NC	6,110	755	NC	12,100	3,560
PCB106	29.6 U	NC	41.5 U	43.5 U	NC	64.9 U	69.2 U	NC	43.5 U	43.1 U
PCB107 & 124	65.5	NC	349	146	NC	534	50.9 U	NC	697	195
PCB109	230	NC	1,500	373	NC	1,300	206	NC	2,250	631
PCB110 & 115	1,730	NC	11,500	4,710	NC	15,300	1,520	NC	16,700	4,840
PCB111	14.8 U	NC	67.3	21.8 U	NC	32.5 U	34.6 U	NC	40.1	21.6 U
PCB112	22 U	NC	30.8 U	32.4 U	NC	48.2 U	51.4 U	NC	32.4 U	32 U
PCB114	83.1	NC	427	120	NC	429	57.5 U	NC	983	275
PCB118	3,180	NC	23,300	5,310	NC	18,600	2,740	NC	36,900	10,500
PCB120	50 U	NC	235	73.5 U	NC	110 U	117 U	NC	139	72.8 U
PCB121	13.8 U	NC	56.6	20.3 U	NC	30.3 U	32.2 U	NC	31.8	20.1 U
PCB122	18.2 U	NC	25.5 U	35.5	NC	141	42.5 U	NC	116	32.4
PCB123	62.9	NC	303	89.7	NC	426	56.2	NC	607	164
PCB126	27 U	NC	49.7	39.7 U	NC	59.2 U	63.1 U	NC	67.4	39.3 U
PCB127	17.2 U	NC	67.7	25.3 U	NC	37.7 U	40.2 U	NC	87.3	33.9
PCB128 & 166	571	NC	5,530	822	NC	3,020	406	NC	6,300	1,670

PCB129 & 138 & 163	5,500	NC	74,900	8,120	NC	29,800	4,420	NC	54,200	13,900
PCB130	196	NC	2,010	407	NC	1,530	157	NC	2,030	502
PCB131	20.6	NC	155	56.5	NC	213	39.7 U	NC	159	41.7
PCB132	509	NC	4,330	1,440	NC	5,140	416	NC	3,990	1,000
PCB133	152	NC	1,510	149	NC	580	153	NC	985	238
PCB134 & 143	100 U	NC	937	236	NC	835	234 U	NC	832	199
PCB135 & 151	1,370	NC	16,100	2,420	NC	8,010	1,090	NC	9,400	2,390
PCB136	224	NC	3,120	622	NC	1,880	216	NC	1,990	513
PCB137	215	NC	2,100	326	NC	1,070	185	NC	3,150	767
PCB139 & 140	86.8	NC	729	114	NC	426	67.3	NC	900	214
PCB141	668	NC	10,400	1,220	NC	4,310	428	NC	6,180	1,510
PCB142	17 U	NC	23.8 U	25 U	NC	37.3 U	39.7 U	NC	25 U	24.8 U
PCB144	109	NC	1,340	264	NC	906	96.5	NC	941	249
PCB145	18.8 U	NC	26.4 U	27.6 U	NC	41.2 U	43.9 U	NC	27.6 U	27.4 U
PCB146	1,410	NC	14,100	1,470	NC	5,770	1,320	NC	8,530	2,140
PCB147 & 149	1,850	NC	16,200	5,150	NC	17,300	1,630	NC	12,700	3,320
PCB148	30 U	NC	168	44.1 U	NC	82.5	70.1 U	NC	93.2	43.7 U
PCB150	21.6 U	NC	72.8	31.8 U	NC	63.5	50.5 U	NC	39.5	31.5 U
PCB152	23.4 U	NC	93.8	34.4 U	NC	51.3 U	54.7 U	NC	34.7	34.1 U
PCB153 & 168	6,210	NC	93,100	8,280	NC	31,000	5,500	NC	55,900	14,000
PCB154	101	NC	1,510	153	NC	538	103	NC	850	220
PCB155	24.6 U	NC	34.5 U	36.2 U	NC	53.9 U	57.5 U	NC	36.2 U	35.8 U
PCB156 & 157	599	NC	6,410	680	NC	2,500	457	NC	5,980	1,700
PCB158	398	NC	6,100	2.65	NC	2,210	319	NC	4,650	1,180
PCB159	50 U	NC	91.6	73.5 U	NC	110 U	117 U	NC	73.5 U	72.8 U
PCB160	1.8 U	NC	2.52 U	2.65 U	NC	3.95 U	4.21 U	NC	2.65 U	2.62 U
PCB161	23.8 U	NC	33.4 U	35 U	NC	52.2 U	55.6 U	NC	35 U	34.7 U
PCB162	16.9 U	NC	201	24.9 U	NC	73.5	39.5 U	NC	158	40.3
PCB164	225	NC	2,200	355	NC	1,410	150	NC	1,540	394
PCB165	23.6 U	NC	82	34.7 U	NC	51.8 U	55.1 U	NC	44.8	34.4 U
PCB167	205	NC	2,440	275	NC	1,120	177	NC	2,020	567
PCB169	15.8 U	NC	318	0 J	NC	57.5 U	37 U	NC	130	37.8 J
PCB170	911	NC	20,100	1,200	NC	4,320	856	NC	7,730	2,420
PCB171 & 173	312	NC	7,360	413	NC	1,420	257	NC	2,870	766
PCB172	172	NC	3,850	261	NC	943	167	NC	1,540	426
PCB174	420	NC	4,550	1,110	NC	3,630	333	NC	2,750	711
PCB175	37.4	NC	633	62.3	NC	212	68.7 U	NC	272	74.4
PCB176	44.6	NC	470	134	NC	478	85.5 U	NC	297	77
PCB177	446	NC	5,660	885	NC	2,990	418	NC	2,900	753
PCB178	317	NC	4,940	435	NC	1,480	339	NC	2,320	610
PCB179	265	NC	3,090	554	NC	1,870	199	NC	1,730	459
PCB180 & 193	2,970	NC	61,700	4,100	NC	13,500	4,080	NC	25,100	7,560
PCB181	26.8 U	NC	174	39.4 U	NC	58.8 U	62.6 U	NC	133	39 U
PCB182	18.2 U	NC	88.9	26.8 U	NC	39.9 U	42.5 U	NC	83	26.5 U
PCB183 & 185	921	NC	18,200	1,280	NC	4,660	798	NC	7,270	1,970
PCB184	21.8 U	NC	30.6 U	32.1 U	NC	47.8 U	50.9 U	NC	32.1 U	31.7 U
PCB186	31.6 U	NC	44.3 U	46.5 U	NC	69.3 U	73.8 U	NC	46.5 U	46 U
PCB187	2,490	NC	31,200	2,910	NC	10,100	2,830	NC	14,600	3,900
PCB188	25.4 U	NC	58.4	37.4 U	NC	55.7 U	59.3 U	NC	37.4 U	37 U
PCB189	46	NC	1,010	48.7	NC	195	45.9	NC	376	104
PCB190	176	NC	2,130	144	NC	650	162	NC	897	348
PCB191	41.6	NC	1,180	58.7	NC	214	59.3 U	NC	439	120
PCB192	17.6 U	NC	24.7 U	25.9 U	NC	38.6 U	41.1 U	NC	25.9 U	25.6 U
PCB194	343	NC	7,960	458	NC	1,670	1,140	NC	3,150	1,020

PCB195	175	NC	4,150	196	NC	725	326	NC	1,450	447
PCB196	203	NC	4,660	277	NC	1,010	603	NC	1,670	572
PCB197 & 200	41.5 U	NC	672	77	NC	272	97 U	NC	350	95
PCB198 & 199	537	NC	6,070	679	NC	2,610	1,440	NC	2,860	1,000
PCB201	63.5	NC	1,020	85.9	NC	310	143	NC	450	124
PCB202	141	NC	1,940	195	NC	723	269	NC	1,150	333
PCB203	310	NC	5,910	442	NC	1,620	589	NC	3,190	964
PCB204	24.4 U	NC	34.2 U	35.9 U	NC	53.5 U	57 U	NC	35.9 U	35.5 U
PCB205	24.3 U	NC	528	35.7 U	NC	97.8	56.7 U	NC	196	57.7
PCB206	294	NC	2,090	340	NC	1,200	1,250	NC	1,380	450
PCB207	48 U	NC	377	70.6 U	NC	147	194	NC	221	70.1
PCB208	97.2	NC	563	169	NC	597	458	NC	405	128
PCB209	151	NC	618	201	NC	612	601	NC	573	173

Monochlorobiphenyl homologs	18.6 UT	NC	27.4 T	27.4 UT	NC	40.8 UT	43.5 UT	NC	43.2 T	27.1 UT
Dichlorobiphenyl homologs	258 T	NC	1,220 T	521 T	NC	1,050 T	335 T	NC	1,600 JT	592 T
Trichlorobiphenyl homologs	778 T	NC	6,440 T	4,260 T	NC	10,900 T	1,520 T	NC	11,900 T	3,690 T
Tetrachlorobiphenyl homologs	6,160 T	NC	44,600 T	20,100 T	NC	61,600 T	7,110 T	NC	76,500 T	22,700 T
Pentachlorobiphenyl homologs	14,500 T	NC	109,000 T	32,100 T	NC	104,000 T	12,900 T	NC	150,000 T	42,700 T
Hexachlorobiphenyl homologs	20,800 T	NC	266,000 T	32,700 JT	NC	120,000 T	17,700 T	NC	184,000 T	46,900 JT
Heptachlorobiphenyl homologs	9,620 T	NC	166,000 T	13,700 T	NC	46,800 T	10,700 T	NC	71,300 T	20,400 T
Octachlorobiphenyl homologs	1,810 T	NC	32,900 T	2,430 T	NC	9,040 T	4,590 T	NC	14,500 T	4,610 T
Nonachlorobiphenyl homologs	415 T	NC	3,030 T	544 T	NC	1,940 T	1,900 T	NC	2,010 T	648 T
Total PCB Congeners (RI Calc; ND=0)	53,300 JT	245,000 JT	631,000 JT	106,000 JT	400,000 JT	356,000 JT	55,000 JT	218,000 JT	512,000 JT	142,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	54,400 JT	246,000 JT	631,000 JT	106,000 JT	400,000 JT	356,000 JT	57,300 JT	220,000 JT	512,000 JT	142,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.162 JT	0.697 JT	15.7 T	0.263 JT	8.92 JT	0.951 JT	0.132 JT	0.576 JT	12.5 T	1.65 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	1.75 JT	3.5 JT	15.7 T	2.25 JT	9.79 JT	4.77 JT	3.85 JT	4.35 JT	12.5 T	3.62 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	4.59 JT	13.2 JT	21.8 T	11.1 JT	17.1 JT	36.2 JT	7.87 JT	23.2 JT	37.3 T	11.4 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.103 JT	0.258 JT	0.498 T	0.162 JT	0.35 JT	0.377 JT	0.195 JT	0.294 JT	0.706 T	0.206 JT
% Lipids	0.468	NC	10.7	2.78	NC	9.67	1.67	NC	9.19	2.87

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

PA1-SB05W-02	Location ID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02			
	Tissue	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
	X-coordinate	7620011.50418	7620605.96737	7620605.96737	7620605.96737	7622425.67887	7622425.67887	7622425.67887	7625302.7482	7625302.7482	7625302.7482
	Y-coordinate	709612.51266	708796.51539	708796.51539	708796.51539	708300.12878	708300.12878	708300.12878	706147.43780	706147.43780	706147.43780
	RiverMile	5.2	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
	Sample Date	2-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
	Sample Time	12:50	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
	Sample Mass (g)	763.5	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
	PCB001	NC	14.2 U	14.9 U	NC	36.8 U	36.4 U	NC	35.4 U	22.1 U	NC
	PCB002	NC	17.5 U	18.4 U	NC	45.6 U	45.1 U	NC	43.9 U	27.4 U	NC
	PCB003	NC	9.25 U	9.7 U	NC	24 U	23.8 U	NC	23.1 U	14.4 U	NC
	PCB004	NC	299	63.6	NC	300	73.8 U	NC	1,080	346	NC
	PCB005	NC	17.5 U	18.4 U	NC	45.6 U	45.1 U	NC	43.9 U	27.4 U	NC
	PCB006	NC	45.9	17.2 U	NC	46.8	42.2 U	NC	41 U	25.6 U	NC
	PCB007	NC	22.3 U	23.4 U	NC	57.8 U	57.3 U	NC	55.7 U	34.7 U	NC
	PCB008	NC	192 U	55.4 U	NC	169	58.8	NC	148	54.9	NC
	PCB009	NC	11.9	11.3 U	NC	27.9 U	27.7 U	NC	26.9 U	16.8 U	NC
	PCB010	NC	11.7 U	12.3 U	NC	30.4 U	30.1 U	NC	74.8	22.2	NC
	PCB011	NC	212	125	NC	285	237 U	NC	347	180	NC
	PCB012 & 013	NC	15.7 U	16.4 U	NC	40.7 U	40.3 U	NC	39.2 U	24.4 U	NC
	PCB014	NC	17.2 U	18 U	NC	44.6 U	44.2 U	NC	42.9 U	26.8 U	NC
	PCB015	NC	77.2	28.3	NC	70.2	66.5 U	NC	70	41	NC
	PCB016	NC	163	40.4	NC	137	53.4 U	NC	111	46.7	NC
	PCB017	NC	410	91.1	NC	408	99.2	NC	513	164	NC
	PCB018 & 030	NC	517	118	NC	504	127 U	NC	404	126 U	NC
	PCB019	NC	454	83.8	NC	431	94.3	NC	2,210	625	NC
	PCB020 & 028	NC	2,070	437 U	NC	1,940	449	NC	1,580	515	NC
	PCB021 & 033	NC	283	89.3 U	NC	376	219 U	NC	249	133 U	NC
	PCB022	NC	423	98.7	NC	341	89.8	NC	211	93.5	NC
	PCB023	NC	20.8 U	21.8 U	NC	53.9 U	53.4 U	NC	51.9 U	32.4 U	NC
	PCB024	NC	12.6 U	13.3 U	NC	32.8 U	32.5 U	NC	31.6 U	19.7 U	NC
	PCB025	NC	131	28.2	NC	102	47.6 U	NC	86	29.3	NC
	PCB026 & 029	NC	303	63.2	NC	283	102 U	NC	206	70.3	NC
	PCB027	NC	85.9	18.8 U	NC	79.1	46.1 U	NC	189	53	NC
	PCB031	NC	1,130	244 U	NC	914	232	NC	613	229	NC
	PCB032	NC	212	48.6 U	NC	238	59.2	NC	233	77.9 U	NC
	PCB034	NC	14.9 U	15.6 U	NC	38.7 U	38.3 U	NC	37.3 U	23.2 U	NC
	PCB035	NC	15.5 U	16.2 U	NC	40.2 U	39.8 U	NC	38.7 U	24.1 U	NC
	PCB036	NC	16.4 U	17.2 U	NC	42.6 U	42.2 U	NC	41 U	25.6 U	NC
	PCB037	NC	281	65.4	NC	151	48.7	NC	150	66.8	NC
	PCB038	NC	11.9 U	12.5 U	NC	30.9 U	30.6 U	NC	29.7 U	18.5 U	NC
	PCB039	NC	14.9 U	15.6 U	NC	38.7 U	38.3 U	NC	37.3 U	23.2 U	NC
	PCB040 & 041 & 071	NC	1,010	191	NC	1,110	248	NC	1,030	340	NC
	PCB042	NC	924	181	NC	771	152	NC	606	181	NC
	PCB043 & 073	NC	176	23.3 U	NC	96.1	53.4 U	NC	96.8	35.1	NC
	PCB044 & 047 & 065	NC	4,820	934	NC	5,130	1,070	NC	7,860	2,340	NC
	PCB045 & 051	NC	557	117	NC	511	112	NC	891	291	NC
	PCB046	NC	97.4	49.5 U	NC	123 U	121 U	NC	118 U	73.5 U	NC
	PCB048	NC	399	83.9	NC	438	95.7	NC	376	130	NC
	PCB049 & 069	NC	3,220	612	NC	3,820	780	NC	5,190	1,550	NC

PCB050 & 053	NC	390	78.7	NC	447	96.4	NC	665	206	NC
PCB052	NC	5,170	1,020	NC	5,890	1,300	NC	11,100	3,300	NC
PCB054	NC	76.5	14.7	NC	78.2	34.5 U	NC	361	105	NC
PCB055	NC	14.2 U	14.9 U	NC	36.8 U	36.4 U	NC	35.4 U	22.1 U	NC
PCB056	NC	1,010	204	NC	760	158	NC	398	129	NC
PCB057	NC	12.6	12.5 U	NC	30.9 U	30.6 U	NC	29.7 U	18.5 U	NC
PCB058	NC	17.3	13.3 U	NC	32.8 U	32.5 U	NC	31.6 U	19.7 U	NC
PCB059 & 062 & 075	NC	339	149 U	NC	368 U	364 U	NC	356	221 U	NC
PCB060	NC	835	164	NC	1,220	238	NC	1,540	405	NC
PCB061 & 070 & 074 & 076	NC	5,950	1,120	NC	7,150	1,480	NC	8,460	2,420	NC
PCB063	NC	234	42.5	NC	333	65.6	NC	411	109	NC
PCB064	NC	1,750	341	NC	1,810	373	NC	2,180	637	NC
PCB066	NC	4,450	854	NC	6,050	1,230	NC	7,890	2,210	NC
PCB067	NC	101	19.7	NC	76.8	29.1 U	NC	81.6	24.3	NC
PCB068	NC	61	39.6 U	NC	98 U	97.1 U	NC	99.3	58.8 U	NC
PCB072	NC	67.9	12.7	NC	96.9	21.8 U	NC	91.8	27.3	NC
PCB073	NC	20.8 U	21.8 U	NC	53.9 U	53.4 U	NC	96.8	35.1 U	NC
PCB077	NC	304	54.9	NC	260	52.4	NC	225	55.1	NC
PCB078	NC	8.68 U	9.11 U	NC	22.5 U	22.3 U	NC	21.7 U	13.5 U	NC
PCB079	NC	35.7	15.4 U	NC	61	37.9 U	NC	199	49.3	NC
PCB080	NC	14 U	14.7 U	NC	36.3 U	35.9 U	NC	34.9 U	21.8 U	NC
PCB081	NC	17.7	17.8 U	NC	44.1 U	43.7 U	NC	62.4	26.5 U	NC
PCB082	NC	544	97.8	NC	524	108	NC	1,390	368	NC
PCB083	NC	422	65.1	NC	421	82.4	NC	1,250	423	NC
PCB084	NC	1,390	257	NC	1,040	141 U	NC	2,210	743	NC
PCB085 & 117 & 116	NC	1,740	299	NC	3,230	627	NC	9,390	2,550	NC
PCB086 & 087 & 097 & 108 & 119 & 125	NC	4,600	822	NC	5,740	1,140	NC	22,400	6,000	NC
PCB088 & 091	NC	1,290	221	NC	1,140	57.3 U	NC	2,880	918	NC
PCB089	NC	38.8	11.5 U	NC	33	28.2 U	NC	117	33.8	NC
PCB090 & 101 & 113	NC	9,070	1,600	NC	11,900	2,340	NC	42,800	11,400	NC
PCB092	NC	1,750	308	NC	2,520	496	NC	8,160	2,400	NC
PCB093 & 098 & 100 & 102	NC	456	228 U	NC	601	558 U	NC	1,540	468	NC
PCB094	NC	47.2 U	49.5 U	NC	123 U	121 U	NC	118 U	73.5 U	NC
PCB095	NC	4,880	878	NC	4,980	1,060	NC	12,200	4,100	NC
PCB096	NC	48.8	22.2 U	NC	55.3	54.4 U	NC	123	39.7	NC
PCB099	NC	5,270	917	NC	10,800	1,920	NC	30,800	8,020	NC
PCB103	NC	145	29.9	NC	165	44.7 U	NC	311	100	NC
PCB104	NC	28.1 U	29.5 U	NC	73 U	72.3 U	NC	70.3 U	43.8 U	NC
PCB105	NC	2,960	534	NC	7,390	1,450	NC	24,300	6,130	NC
PCB106	NC	27.9 U	29.3 U	NC	72.5 U	71.8 U	NC	69.8 U	43.5 U	NC
PCB107 & 124	NC	238	42.9	NC	354	68.8	NC	349	88.7	NC
PCB109	NC	757	120	NC	1,340	269	NC	3,540	891	NC
PCB110 & 115	NC	7,230	1,330	NC	9,600	1,920	NC	38,700	9,930	NC
PCB111	NC	15.5	14.7 U	NC	36.3 U	35.9 U	NC	43.5	21.8 U	NC
PCB112	NC	20.8 U	21.8 U	NC	53.9 U	53.4 U	NC	51.9 U	32.4 U	NC
PCB114	NC	231	39.7	NC	606	117	NC	1,680	422	NC
PCB118	NC	9,030	1,620	NC	22,800	4,360	NC	69,700	17,200	NC
PCB120	NC	54	49.5 U	NC	123 U	121 U	NC	158	73.5 U	NC
PCB121	NC	13 U	13.7 U	NC	33.8 U	33.5 U	NC	44	20.3 U	NC
PCB122	NC	50.3	18 U	NC	67.3	44.2 U	NC	42.9 U	26.8 U	NC
PCB123	NC	172	35.2	NC	482	91.5	NC	679	130	NC
PCB126	NC	25.5 U	26.7 U	NC	66.2 U	65.5 U	NC	63.7 U	39.7 U	NC
PCB127	NC	16.2 U	17 U	NC	49.8	41.7 U	NC	165	39.6	NC
PCB128 & 166	NC	1,230	231	NC	3,500	692	NC	12,500	3,030	NC

PCB129 & 138 & 163	NC	13,100	2,480	NC	30,700	6,120	NC	94,400	23,600	NC
PCB130	NC	691	130	NC	1,110	220	NC	3,310	818	NC
PCB131	NC	91.8	17	NC	107	41.3 U	NC	285	75.7	NC
PCB132	NC	2,150	427	NC	2,350	463	NC	6,590	1,910	NC
PCB133	NC	310	53.9	NC	661	127	NC	1,480	400	NC
PCB134 & 143	NC	381	99 U	NC	463	243 U	NC	1,340	385	NC
PCB135 & 151	NC	3,940	720	NC	5,490	1,060	NC	13,500	3,630	NC
PCB136	NC	955	174	NC	1,090	215	NC	3,510	1,010	NC
PCB137	NC	600	92.7	NC	1,540	278	NC	5,180	1,440	NC
PCB139 & 140	NC	205	35.4	NC	487	94.8	NC	1,670	469	NC
PCB141	NC	1,680	331	NC	2,970	571	NC	12,800	2,960	NC
PCB142	NC	16 U	16.8 U	NC	41.7 U	41.3 U	NC	40.1 U	25 U	NC
PCB144	NC	373	77.2	NC	512	96.1	NC	1,590	420	NC
PCB145	NC	17.7 U	18.6 U	NC	46.1 U	45.6 U	NC	44.3 U	27.6 U	NC
PCB146	NC	3,120	528	NC	6,220	1,200	NC	14,300	3,630	NC
PCB147 & 149	NC	6,450	1,520	NC	7,680	1,550	NC	11,200	3,260	NC
PCB148	NC	42.9	29.7 U	NC	73.5 U	72.8 U	NC	105	44.1 U	NC
PCB150	NC	31.7	21.4 U	NC	52.9 U	52.4 U	NC	50.9 U	31.8 U	NC
PCB152	NC	22.1 U	23.2 U	NC	57.4 U	56.8 U	NC	77.2	34.4 U	NC
PCB153 & 168	NC	14,100	2,600	NC	33,900	6,720	NC	95,500	24,800	NC
PCB154	NC	261	46.4	NC	588	111	NC	1,190	306	NC
PCB155	NC	23.2 U	24.4 U	NC	60.3 U	59.7 U	NC	58 U	36.2 U	NC
PCB156 & 157	NC	1,400	228	NC	3,820	744	NC	13,900	3,350	NC
PCB158	NC	877	163	NC	2,630	523	NC	9,830	2,330	NC
PCB159	NC	47.2 U	49.5 U	NC	123 U	121 U	NC	118 U	73.5 U	NC
PCB160	NC	1.7 U	1.78 U	NC	4.41 U	4.37 U	NC	4.25 U	2.65 U	NC
PCB161	NC	22.5 U	23.6 U	NC	58.3 U	57.8 U	NC	56.1 U	35 U	NC
PCB162	NC	17.5	16.7 U	NC	129	41 U	NC	310	75.7	NC
PCB164	NC	568	102	NC	945	198	NC	3,360	744	NC
PCB165	NC	22.3 U	23.4 U	NC	57.8 U	57.3 U	NC	69.2	34.7 U	NC
PCB167	NC	577	91.5	NC	1,350	252	NC	3,230	736	NC
PCB169	NC	18.7	15.7 U	NC	68.3 J	38.4 U	NC	182 U	41.7 J	NC
PCB170	NC	1,900	326	NC	5,540	1,080	NC	20,200	4,690	NC
PCB171 & 173	NC	697	113	NC	1,730	345	NC	6,000	1,510	NC
PCB172	NC	492	73.5	NC	1,060	203	NC	3,430	781	NC
PCB174	NC	1,850	326	NC	1,800	333	NC	2,560	570	NC
PCB175	NC	116	29.1 U	NC	189	71.4 U	NC	503	113	NC
PCB176	NC	229	40.9	NC	220	88.8 U	NC	246	64.9	NC
PCB177	NC	1,580	263	NC	2,020	389	NC	3,200	779	NC
PCB178	NC	795	132	NC	1,670	315	NC	3,990	956	NC
PCB179	NC	978	163	NC	1,150	222	NC	1,970	513	NC
PCB180 & 193	NC	6,800	1,070	NC	18,200	3,630	NC	59,700	14,000	NC
PCB181	NC	31.3	26.5 U	NC	89.6	65 U	NC	254	61.3	NC
PCB182	NC	17.2 U	18 U	NC	49.3	44.2 U	NC	102	26.8 U	NC
PCB183 & 185	NC	2,350	380	NC	4,540	925	NC	14,200	3,500	NC
PCB184	NC	20.6 U	21.6 U	NC	53.4 U	52.9 U	NC	51.4 U	32.1 U	NC
PCB186	NC	29.8 U	31.3 U	NC	77.5 U	76.7 U	NC	74.5 U	46.5 U	NC
PCB187	NC	5,750	935	NC	11,400	2,220	NC	21,300	4,900	NC
PCB188	NC	24 U	25.1 U	NC	62.3 U	61.7 U	NC	59.9 U	37.4 U	NC
PCB189	NC	120	18.6	NC	310	56.4	NC	1,100	246	NC
PCB190	NC	291	21.3 U	NC	964	207	NC	2,670	612	NC
PCB191	NC	91.4	25.1 U	NC	293	61.7 U	NC	1,040	226	NC
PCB192	NC	16.6 U	17.4 U	NC	43.1 U	42.7 U	NC	41.5 U	25.9 U	NC
PCB194	NC	962	156	NC	2,500	518	NC	9,710	2,510	NC

PCB195	NC	28.2 U	68.7	NC	1,130	233	NC	4,050	1,090	NC
PCB196	NC	406	85.1	NC	1,400	286	NC	5,190	1,330	NC
PCB197 & 200	NC	155	41.1 U	NC	228	101 U	NC	583	144	NC
PCB198 & 199	NC	31.7 U	252	NC	2,630	555	NC	6,290	1,510	NC
PCB201	NC	194	33	NC	329	67.7	NC	776	189	NC
PCB202	NC	354	56.8	NC	871	178	NC	1,880	477	NC
PCB203	NC	629	125	NC	2,230	441	NC	6,680	1,660	NC
PCB204	NC	23 U	24.1 U	NC	59.8 U	59.2 U	NC	57.5 U	35.9 U	NC
PCB205	NC	57.4	24 U	NC	145	58.9 U	NC	579	140	NC
PCB206	NC	394	26.9 U	NC	1,190	281	NC	2,480	627	NC
PCB207	NC	45.3 U	47.5 U	NC	172	117 U	NC	369	95.9	NC
PCB208	NC	156	48.4 U	NC	392	119 U	NC	497	115	NC
PCB209	NC	205	46	NC	636	144	NC	605	163	NC

Monochlorobiphenyl homologs	NC	17.5 UT	18.4 UT	NC	45.6 UT	45.1 UT	NC	43.9 UT	27.4 UT	NC
Dichlorobiphenyl homologs	NC	748 T	265 T	NC	900 T	297 T	NC	1,750 T	665 T	NC
Trichlorobiphenyl homologs	NC	6,490 T	1,040 T	NC	5,970 T	1,440 T	NC	6,820 T	2,100 T	NC
Tetrachlorobiphenyl homologs	NC	32,000 T	6,220 T	NC	36,500 T	7,910 T	NC	50,400 T	14,800 T	NC
Pentachlorobiphenyl homologs	NC	52,400 T	9,460 T	NC	86,100 T	16,800 T	NC	275,000 T	72,500 T	NC
Hexachlorobiphenyl homologs	NC	53,200 T	10,200 T	NC	109,000 JT	21,600 T	NC	311,000 T	79,500 JT	NC
Heptachlorobiphenyl homologs	NC	24,100 T	3,920 T	NC	51,300 T	10,100 T	NC	143,000 T	33,600 T	NC
Octachlorobiphenyl homologs	NC	2,790 T	809 T	NC	11,500 T	2,360 T	NC	35,700 T	9,050 T	NC
Nonachlorobiphenyl homologs	NC	573 T	48.4 UT	NC	1,750 T	399 T	NC	3,350 T	838 T	NC
Total PCB Congeners (RI Calc; ND=0)	344,000 JT	172,000 JT	30,800 JT	110,000 JT	302,000 JT	58,500 JT	197,000 JT	827,000 JT	212,000 JT	577,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	344,000 JT	173,000 JT	32,000 JT	111,000 JT	303,000 JT	61,100 JT	199,000 JT	828,000 JT	213,000 JT	578,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	7.56 JT	1.03 JT	0.0825 JT	0.614 JT	3.18 JT	0.217 JT	1.9 JT	3.48 JT	2.1 JT	2.92 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	8.45 JT	2.31 JT	1.66 JT	2.02 JT	6.49 JT	4.07 JT	5.45 JT	9.39 JT	4.09 JT	7.24 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	25.6 JT	18.8 JT	5.08 JT	12.8 JT	20 JT	8.38 JT	15 JT	25.5 JT	7.28 JT	18.1 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.479 JT	0.176 JT	0.0899 JT	0.138 JT	0.39 JT	0.216 JT	0.315 JT	0.79 JT	0.255 JT	0.573 JT
% Lipids	NC	6.49	0.86	NC	12.1	2.07	NC	12.7	3.53	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

Table 4. Analytic
Portland Harbor S

Location ID	EPA1-SB06E-08	EPA1-SB06E-09			EPA1-SB06E-10			EPA1-SB06E-11		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet
X-coordinate	7627751.00475	7627751.00475	7627751.00475	7627261.88007	7627261.88007	7627261.88007	7627239.77732	7627239.77732	7627239.77732	7627178.52305
Y-coordinate	704513.70041	704513.70041	704513.70041	704853.84237	704853.84237	704853.84237	704870.11915	704870.11915	704870.11915	704970.96090
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10	16:15
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09	110.7
PCB001	35.4 U	35.4 U	NC	32.1 U	35.7 U	NC	36.4 U	35 U	NC	34.1 U
PCB002	43.9 U	43.9 U	NC	39.7 U	44.3 U	NC	45.1 U	43.5 U	NC	42.3 U
PCB003	23.1 U	23.1 U	NC	20.9 U	23.3 U	NC	23.8 U	22.9 U	NC	22.3 U
PCB004	362	75.1	NC	227	72.4 U	NC	237	71.5	NC	863
PCB005	43.9 U	43.9 U	NC	39.7 U	44.3 U	NC	45.1 U	43.5 U	NC	42.3 U
PCB006	41 U	41 U	NC	37.2 U	41.4 U	NC	63.6	40.7 U	NC	39.5 U
PCB007	55.7 U	55.7 U	NC	50.4 U	56.2 U	NC	57.3 U	55.1 U	NC	53.6 U
PCB008	132	59.8	NC	85.5	57.9	NC	204	74.4	NC	151
PCB009	26.9 U	26.9 U	NC	24.4 U	27.1 U	NC	27.7 U	26.6 U	NC	25.9 U
PCB010	29.2 U	29.2 U	NC	26.5 U	29.5 U	NC	30.1 U	29 U	NC	89.5
PCB011	260	230 U	NC	209 U	232 U	NC	334	228 U	NC	222 U
PCB012 & 013	39.2 U	39.2 U	NC	35.5 U	39.5 U	NC	40.3 U	38.8 U	NC	37.7 U
PCB014	42.9 U	42.9 U	NC	38.9 U	43.3 U	NC	44.2 U	42.5 U	NC	41.4 U
PCB015	64.6 U	64.6 U	NC	58.5 U	65.2 U	NC	76	64 U	NC	62.3 U
PCB016	116	51.9 U	NC	77.8	52.4 U	NC	83.2	51.4 U	NC	163
PCB017	320	81.3	NC	273	73.3	NC	499	144	NC	588
PCB018 & 030	352	107	NC	257	89.3	NC	545	167	NC	495
PCB019	641	126	NC	560	110	NC	184	55.7	NC	2,100
PCB020 & 028	1,310	290	NC	871	205	NC	1,490	465	NC	1,600
PCB021 & 033	231	213 U	NC	193 U	215 U	NC	219 U	211 U	NC	269
PCB022	261	66.5	NC	149	47.6 U	NC	224	78.6	NC	338
PCB023	51.9 U	51.9 U	NC	47 U	52.4 U	NC	53.4 U	51.4 U	NC	50 U
PCB024	31.6 U	31.6 U	NC	28.6 U	31.9 U	NC	32.5 U	31.3 U	NC	30.5 U
PCB025	85.7	46.2 U	NC	65.8	46.7 U	NC	181	52.5	NC	131
PCB026 & 029	189	99.1 U	NC	143	100 U	NC	439	133	NC	262
PCB027	74.8	44.8 U	NC	68.8	45.2 U	NC	138	44.4 U	NC	166
PCB031	687	168	NC	426	118	NC	932	291	NC	941
PCB032	158	43.5	NC	137	39.7	NC	377	112	NC	248
PCB034	37.3 U	37.3 U	NC	33.8 U	37.6 U	NC	38.3 U	36.9 U	NC	35.9 U
PCB035	38.7 U	38.7 U	NC	35 U	39 U	NC	39.8 U	38.3 U	NC	37.3 U
PCB036	41 U	41 U	NC	37.2 U	41.4 U	NC	42.2 U	40.7 U	NC	39.5 U
PCB037	170	43.9	NC	134	31.9 U	NC	114	44.6	NC	182
PCB038	29.7 U	29.7 U	NC	26.9 U	30 U	NC	30.6 U	29.4 U	NC	28.6 U
PCB039	37.3 U	37.3 U	NC	33.8 U	37.6 U	NC	38.3 U	36.9 U	NC	35.9 U
PCB040 & 041 & 071	680	128	NC	533	112	NC	1,110	340	NC	807
PCB042	515	93.8	NC	310	61.6	NC	541	160	NC	616
PCB043 & 073	57.2	51.9 U	NC	55.5	52.4 U	NC	82.4	51.4 U	NC	99.7
PCB044 & 047 & 065	4,140	717	NC	4,190	756	NC	3,260	975	NC	5,520
PCB045 & 051	530	99.9	NC	490	94.6	NC	330	93.6	NC	842
PCB046	118 U	118 U	NC	107 U	119 U	NC	121 U	117 U	NC	114 U
PCB048	252	49	NC	174	36.4	NC	327	99.5	NC	317
PCB049 & 069	2,320	396	NC	1,940	343	NC	2,820	819	NC	2,970

PCB050 & 053	449	82.5	NC	430	78.5	NC	326	94.5	NC	561
PCB052	3,730	658	NC	2,850	534	NC	4,350	1,220	NC	4,380
PCB054	111	33.5 U	NC	112	33.8 U	NC	34.5 U	33.2 U	NC	274
PCB055	35.4 U	35.4 U	NC	32.1 U	35.7 U	NC	36.4 U	35 U	NC	34.1 U
PCB056	579	109	NC	260	56.4	NC	512	163	NC	704
PCB057	29.7 U	29.7 U	NC	26.9 U	30 U	NC	30.6 U	29.4 U	NC	28.6 U
PCB058	31.6 U	31.6 U	NC	28.6 U	31.9 U	NC	32.5 U	31.3 U	NC	30.5 U
PCB059 & 062 & 075	354 U	354 U	NC	321 U	357 U	NC	364 U	350 U	NC	341 U
PCB060	552	98.8	NC	387	72.4	NC	711	211	NC	589
PCB061 & 070 & 074 & 076	4,420	758	NC	3,450	640	NC	4,790	1,410	NC	4,710
PCB063	181	30.2	NC	229	39.9	NC	197	58.2	NC	164
PCB064	1,020	183	NC	598	119 U	NC	1,270	382	NC	1,250
PCB066	3,360	572	NC	3,430	606	NC	3,350	983	NC	3,260
PCB067	73.1	28.3 U	NC	74.3	28.6 U	NC	47.4	28 U	NC	83.4
PCB068	94.3 U	94.3 U	NC	87.6	95.2 U	NC	97.1 U	93.5 U	NC	90.9 U
PCB072	66.7	21.2 U	NC	64	21.4 U	NC	71.4	21 U	NC	67.8
PCB073	51.9 U	51.9 U	NC	55.5 U	52.4 U	NC	53.4 U	51.4 U	NC	99.7 U
PCB077	198	43.4 U	NC	289	50.3	NC	149	44	NC	215
PCB078	21.7 U	21.7 U	NC	19.7 U	21.9 U	NC	22.3 U	21.5 U	NC	20.9 U
PCB079	40.1	36.8 U	NC	33.3 U	37.1 U	NC	37.9 U	36.4 U	NC	35.6
PCB080	34.9 U	34.9 U	NC	31.6 U	35.2 U	NC	35.9 U	34.6 U	NC	34.1 U
PCB081	42.5 U	42.5 U	NC	38.5 U	42.9 U	NC	43.7 U	42.1 U	NC	40.9 U
PCB082	420	71.9	NC	222	41.7	NC	355	106	NC	395
PCB083	308	62.7 U	NC	271	63.3 U	NC	241	71.3	NC	273
PCB084	957	164	NC	620	138 U	NC	806	234	NC	1,090
PCB085 & 117 & 116	1,750	288	NC	1,630	284	NC	1,850	573	NC	1,670
PCB086 & 087 & 097 & 108 & 119 & 125	4,150	708 U	NC	3,320	714 U	NC	3,800	1,110	NC	4,150
PCB088 & 091	1,060	177	NC	780	136	NC	750	218	NC	1,170
PCB089	27.4 U	27.4 U	NC	24.8 U	27.6 U	NC	40.3	27.1 U	NC	26.8
PCB090 & 101 & 113	9,060	1,470	NC	8,230	1,410	NC	6,840	2,010	NC	8,700
PCB092	1,820	298	NC	1,730	290	NC	1,340	377	NC	1,840
PCB093 & 098 & 100 & 102	782	542 U	NC	2,040	548 U	NC	558 U	537 U	NC	1,070
PCB094	118 U	118 U	NC	107 U	119 U	NC	121 U	117 U	NC	114 U
PCB095	4,110	707	NC	3,350	590	NC	2,810	830	NC	4,440
PCB096	52.8 U	52.8 U	NC	49	53.3 U	NC	54.4 U	52.3 U	NC	56.7
PCB099	6,590	1,040	NC	7,860	1,290	NC	5,350	1,400	NC	6,110
PCB103	227	43.4 U	NC	215	43.8 U	NC	63.7	43 U	NC	254
PCB104	70.3 U	70.3 U	NC	63.7 U	71 U	NC	72.3 U	69.6 U	NC	67.7 U
PCB105	3,420	573	NC	3,390	586	NC	3,940	1,120	NC	2,990
PCB106	69.8 U	69.8 U	NC	63.2 U	70.5 U	NC	71.8 U	69.2 U	NC	67.3 U
PCB107 & 124	228	51.4 U	NC	180	51.9 U	NC	232	67.8	NC	233
PCB109	933	153	NC	1,080	187	NC	660	207	NC	703
PCB110 & 115	6,440	1,120	NC	4,850	859	NC	6,420	1,900	NC	6,900
PCB111	34.9 U	34.9 U	NC	35.2	35.2 U	NC	35.9 U	34.6 U	NC	33.6 U
PCB112	51.9 U	51.9 U	NC	47 U	52.4 U	NC	53.4 U	51.4 U	NC	50 U
PCB114	293	58 U	NC	396	62.6	NC	294	82.5	NC	225
PCB118	13,000	2,110	NC	15,800	2,650	NC	10,900	3,130	NC	10,700
PCB120	118 U	118 U	NC	114	119 U	NC	121 U	117 U	NC	114 U
PCB121	32.5 U	32.5 U	NC	59.3	32.9 U	NC	33.5 U	32.2 U	NC	31.4 U
PCB122	57.5	42.9 U	NC	38.9 U	43.3 U	NC	46.4	42.5 U	NC	53.2
PCB123	242	54.7 U	NC	291	55.2 U	NC	195	55.5	NC	237
PCB126	63.7 U	63.7 U	NC	57.7 U	64.3 U	NC	65.5 U	63.1 U	NC	61.4 U
PCB127	40.6 U	40.6 U	NC	36.8 U	41 U	NC	41.7 U	40.2 U	NC	39.1 U
PCB128 & 166	1,990	299	NC	2,250	359	NC	1,740	476	NC	1,910

PCB129 & 138 & 163	24,100	3,590	NC	36,000	5,510	NC	11,800	3,520	NC	20,400
PCB130	1,040	157	NC	1,030	158	NC	519	156	NC	781
PCB131	89.1	40.1 U	NC	64.5	40.5 U	NC	73.2	39.7 U	NC	81.8
PCB132	2,490	380	NC	1,830	295	NC	1,450	431	NC	2,330
PCB133	606	87.3	NC	922	137	NC	213	60.2	NC	477
PCB134 & 143	458	236 U	NC	384	238 U	NC	266	234 U	NC	404
PCB135 & 151	5,620	830	NC	6,870	1,080	NC	1,970	604	NC	5,340
PCB136	1,160	174	NC	1,230	202	NC	556	163	NC	1,160
PCB137	1,100	146	NC	1,500	233	NC	736	217	NC	783
PCB139 & 140	305	56.6 U	NC	387	59.8	NC	229	65.7	NC	297
PCB141	2,570	405	NC	4,390	656	NC	1,170	359	NC	2,720
PCB142	40.1 U	40.1 U	NC	36.3 U	40.5 U	NC	41.3 U	39.7 U	NC	38.6 U
PCB144	611	89.7	NC	669	101	NC	225	70.1 U	NC	532
PCB145	44.3 U	44.3 U	NC	40.2 U	44.8 U	NC	45.6 U	43.9 U	NC	42.7 U
PCB146	5,910	869	NC	8,690	1,320	NC	1,980	542	NC	4,330
PCB147 & 149	10,100	1,500	NC	7,100	1,130	NC	3,670	1,100	NC	9,040
PCB148	87	70.8 U	NC	91.5	71.4 U	NC	72.8 U	70.1 U	NC	78.8
PCB150	50.9 U	50.9 U	NC	46.2 U	51.4 U	NC	52.4 U	50.5 U	NC	49.1 U
PCB152	55.2 U	55.2 U	NC	50 U	55.7 U	NC	56.8 U	54.7 U	NC	53.2 U
PCB153 & 168	29,800	4,350	NC	52,800	8,030	NC	11,600	3,260	NC	25,000
PCB154	554	76.2	NC	902	132	NC	191	55.2	NC	534
PCB155	58 U	58 U	NC	75.1	58.6 U	NC	59.7 U	57.5 U	NC	55.9 U
PCB156 & 157	2,240	370	NC	3,880	629	NC	1,670	465	NC	1,940
PCB158	1,700	261	NC	2,910	444	NC	1,090	303	NC	1,640
PCB159	118 U	118 U	NC	107 U	119 U	NC	121 U	117 U	NC	114 U
PCB160	4.25 U	4.25 U	NC	3.85 U	4.29 U	NC	4.37 U	4.21 U	NC	4.09 U
PCB161	56.1 U	56.1 U	NC	50.9 U	56.7 U	NC	57.8 U	55.6 U	NC	54.1 U
PCB162	77.3	39.9 U	NC	90.5	40.2 U	NC	45.4	39.5 U	NC	62.9
PCB164	831	128	NC	1,040	161	NC	448	125	NC	838
PCB165	55.7 U	55.7 U	NC	64.8	56.2 U	NC	57.3 U	55.1 U	NC	53.6 U
PCB167	987	154	NC	1,380	226	NC	528	143	NC	774
PCB169	37.4 U	37.4 U	NC	56.4 U	37.7 U	NC	38.4 U	37 U	NC	36 U
PCB170	3,800	670	NC	11,400	1,910	NC	1,460	368	NC	4,010
PCB171 & 173	1,290	205	NC	3,560	539	NC	481	127	NC	1,340
PCB172	800	126	NC	2,150	319	NC	280	71	NC	755
PCB174	2,370	382	NC	2,330	390	NC	561	149	NC	2,150
PCB175	200	69.3 U	NC	370	70 U	NC	71.4 U	68.7 U	NC	163
PCB176	278	86.3 U	NC	226	87.1 U	NC	88.8 U	85.5 U	NC	234
PCB177	2,400	388	NC	3,000	480	NC	622	168	NC	1,870
PCB178	1,420	222	NC	2,870	448	NC	461	126	NC	1,230
PCB179	1,120	176	NC	1,500	235	NC	410	117	NC	1,100
PCB180 & 193	13,300	2,330	NC	36,900	6,210	NC	4,390	1,120	NC	12,700
PCB181	63.2 U	63.2 U	NC	117	63.8 U	NC	65 U	62.6 U	NC	60.9 U
PCB182	42.9 U	42.9 U	NC	50.6	43.3 U	NC	44.2 U	42.5 U	NC	41.4 U
PCB183 & 185	3,950	604	NC	9,810	1,470	NC	1,180	315	NC	3,740
PCB184	51.4 U	51.4 U	NC	46.6 U	51.9 U	NC	52.9 U	50.9 U	NC	49.5 U
PCB186	74.5 U	74.5 U	NC	67.5 U	75.2 U	NC	76.7 U	73.8 U	NC	71.8 U
PCB187	10,600	1,680	NC	17,000	2,750	NC	3,010	806	NC	7,920
PCB188	59.9 U	59.9 U	NC	54.3 U	60.5 U	NC	61.7 U	59.3 U	NC	57.7 U
PCB189	213	34.1 U	NC	640	100	NC	82.5	33.8 U	NC	193
PCB190	482	123	NC	1,390	307	NC	146	57.6	NC	554
PCB191	220	59.9 U	NC	673	100	NC	65.9	59.3 U	NC	223
PCB192	41.5 U	41.5 U	NC	37.6 U	41.9 U	NC	42.7 U	41.1 U	NC	40 U
PCB194	1,690	270	NC	6,360	1,050	NC	582	175 U	NC	1,640

PCB195	819	127	NC	3,090	455	NC	257	69.9 U	NC	806
PCB196	920	164	NC	3,000	539	NC	278	74	NC	951
PCB197 & 200	208	97.9 U	NC	411	98.9 U	NC	101 U	97 U	NC	181
PCB198 & 199	1,790	344	NC	3,710	707	NC	631	174	NC	1,610
PCB201	338	48.1	NC	678	98.3	NC	83.7	39 U	NC	238
PCB202	563	84.9	NC	1,230	182	NC	251	74.4 U	NC	526
PCB203	1,260	215	NC	3,890	618	NC	470	134	NC	1,430
PCB204	57.5 U	57.5 U	NC	52.1 U	58 U	NC	59.2 U	57 U	NC	55.4 U
PCB205	98.7	57.2 U	NC	362	57.8 U	NC	58.9 U	56.7 U	NC	97.1
PCB206	532	91	NC	1,360	217	NC	260	71.9	NC	547
PCB207	113 U	113 U	NC	235	114 U	NC	117 U	112 U	NC	109 U
PCB208	193	115 U	NC	296	116 U	NC	119 U	114 U	NC	201
PCB209	286	53	NC	397	81.2	NC	164	51.6 U	NC	271

Monochlorobiphenyl homologs	43.9 UT	43.9 UT	NC	39.7 UT	44.3 UT	NC	45.1 UT	43.5 UT	NC	42.3 UT
Dichlorobiphenyl homologs	835 T	331 T	NC	490 T	292 T	NC	944 T	340 T	NC	1,280 T
Trichlorobiphenyl homologs	4,660 T	1,220 T	NC	3,320 T	973 T	NC	5,390 T	1,760 T	NC	7,550 T
Tetrachlorobiphenyl homologs	23,600 T	4,440 T	NC	20,300 T	3,990 T	NC	24,700 T	7,500 T	NC	27,800 T
Pentachlorobiphenyl homologs	56,100 T	9,230 T	NC	56,700 T	9,500 T	NC	47,500 T	14,100 T	NC	53,500 T
Hexachlorobiphenyl homologs	94,600 T	14,300 T	NC	137,000 T	21,200 T	NC	42,400 T	12,500 T	NC	81,600 T
Heptachlorobiphenyl homologs	42,600 T	7,140 T	NC	94,000 T	15,400 T	NC	13,300 T	3,660 T	NC	38,300 T
Octachlorobiphenyl homologs	7,690 T	1,330 T	NC	22,700 T	3,730 T	NC	2,630 T	638 T	NC	7,480 T
Nonachlorobiphenyl homologs	782 T	205 T	NC	1,890 T	332 T	NC	378 T	185 T	NC	803 T
Total PCB Congeners (RI Calc; ND=0)	230,000 JT	35,400 JT	146,000 JT	335,000 JT	52,600 JT	217,000 JT	136,000 JT	38,200 JT	93,000 JT	217,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	231,000 JT	38,300 JT	148,000 JT	337,000 JT	55,600 JT	218,000 JT	137,000 JT	40,700 JT	95,200 JT	219,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.632 JT	0.0962 JT	0.4 JT	0.802 JT	0.133 JT	0.521 JT	0.543 JT	0.154 JT	0.373 JT	0.533 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.38 JT	3.85 JT	4.15 JT	4.54 JT	3.92 JT	4.28 JT	4.4 JT	3.87 JT	4.17 JT	4.15 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	16 JT	6.53 JT	11.9 JT	20.2 JT	8.05 JT	15.1 JT	13.6 JT	7.68 JT	11 JT	16.5 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.293 JT	0.189 JT	0.248 JT	0.313 JT	0.199 JT	0.265 JT	0.279 JT	0.199 JT	0.244 JT	0.271 JT
% Lipids	7.29	1.36	NC	6.9	1.23	NC	9.57	2.49	NC	7.04

Notes:

	All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).	All concentrations a
J	Concentration or total is estimated.	Concentration or tot
LWG	Lower Willamette Group	Lower Willamette G
NA	Not applicable	Not applicable
NC	Not calculated	Not calculated
ND	Nondetect	Nondetect
PCB	Polychlorinated biphenyl	Polychlorinated biph
RA	Risk assessment	Risk assessment
RI	Remedial investigation	Remedial investigat
T	Concentration is calculated from laboratory-reported data.	Concentration is cal
TCDD	Tetrachlorodibenzo-p-dioxin	Tetrachlorodibenzo-p
TEQ	Toxic equivalent	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.	Result is not-detecte

Table 4. Analytical Results Incl
Portland Harbor Sample Receipt,

EPA1-SB06E-11 LocationID	EPA1-SB06W-01			EPA1-SB06W-04			EPA1-SB07E-04			
Tissue	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet
X-coordinate	7627178.52305	7627178.52305	7623259.73897	7623259.73897	7623259.73897	7625793.9513	7625793.9513	7625793.9513	7630501.76039	7630501.76039
Y-coordinate	704970.96090	704970.96090	706089.13850	706089.13850	706089.13850	704637.76539	704637.76539	704637.76539	702199.77674	702199.77674
RiverMile	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6	7.6	7.6
Sample Date	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45	16:15	16:15
Sample Mass (g)	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29	154.94	133.25
PCB001	36.4 U	NC	35.7 U	34.1 U	NC	36.8 U	37.1 U	NC	36.4 U	36.4 U
PCB002	45.1 U	NC	44.3 U	42.3 U	NC	45.6 U	46 U	NC	45.1 U	45.1 U
PCB003	23.8 U	NC	23.3 U	22.3 U	NC	24 U	24.3 U	NC	23.8 U	23.8 U
PCB004	151	NC	233 J	69.1 U	NC	598	105	NC	340	73.8 U
PCB005	45.1 U	NC	44.3 U	42.3 U	NC	45.6 U	46 U	NC	45.1 U	45.1 U
PCB006	42.2 U	NC	46.9	39.5 U	NC	184	43.1 U	NC	44	42.2 U
PCB007	57.3 U	NC	56.2 U	53.6 U	NC	57.8 U	58.4 U	NC	57.3 U	57.3 U
PCB008	70.4	NC	180	59.4	NC	502	95	NC	171	47.6 U
PCB009	27.7 U	NC	27.1 U	25.9 U	NC	37.1	28.2 U	NC	27.7 U	27.7 U
PCB010	30.1 U	NC	29.5 U	28.2 U	NC	30.4 U	30.7 U	NC	30.1 U	30.1 U
PCB011	237 U	NC	232 U	222 U	NC	333	242 U	NC	408	237 U
PCB012 & 013	40.3 U	NC	39.5 U	37.7 U	NC	40.7 U	41.1 U	NC	40.3 U	40.3 U
PCB014	44.2 U	NC	43.3 U	41.4 U	NC	44.6 U	45 U	NC	44.2 U	44.2 U
PCB015	66.5 U	NC	65.2 U	62.3 U	NC	178	67.8 U	NC	84.8	66.5 U
PCB016	56.7	NC	52.4	50 U	NC	420	83.7	NC	145	53.4 U
PCB017	131	NC	58.6	121	NC	1,400	233	NC	412	86.9
PCB018 & 030	139	NC	2.86	153 U	NC	1,950	316 U	NC	442	99.2 U
PCB019	365	NC	45.7	93.3	NC	679	110	NC	598	110
PCB020 & 028	353	NC	2,210	597	NC	14,200	2,480	NC	1,660	357
PCB021 & 033	219 U	NC	429	205 U	NC	809	223 U	NC	261	219 U
PCB022	84.3	NC	456	127	NC	1,490	261	NC	329	71.1
PCB023	53.4 U	NC	52.4 U	50 U	NC	53.9 U	54.5 U	NC	53.4 U	53.4 U
PCB024	32.5 U	NC	31.9 U	30.5 U	NC	32.8 U	33.2 U	NC	32.5 U	32.5 U
PCB025	47.6 U	NC	151	44.5 U	NC	340	59.9	NC	111	47.6 U
PCB026 & 029	102 U	NC	325	95.5 U	NC	943	163	NC	258	102 U
PCB027	46.1 U	NC	45.2	43.2 U	NC	374	58.4	NC	77.3	46.1 U
PCB031	223	NC	1,130	309	NC	3,400	587	NC	936	204
PCB032	64.1	NC	20.5	75.2	NC	1,740	290	NC	192	45.1
PCB034	38.3 U	NC	37.6 U	35.9 U	NC	38.7 U	39.1 U	NC	38.3 U	38.3 U
PCB035	39.8 U	NC	39 U	37.3 U	NC	40.2 U	40.6 U	NC	39.8 U	39.8 U
PCB036	42.2 U	NC	41.4 U	39.5 U	NC	42.6 U	43.1 U	NC	42.2 U	42.2 U
PCB037	41.6	NC	147	53	NC	660	107	NC	271	61.8
PCB038	30.6 U	NC	30 U	28.6 U	NC	44	31.2 U	NC	30.6 U	30.6 U
PCB039	38.3 U	NC	37.6 U	35.9 U	NC	55.2	39.1 U	NC	38.3 U	38.3 U
PCB040 & 041 & 071	155	NC	1,580	418	NC	21,000	3,780	NC	783	165
PCB042	116	NC	1,150	306	NC	16,000	2,800	NC	704	132
PCB043 & 073	53.4 U	NC	125	50 U	NC	1,610	270	NC	89.7	53.4 U
PCB044 & 047 & 065	983	NC	6,840	1,690	NC	79,700	13,200	NC	4,640	882
PCB045 & 051	150	NC	712	181	NC	4,380	741	NC	672	130
PCB046	121 U	NC	119 U	114 U	NC	978	171	NC	121 U	121 U
PCB048	61.9	NC	591	156	NC	7,420	1,280	NC	314	64.7
PCB049 & 069	524	NC	4,580	1,110	NC	58,600	9,550	NC	2,920	554

PCB050 & 053	97.4	NC	638	164	NC	3,730	623	NC	414	81.1
PCB052	789	NC	7,110	1,750	NC	95,300	15,500	NC	4,760	930
PCB054	45.2	NC	75.7	32.3 U	NC	97.6	35.1 U	NC	95.1	34.5 U
PCB055	36.4 U	NC	35.7 U	34.1 U	NC	36.8 U	37.1 U	NC	36.4 U	36.4 U
PCB056	132	NC	1,150	277	NC	8,500	1,370	NC	668	134
PCB057	30.6 U	NC	30 U	28.6 U	NC	154	31.2 U	NC	30.6 U	30.6 U
PCB058	32.5 U	NC	31.9 U	30.5 U	NC	130	33.2 U	NC	32.5 U	32.5 U
PCB059 & 062 & 075	364 U	NC	411	341 U	NC	5,540	919	NC	364 U	364 U
PCB060	104	NC	1,260	303	NC	26,300	4,260	NC	669	130
PCB061 & 070 & 074 & 076	847	NC	7,320	1,780	NC	76,600	12,300	NC	5,370	1,050
PCB063	28.6 U	NC	351	81	NC	4,040	642	NC	210	40.6
PCB064	225	NC	2,260	561	NC	37,900	6,380	NC	1,310	262
PCB066	565	NC	6,640	1,630	NC	93,500	15,300	NC	3,920	777
PCB067	29.1 U	NC	119	28.9	NC	490	77.5	NC	78	29.1 U
PCB068	97.1 U	NC	104	90.9 U	NC	163	99 U	NC	97.1 U	97.1 U
PCB072	21.8 U	NC	127	29.7	NC	504	81.7	NC	71	21.8 U
PCB073	53.4 U	NC	52.4 U	50 U	NC	1,610	270	NC	89.7	53.4 U
PCB077	44.7 U	NC	263	62.4	NC	1,810	278	NC	294	59.3
PCB078	22.3 U	NC	21.9 U	20.9 U	NC	22.5 U	22.8 U	NC	22.3 U	22.3 U
PCB079	37.9 U	NC	67.6	35.5 U	NC	491	78.5	NC	60.6	37.9 U
PCB080	35.9 U	NC	35.2 U	33.6 U	NC	36.3 U	36.6 U	NC	35.9 U	35.9 U
PCB081	43.7 U	NC	43.1	40.9 U	NC	210	44.6 U	NC	43.7 U	43.7 U
PCB082	70.5	NC	898	212	NC	6,630	1,100	NC	428	86
PCB083	64.6 U	NC	595	118	NC	3,730	743	NC	313	64.6 U
PCB084	192	NC	1,640	395	NC	10,700	1,780	NC	1,200	241
PCB085 & 117 & 116	280	NC	3,470	801	NC	28,800	4,610	NC	1,780	350
PCB086 & 087 & 097 & 108 & 119 & 125	728 U	NC	7,870	1,850	NC	60,300	9,710	NC	4,340	866
PCB088 & 091	206	NC	2,070	487	NC	11,900	1,910	NC	1,200	228
PCB089	28.2 U	NC	57.8	26.4 U	NC	828	141	NC	29	28.2 U
PCB090 & 101 & 113	1,500	NC	17,100	3,990	NC	92,200	14,900	NC	9,220	1,820
PCB092	318	NC	3,490	812	NC	18,300	2,930	NC	1,870	358
PCB093 & 098 & 100 & 102	558 U	NC	1,100	523 U	NC	2,660	569 U	NC	586	558 U
PCB094	121 U	NC	119 U	114 U	NC	245	124 U	NC	121 U	121 U
PCB095	786	NC	7,590	1,820	NC	37,100	6,110	NC	4,730	947
PCB096	54.4 U	NC	79.8	50.9 U	NC	532	87.2	NC	54.4 U	54.4 U
PCB099	1,020	NC	10,900	2,650	NC	62,800	10,600	NC	6,530	1,280
PCB103	44.7 U	NC	324	75.8	NC	680	107	NC	204	44.7 U
PCB104	72.3 U	NC	71 U	67.7 U	NC	73 U	73.8 U	NC	72.3 U	72.3 U
PCB105	518	NC	6,770	1,550	NC	50,200	7,130	NC	3,520	690
PCB106	71.8 U	NC	70.5 U	67.3 U	NC	72.5 U	73.3 U	NC	71.8 U	71.8 U
PCB107 & 124	52.9 U	NC	435	97.5	NC	1,550	239	NC	266	52.9 U
PCB109	120	NC	1,400	340	NC	6,710	1,060	NC	859	150
PCB110 & 115	1,220	NC	12,700	2,980	NC	80,300	13,200	NC	7,190	1,470
PCB111	35.9 U	NC	38.7	33.6 U	NC	38.1	36.6 U	NC	35.9 U	35.9 U
PCB112	53.4 U	NC	52.4 U	50 U	NC	53.9 U	54.5 U	NC	53.4 U	53.4 U
PCB114	59.7 U	NC	525	118	NC	3,740	552	NC	274	59.7 U
PCB118	1,850	NC	21,400	5,100	NC	106,000	15,800	NC	11,600	2,320
PCB120	121 U	NC	143	114 U	NC	190	124 U	NC	121 U	121 U
PCB121	33.5 U	NC	34.5	31.4 U	NC	33.8 U	34.2 U	NC	33.5 U	33.5 U
PCB122	44.2 U	NC	102	41.4 U	NC	273	68.9	NC	56.7	44.2 U
PCB123	56.3 U	NC	526	108	NC	2,460	424	NC	261	60
PCB126	65.5 U	NC	64.3 U	61.4 U	NC	142	66.8 U	NC	65.5 U	65.5 U
PCB127	41.7 U	NC	41 U	39.1 U	NC	94.7	42.6 U	NC	41.7 U	41.7 U
PCB128 & 166	293	NC	3,820	807	NC	8,590	1,140	NC	2,050	410

PCB129 & 138 & 163	3,030	NC	39,900	8,130	NC	65,400	8,830	NC	21,700	4,240
PCB130	113	NC	1,660	337	NC	3,440	504	NC	815	159
PCB131	41.3 U	NC	155	38.6 U	NC	412	63.1	NC	88.1	41.3 U
PCB132	359	NC	4,270	942	NC	9,070	1,420	NC	2,290	475
PCB133	69.8	NC	883	172	NC	936	140	NC	460	91.8
PCB134 & 143	243 U	NC	771	227 U	NC	1,950	289	NC	381	243 U
PCB135 & 151	793	NC	9,140	1,940	NC	14,900	2,410	NC	4,790	1,020
PCB136	180	NC	1,820	413	NC	3,830	622	NC	1,010	221
PCB137	141 U	NC	1,160	272	NC	3,300	535	NC	887	174
PCB139 & 140	58.3 U	NC	547	111	NC	1,270	193	NC	286	58.3 U
PCB141	407	NC	4,920	987	NC	10,800	1,550	NC	2,200	498
PCB142	41.3 U	NC	40.5 U	38.6 U	NC	41.7 U	42.1 U	NC	41.3 U	41.3 U
PCB144	79.6	NC	972	206	NC	1,960	313	NC	447	93
PCB145	45.6 U	NC	44.8 U	42.7 U	NC	46.1 U	46.5 U	NC	45.6 U	45.6 U
PCB146	631	NC	8,050	1,680	NC	9,850	1,490	NC	4,540	899
PCB147 & 149	1,370	NC	17,400	3,650	NC	24,200	3,750	NC	8,140	1,680
PCB148	72.8 U	NC	144	68.2 U	NC	79.1	74.3 U	NC	72.8 U	72.8 U
PCB150	52.4 U	NC	74.9	49.1 U	NC	52.9 U	53.5 U	NC	52.4 U	52.4 U
PCB152	56.8 U	NC	55.7 U	53.2 U	NC	61.4	57.9 U	NC	56.8 U	56.8 U
PCB153 & 168	3,630	NC	45,200	9,020	NC	53,000	7,870	NC	25,300	5,050
PCB154	78.2	NC	863	179	NC	705	111	NC	375	79.3
PCB155	59.7 U	NC	58.6 U	55.9 U	NC	60.3 U	60.9 U	NC	59.7 U	59.7 U
PCB156 & 157	315	NC	3,710	805	NC	7,580	1,130	NC	1,990	376
PCB158	242	NC	3,180	645	NC	5,930	785	NC	1,500	306
PCB159	121 U	NC	119 U	114 U	NC	123 U	124 U	NC	121 U	121 U
PCB160	4.37 U	NC	4.29 U	4.09 U	NC	4.41 U	4.46 U	NC	4.37 U	4.37 U
PCB161	57.8 U	NC	56.7 U	54.1 U	NC	58.3 U	58.9 U	NC	57.8 U	57.8 U
PCB162	41 U	NC	298	58	NC	207	41.8 U	NC	57.7	41 U
PCB164	130	NC	1,630	294	NC	3,320	467	NC	787	148
PCB165	57.3 U	NC	56.2 U	53.6 U	NC	57.8 U	58.4 U	NC	57.3 U	57.3 U
PCB167	126	NC	1,510	316	NC	2,100	317	NC	860	159
PCB169	38.4 U	NC	95.8 U	36 U	NC	66.1 U	39.2 U	NC	98.8 J	38.4 U
PCB170	715	NC	8,710	1,890	NC	6,410	935	NC	4,780	768
PCB171 & 173	206	NC	2,760	597	NC	2,380	330	NC	1,430	248
PCB172	119	NC	1,730	362	NC	1,410	195	NC	928	158
PCB174	354	NC	4,850	1,010	NC	4,740	628	NC	2,180	402
PCB175	71.4 U	NC	361	71.3	NC	318	72.8 U	NC	161	71.4 U
PCB176	88.8 U	NC	600	114	NC	528	90.6 U	NC	215	88.8 U
PCB177	303	NC	4,570	939	NC	3,840	527	NC	2,140	391
PCB178	185	NC	2,590	500	NC	2,060	297	NC	1,340	253
PCB179	181	NC	2,330	469	NC	2,770	412	NC	1,090	211
PCB180 & 193	2,270	NC	25,500	5,550	NC	17,000	2,470	NC	16,200	2,670
PCB181	65 U	NC	115	60.9 U	NC	108 U	66.3 U	NC	65 U	65 U
PCB182	44.2 U	NC	65.4	41.4 U	NC	44.6 U	45 U	NC	44.2 U	44.2 U
PCB183 & 185	578	NC	7,960	1,620	NC	6,520	876	NC	4,410	778
PCB184	52.9 U	NC	51.9 U	49.5 U	NC	53.4 U	54 U	NC	52.9 U	52.9 U
PCB186	76.7 U	NC	75.2 U	71.8 U	NC	77.5 U	78.2 U	NC	76.7 U	76.7 U
PCB187	1,250	NC	15,700	3,130	NC	12,700	1,740	NC	11,300	2,140
PCB188	61.7 U	NC	60.5 U	57.7 U	NC	62.3 U	62.9 U	NC	61.7 U	61.7 U
PCB189	35.1 U	NC	412	78.9	NC	291	43.4	NC	207	36
PCB190	122	NC	1,390	349	NC	1,080	187	NC	735	154
PCB191	61.7 U	NC	440	88	NC	309	62.9 U	NC	241	61.7 U
PCB192	42.7 U	NC	41.9 U	40 U	NC	43.1 U	43.6 U	NC	42.7 U	42.7 U
PCB194	287	NC	3,980	920	NC	1,900	325	NC	2,410	395

PCB195	137	NC	1,830	394	NC	941	156	NC	1,060	171
PCB196	173	NC	2,130	469	NC	1,140	186	NC	1,250	213
PCB197 & 200	101 U	NC	453	94.6	NC	304	103 U	NC	222	101 U
PCB198 & 199	327	NC	4,230	973	NC	2,730	451	NC	2,540	483
PCB201	40.5 U	NC	555	113	NC	346	55	NC	289	56.8
PCB202	88.2	NC	1,270	259	NC	811	127	NC	781	143
PCB203	256	NC	3,200	714	NC	1,990	329	NC	2,260	362
PCB204	59.2 U	NC	58 U	55.4 U	NC	59.8 U	60.3 U	NC	59.2 U	59.2 U
PCB205	58.9 U	NC	233	55.1 U	NC	128	60 U	NC	129	58.9 U
PCB206	104	NC	1,430	341	NC	687	128	NC	1,060	194
PCB207	117 U	NC	202	109 U	NC	118 U	119 U	NC	171	117 U
PCB208	119 U	NC	510	112	NC	248	121 U	NC	335	119 U
PCB209	62	NC	661	169	NC	230	54.7 U	NC	533	120

Monochlorobiphenyl homologs	45.1 UT	NC	44.3 UT	42.3 UT	NC	45.6 UT	46 UT	NC	45.1 UT	45.1 UT
Dichlorobiphenyl homologs	423 T	NC	637 JT	283 T	NC	1,850 T	406 T	NC	1,080 T	237 UT
Trichlorobiphenyl homologs	1,730 T	NC	5,140 T	1,740 T	NC	28,500 T	4,770 T	NC	5,760 T	1,290 T
Tetrachlorobiphenyl homologs	5,270 T	NC	43,600 T	10,900 T	NC	547,000 T	90,000 T	NC	28,500 T	5,850 T
Pentachlorobiphenyl homologs	9,170 T	NC	101,000 T	24,100 T	NC	589,000 T	93,700 T	NC	56,700 T	11,600 T
Hexachlorobiphenyl homologs	12,300 T	NC	152,000 T	31,300 T	NC	233,000 T	34,200 T	NC	81,300 JT	16,500 T
Heptachlorobiphenyl homologs	6,520 T	NC	80,100 T	16,900 T	NC	62,500 T	8,870 T	NC	47,500 T	8,430 T
Octachlorobiphenyl homologs	1,370 T	NC	17,900 T	3,960 T	NC	10,300 T	1,710 T	NC	10,900 T	1,900 T
Nonachlorobiphenyl homologs	222 T	NC	2,140 T	508 T	NC	994 T	248 T	NC	1,570 T	312 T
Total PCB Congeners (RI Calc; ND=0)	34,100 JT	134,000 JT	403,000 JT	87,800 JT	258,000 JT	1,470,000 JT	232,000 JT	912,000 JT	233,000 JT	43,600 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	37,100 JT	136,000 JT	404,000 JT	89,900 JT	259,000 JT	1,470,000 JT	234,000 JT	913,000 JT	234,000 JT	46,300 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.0843 JT	0.328 JT	1.08 JT	0.249 JT	0.699 JT	19.6 JT	0.79 JT	11.1 JT	3.55 JT	0.115 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.95 JT	4.06 JT	5.74 JT	3.86 JT	4.87 JT	20.6 JT	4.72 JT	13.4 JT	6.84 JT	3.97 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	6.7 JT	12 JT	22.1 JT	8.56 JT	15.8 JT	133 JT	20.5 JT	82.1 JT	21 JT	8.58 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.192 JT	0.235 JT	0.385 JT	0.211 JT	0.305 JT	1.86 JT	0.334 JT	1.17 JT	0.303 JT	0.2 JT
% Lipids	1.04	NC	8.59	2.13	NC	9.44	1.12	NC	8.92	1.72

Notes:

All concentrations are in units of ng/k

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from labo
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported

PA1-SB07E-04	Location ID	EPA1-SB07E-05		EPA1-SB07E-06			EPA1-SB08W-01				
	Tissue	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
	X-coordinate	7630501.76039	7631760.29319	7631760.29319	7631760.29319	7631349.49959	7631349.49959	7631349.49959	7630437.20807	7630437.20807	7630437.20807
	Y-coordinate	702199.77674	701577.03264	701577.03264	701577.03264	701694.06802	701694.06802	701694.06802	699436.53571	699436.53571	699436.53571
	RiverMile	7.6	7.9	7.9	7.9	7.9	7.9	7.9	8	8	8
	Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	27-Sep-11	27-Sep-11	27-Sep-11
	Sample Time	16:15	15:30	15:30	15:30	15:42	15:42	15:42	11:33	11:33	11:33
	Sample Mass (g)	288.19	115.92	84.2	200.12	259.45	215.09	474.54	381.98	293.4	675.38
	PCB001	NC	35.4 U	21.4 U	NC	37.1 U	35 U	NC	63.9	22.5 U	NC
	PCB002	NC	43.9 U	26.6 U	NC	46 U	43.5 U	NC	26.8 U	27.9 U	NC
	PCB003	NC	23.1 U	14.4	NC	24.3 U	22.9 U	NC	19.7	15.6	NC
	PCB004	NC	236	45.6	NC	379	75.7	NC	1,100	183	NC
	PCB005	NC	43.9 U	26.6 U	NC	46 U	43.5 U	NC	26.8 U	27.9 U	NC
	PCB006	NC	41 U	24.9 U	NC	52.4	40.7 U	NC	175	28.3	NC
	PCB007	NC	55.7 U	33.7 U	NC	58.4 U	55.1 U	NC	34 U	35.4 U	NC
	PCB008	NC	147	50.3	NC	208	45.8 U	NC	530	90.9	NC
	PCB009	NC	26.9 U	16.3 U	NC	28.2 U	26.6 U	NC	60.3	17.1 U	NC
	PCB010	NC	29.2 U	17.7 U	NC	30.7 U	29 U	NC	77.7	18.6 U	NC
	PCB011	NC	230 U	139 U	NC	242 U	228 U	NC	447	159	NC
	PCB012 & 013	NC	39.2 U	23.7 U	NC	41.1 U	38.8 U	NC	23.9 U	24.9 U	NC
	PCB014	NC	42.9 U	26 U	NC	45 U	42.5 U	NC	26.3 U	27.3 U	NC
	PCB015	NC	68.2	39.1 U	NC	87.6	64 U	NC	410	67.6	NC
	PCB016	NC	158	49.6	NC	185	51.4 U	NC	1,000	158	NC
	PCB017	NC	452	92.7	NC	559	91.5	NC	1,580	249	NC
	PCB018 & 030	NC	472	106 U	NC	679	90.8	NC	4,160	656	NC
	PCB019	NC	466	78.6	NC	736	118	NC	1,410	232	NC
	PCB020 & 028	NC	1,850	323	NC	2,210	277	NC	13,600	2,210	NC
	PCB021 & 033	NC	250	129 U	NC	377	211 U	NC	829	162	NC
	PCB022	NC	396	75.8	NC	413	53	NC	2,650	452	NC
	PCB023	NC	51.9 U	31.4 U	NC	54.5 U	51.4 U	NC	31.7 U	33 U	NC
	PCB024	NC	31.6 U	19.1 U	NC	33.2 U	31.3 U	NC	155	24.4	NC
	PCB025	NC	140	28 U	NC	174	45.8 U	NC	325	53.3	NC
	PCB026 & 029	NC	309	60 U	NC	444	98.1 U	NC	1,560	255	NC
	PCB027	NC	81.2	27.1 U	NC	122	44.4 U	NC	608	92.9	NC
	PCB031	NC	1,080	203	NC	1,320	143	NC	5,050	840	NC
	PCB032	NC	208	46.8 U	NC	321	53.4	NC	3,100	494	NC
	PCB034	NC	37.3 U	22.6 U	NC	39.1 U	36.9 U	NC	34.1	23.7 U	NC
	PCB035	NC	38.7 U	23.4 U	NC	40.6 U	38.3 U	NC	23.7 U	24.6 U	NC
	PCB036	NC	41 U	24.9 U	NC	43.1 U	40.7 U	NC	25.1 U	26.1 U	NC
	PCB037	NC	189	34.9	NC	191	37.3	NC	728	122	NC
	PCB038	NC	29.7 U	18 U	NC	31.2 U	29.4 U	NC	18.2 U	18.9 U	NC
	PCB039	NC	37.3 U	22.6 U	NC	39.1 U	36.9 U	NC	22.8 U	23.7 U	NC
	PCB040 & 041 & 071	NC	913	138	NC	1,260	191	NC	2,790	468	NC
	PCB042	NC	892	122	NC	776	94.9	NC	2,080	342	NC
	PCB043 & 073	NC	3,610	31.4 U	NC	3,610	771	NC	223	38.4	NC
	PCB044 & 047 & 065	NC	6,250	858	NC	5,490	1,260	NC	12,300	1,960	NC
	PCB045 & 051	NC	957	148	NC	682	208	NC	1,760	268	NC
	PCB046	NC	118 U	71.4 U	NC	124 U	117 U	NC	299	75 U	NC
	PCB048	NC	357	57.4	NC	428	53.9	NC	1,110	187	NC
	PCB049 & 069	NC	3,940	560	NC	3,930	629	NC	8,970	1,370	NC

PCB050 & 053	NC	547	81.9	NC	515	126	NC	963	145	NC
PCB052	NC	5,840	892	NC	5,790	866	NC	17,900	2,710	NC
PCB054	NC	113	20.3 U	NC	116	33.2 U	NC	116	21.3 U	NC
PCB055	NC	35.4 U	21.4 U	NC	37.1 U	35 U	NC	21.6 U	22.5 U	NC
PCB056	NC	937	124	NC	799	86.3	NC	1,900	327	NC
PCB057	NC	29.7 U	18 U	NC	31.2 U	29.4 U	NC	34.4	18.9 U	NC
PCB058	NC	31.6 U	19.1 U	NC	33.2 U	31.3 U	NC	24.6	20.1 U	NC
PCB059 & 062 & 075	NC	355	214 U	NC	371 U	350 U	NC	800	225 U	NC
PCB060	NC	782	96.6	NC	894	93.8	NC	2,110	337	NC
PCB061 & 070 & 074 & 076	NC	6,160	759	NC	6,290	803	NC	15,500	2,460	NC
PCB063	NC	212	24.6	NC	272	35.1	NC	477	77.1	NC
PCB064	NC	1,700	238	NC	1,760	188	NC	4,660	729	NC
PCB066	NC	4,190	524	NC	5,010	641	NC	10,900	1,700	NC
PCB067	NC	99.7	17.1 U	NC	85.2	28 U	NC	194	32.9	NC
PCB068	NC	111	57.1 U	NC	123	93.5 U	NC	107	60 U	NC
PCB072	NC	94.3	12.9 U	NC	112	21 U	NC	138	22.8	NC
PCB073	NC	51.9 U	31.4 U	NC	54.5 U	51.4 U	NC	31.7 U	33 U	NC
PCB077	NC	275	38.3	NC	246	43 U	NC	507	77.8	NC
PCB078	NC	21.7 U	13.1 U	NC	22.8 U	21.5 U	NC	13.3 U	13.8 U	NC
PCB079	NC	46.7	22.3 U	NC	127	36.4 U	NC	112	26.8	NC
PCB080	NC	34.9 U	21.1 U	NC	36.6 U	34.6 U	NC	21.3 U	22.2 U	NC
PCB081	NC	42.5 U	25.7 U	NC	44.6 U	42.1 U	NC	54.9	27 U	NC
PCB082	NC	653	77.9	NC	424	82.7	NC	1,230	200	NC
PCB083	NC	581	71.3	NC	317	62.1 U	NC	948	225	NC
PCB084	NC	1,820	233	NC	1,040	216	NC	3,210	547	NC
PCB085 & 117 & 116	NC	2,280	297	NC	2,300	399	NC	6,710	976	NC
PCB086 & 087 & 097 & 108 & 119 & 125	NC	6,410	819	NC	4,520	940	NC	14,200	2,260	NC
PCB088 & 091	NC	1,970	255	NC	1,180	245	NC	3,170	517	NC
PCB089	NC	36.4	16.6 U	NC	38.2	27.1 U	NC	89.5	17.4 U	NC
PCB090 & 101 & 113	NC	13,900	1,880	NC	9,790	2,480	NC	30,000	4,630	NC
PCB092	NC	2,920	372	NC	2,170	518	NC	6,370	994	NC
PCB093 & 098 & 100 & 102	NC	892	329 U	NC	721	537 U	NC	1,190	345 U	NC
PCB094	NC	118 U	71.4 U	NC	124 U	117 U	NC	91.2	75 U	NC
PCB095	NC	7,560	995	NC	4,820	1,110	NC	14,300	2,340	NC
PCB096	NC	65.8	32 U	NC	58.7	52.3 U	NC	114	33.6 U	NC
PCB099	NC	7,670	978	NC	7,880	1,690	NC	19,300	3,150	NC
PCB103	NC	373	48.9	NC	207	67.8	NC	414	66.2	NC
PCB104	NC	70.3 U	42.6 U	NC	73.8 U	69.6 U	NC	43 U	44.7 U	NC
PCB105	NC	4,150	508	NC	4,050	723	NC	12,800	1,830	NC
PCB106	NC	69.8 U	42.3 U	NC	73.3 U	69.2 U	NC	42.7 U	44.4 U	NC
PCB107 & 124	NC	380	43.2	NC	275	50.9 U	NC	815	120	NC
PCB109	NC	1,080	125	NC	1,090	221	NC	2,460	323	NC
PCB110 & 115	NC	11,100	1,430	NC	8,060	1,610	NC	23,700	3,760	NC
PCB111	NC	34.9 U	21.1 U	NC	36.6 U	34.6 U	NC	33	22.2 U	NC
PCB112	NC	51.9 U	31.4 U	NC	54.5 U	51.4 U	NC	31.7 U	33 U	NC
PCB114	NC	287	43.1	NC	330	57.5 U	NC	821	123	NC
PCB118	NC	14,000	1,720	NC	14,000	3,050	NC	39,200	5,910	NC
PCB120	NC	125	71.4 U	NC	141	117 U	NC	134	75 U	NC
PCB121	NC	32.5 U	19.7 U	NC	34.2 U	32.2 U	NC	31.6	20.7 U	NC
PCB122	NC	82.2	42.3 U	NC	55.7	42.5 U	NC	179	27.3 U	NC
PCB123	NC	326	33.3	NC	322	54.2 U	NC	533	96.7	NC
PCB126	NC	63.7 U	38.6 U	NC	66.8 U	63.1 U	NC	73.1	40.5 U	NC
PCB127	NC	40.6 U	24.6 U	NC	42.6 U	40.2 U	NC	66.9	25.8 U	NC
PCB128 & 166	NC	2,940	313	NC	2,770	704	NC	6,620	870	NC

PCB129 & 138 & 163	NC	33,300	3,640	NC	30,300	9,040	NC	55,400	7,810	NC
PCB130	NC	1,650	166	NC	1,140	249	NC	2,250	323	NC
PCB131	NC	175	24.3 U	NC	101	39.7 U	NC	215	36.5	NC
PCB132	NC	4,840	512	NC	2,440	557	NC	5,450	940	NC
PCB133	NC	750	72.6	NC	1,100	185	NC	930	144	NC
PCB134 & 143	NC	879	143 U	NC	475	234 U	NC	1,010	167	NC
PCB135 & 151	NC	9,790	1,080	NC	6,590	1,860	NC	11,200	1,800	NC
PCB136	NC	2,200	259	NC	1,230	342	NC	2,530	421	NC
PCB137	NC	1,220	119	NC	1,240	236	NC	2,830	398	NC
PCB139 & 140	NC	460	44.9	NC	415	86.5	NC	890	140	NC
PCB141	NC	4,440	438	NC	3,320	1,250	NC	6,470	844	NC
PCB142	NC	40.1 U	24.3 U	NC	42.1 U	39.7 U	NC	24.5 U	25.5 U	NC
PCB144	NC	1,060	102	NC	595	151	NC	1,140	187	NC
PCB145	NC	44.3 U	26.9 U	NC	46.5 U	43.9 U	NC	27.1 U	28.2 U	NC
PCB146	NC	7,830	783	NC	9,090	1,840	NC	9,350	1,460	NC
PCB147 & 149	NC	20,000	2,130	NC	9,800	1,970	NC	17,900	3,100	NC
PCB148	NC	123	42.9 U	NC	112	70.1 U	NC	109	45 U	NC
PCB150	NC	81.8	30.9 U	NC	46.5 U	50.5 U	NC	67.9	32.4 U	NC
PCB152	NC	55.2 U	33.4 U	NC	57.9 U	54.7 U	NC	38.6	35.1 U	NC
PCB153 & 168	NC	39,100	3,910	NC	38,500	11,900	NC	51,000	7,730	NC
PCB154	NC	726	75.7	NC	674	175	NC	866	134	NC
PCB155	NC	58 U	35.1 U	NC	60.9 U	57.5 U	NC	35.5 U	36.9 U	NC
PCB156 & 157	NC	2,490	292	NC	2,570	857	NC	5,510	816	NC
PCB158	NC	2,380	255	NC	2,310	777	NC	4,730	643	NC
PCB159	NC	118 U	71.4 U	NC	124 U	117 U	NC	72.1 U	75 U	NC
PCB160	NC	4.25 U	2.57 U	NC	4.46 U	4.21 U	NC	2.6 U	2.7 U	NC
PCB161	NC	56.1 U	34 U	NC	58.9 U	55.6 U	NC	34.3 U	35.7 U	NC
PCB162	NC	70.7	24.1 U	NC	83.5	39.5 U	NC	130	26.3	NC
PCB164	NC	1,470	155	NC	1,070	301	NC	2,040	280	NC
PCB165	NC	55.7 U	33.7 U	NC	69.8	55.1 U	NC	35.3	35.4 U	NC
PCB167	NC	1,170	138	NC	1,030	307	NC	2,050	290	NC
PCB169	NC	80.9	24.4	NC	98 J	37 U	NC	97.1 J	23.8 U	NC
PCB170	NC	5,320	645	NC	5,120	2,990	NC	7,230	896	NC
PCB171 & 173	NC	1,940	212	NC	1,780	919	NC	2,360	334	NC
PCB172	NC	1,270	130	NC	1,190	489	NC	1,460	200	NC
PCB174	NC	4,630	530	NC	2,370	608	NC	3,590	508	NC
PCB175	NC	313	42 U	NC	239	80.1	NC	285	44.1 U	NC
PCB176	NC	617	66.4	NC	285	85.5 U	NC	432	70.4	NC
PCB177	NC	4,110	482	NC	2,840	672	NC	3,480	488	NC
PCB178	NC	2,200	229	NC	2,700	607	NC	2,130	311	NC
PCB179	NC	2,490	272	NC	1,270	379	NC	1,920	333	NC
PCB180 & 193	NC	18,100	2,130	NC	25,400	8,890	NC	21,700	2,860	NC
PCB181	NC	63.2 U	38.3 U	NC	78.7	62.6 U	NC	127	40.2 U	NC
PCB182	NC	66.2	26 U	NC	81.2	62.6 U	NC	63.7	27.3 U	NC
PCB183 & 185	NC	6,200	661	NC	5,820	42.5	NC	6,390	922	NC
PCB184	NC	51.4 U	31.1 U	NC	54 U	50.9 U	NC	31.4 U	32.7 U	NC
PCB186	NC	74.5 U	45.1 U	NC	78.2 U	73.8 U	NC	45.6 U	47.4 U	NC
PCB187	NC	17,900	1,880	NC	22,200	3,920	NC	15,600	2,230	NC
PCB188	NC	59.9 U	36.3 U	NC	124	59.3 U	NC	36.6 U	38.1 U	NC
PCB189	NC	260	36.4	NC	287	133	NC	322	47.4	NC
PCB190	NC	667	106	NC	669	354	NC	719	115	NC
PCB191	NC	306	36.3 U	NC	324	145	NC	365	43.2	NC
PCB192	NC	41.5 U	25.1 U	NC	43.6 U	41.1 U	NC	25.4 U	26.4 U	NC
PCB194	NC	2,210	245	NC	6,080	1,410	NC	2,860	388	NC

PCB195	NC	992	113	NC	1,820	584	NC	1,250	178	NC
PCB196	NC	1,290	154	NC	3,460	740	NC	1,560	229	NC
PCB197 & 200	NC	355	59.3 U	NC	391	97 U	NC	297	62.3 U	NC
PCB198 & 199	NC	2,790	369	NC	7,460	1,000	NC	2,990	480	NC
PCB201	NC	445	47.1	NC	1,040	120	NC	384	64.5	NC
PCB202	NC	836	103	NC	1,630	246	NC	1,030	151	NC
PCB203	NC	1,950	223	NC	3,200	855	NC	2,520	342	NC
PCB204	NC	57.5 U	34.8 U	NC	60.3 U	57 U	NC	35.2 U	36.6 U	NC
PCB205	NC	133	34.7 U	NC	204	72.9	NC	159	36.4 U	NC
PCB206	NC	747	92.7	NC	6,770	344	NC	996	183	NC
PCB207	NC	115	68.6 U	NC	1,170	112 U	NC	151	72 U	NC
PCB208	NC	283	69.8 U	NC	2,740	114 U	NC	329	73.3 U	NC
PCB209	NC	296	53.4	NC	3,000	93.6	NC	442	89.1	NC

Monochlorobiphenyl homologs	NC	43.9 UT	25.1 T	NC	46 UT	43.5 UT	NC	83.6 T	26.9 T	NC
Dichlorobiphenyl homologs	NC	615 T	214 T	NC	877 T	293 T	NC	2,800 T	547 T	NC
Trichlorobiphenyl homologs	NC	6,120 T	1,100 T	NC	7,800 T	1,160 T	NC	36,800 T	6,030 T	NC
Tetrachlorobiphenyl homologs	NC	38,500 T	4,930 T	NC	38,600 T	6,490 T	NC	86,000 T	13,500 T	NC
Pentachlorobiphenyl homologs	NC	78,800 T	10,300 T	NC	64,000 T	14,000 T	NC	182,000 T	28,400 T	NC
Hexachlorobiphenyl homologs	NC	139,000 T	14,700 T	NC	117,000 JT	33,200 T	NC	191,000 JT	28,700 T	NC
Heptachlorobiphenyl homologs	NC	66,500 T	7,480 T	NC	72,800 T	20,400 T	NC	68,200 T	9,450 T	NC
Octachlorobiphenyl homologs	NC	11,000 T	1,300 T	NC	25,300 T	5,080 T	NC	13,100 T	1,880 T	NC
Nonachlorobiphenyl homologs	NC	1,150 T	162 T	NC	10,700 T	457 T	NC	1,480 T	256 T	NC
Total PCB Congeners (RI Calc; ND=0)	145,000 JT	342,000 JT	38,800 JT	214,000 JT	339,000 JT	78,800 JT	221,000 JT	582,000 JT	87,900 JT	367,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	147,000 JT	342,000 JT	40,300 JT	215,000 JT	340,000 JT	81,200 JT	223,000 JT	582,000 JT	88,900 JT	368,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	1.96 JT	3.13 JT	0.819 JT	2.16 JT	3.64 JT	0.152 JT	2.06 JT	12.1 JT	0.281 JT	6.98 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	5.51 JT	6.33 JT	2.75 JT	4.82 JT	6.99 JT	3.87 JT	5.58 JT	12.1 JT	2.67 JT	8.02 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	15.2 JT	20 JT	5.26 JT	13.8 JT	18.8 JT	6.55 JT	13.3 JT	40.6 JT	7.62 JT	26.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.255 JT	0.315 JT	0.122 JT	0.234 JT	0.321 JT	0.197 JT	0.265 JT	0.755 JT	0.162 JT	0.497 JT
% Lipids	NC	6.47	0.83	NC	12	1.57	NC	11.3	1.7	NC

Notes:

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported da
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting li

All concentrations are in units of ng/kg (except for the p

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

EPA1-SB08W-05	EPA1-SB08W-06			EPA1-SB09E-05			EPA1-SB10E-04			
LocationID										
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet
X-coordinate	7633514.59281	7633514.59281	7633514.59281	7630400.53156	7630400.53156	7630400.53156	7639620.34313	7639620.34313	7639620.34313	7641543.94531
Y-coordinate	696771.28347	696771.28347	696771.28347	699535.96925	699535.96925	699535.96925	694926.99167	694926.99167	694926.99167	692043.63381
RiverMile	8.8	8.8	8.8	8	8	8	9.9	9.9	9.9	10.5
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	10:00	10:00	10:00	16:50	16:50	16:50	14:13	14:13	14:13	12:57
Sample Mass (g)	106.82	88.4	195.22	205.65	131.12	336.77	197.46	141.64	339.1	142.25
PCB001	20.8 U	22.5 U	NC	80	33.5 U	NC	20.6 U	21.4 U	NC	21 U
PCB002	25.8 U	27.9 U	NC	43.9 U	41.5 U	NC	25.6 U	26.6 U	NC	26.1 U
PCB003	18.4	14.7 U	NC	23.1 U	21.9 U	NC	13.5 U	14 U	NC	15
PCB004	359	47.1	NC	1,150	256	NC	232	54.2	NC	281
PCB005	25.8 U	27.9 U	NC	43.9 U	41.5 U	NC	25.6 U	26.6 U	NC	26.1 U
PCB006	117	26.1 U	NC	142	38.8 U	NC	34.4	24.9 U	NC	30.7
PCB007	32.8 U	35.4 U	NC	55.7 U	52.7 U	NC	32.5 U	33.7 U	NC	33.1 U
PCB008	496	84.4	NC	478	129	NC	108	57.6	NC	134
PCB009	28.9	17.1 U	NC	50.3	25.4 U	NC	15.7 U	16.3 U	NC	16 U
PCB010	20.2	18.6 U	NC	72.2	27.7 U	NC	17.1 U	17.7 U	NC	17.4 U
PCB011	234	149	NC	230	218 U	NC	199	139 U	NC	286
PCB012 & 013	23.1 U	24.9 U	NC	39.2 U	37.1 U	NC	22.8 U	23.7 U	NC	23.3 U
PCB014	25.3 U	27.3 U	NC	42.9 U	40.6 U	NC	25 U	26 U	NC	25.5 U
PCB015	139	41.1 U	NC	221	61.2 U	NC	83.5	39.1 U	NC	66.5
PCB016	653	96.1	NC	557	143	NC	124	53.1	NC	113
PCB017	1,530	206	NC	795	195	NC	557	134	NC	494
PCB018 & 030	2,010	261	NC	1,550	377	NC	407	119 U	NC	431
PCB019	494	66.2	NC	743	161	NC	320	62.2	NC	657
PCB020 & 028	6,590	893	NC	2,900	636	NC	1,230	290	NC	1,220
PCB021 & 033	1,870	289	NC	435	201 U	NC	277	129 U	NC	214
PCB022	1,570	221	NC	740	162	NC	257	70.6	NC	195
PCB023	30.6 U	33 U	NC	51.9 U	49.1 U	NC	30.3 U	31.4 U	NC	30.8 U
PCB024	34.4	20.1 U	NC	32.1	29.9 U	NC	18.4 U	19.1 U	NC	18.8 U
PCB025	420	53.9	NC	197	44	NC	111	28 U	NC	110
PCB026 & 029	1,000	135	NC	497	109	NC	254	60 U	NC	214
PCB027	225	31.6	NC	149	42.4 U	NC	106	27.1 U	NC	107
PCB031	4,260	579	NC	1,790	401	NC	742	191	NC	621
PCB032	918	122 U	NC	515	124	NC	209	53.9	NC	247
PCB034	40.4	23.7 U	NC	37.3 U	35.3 U	NC	21.7 U	22.6 U	NC	22.1 U
PCB035	22.8 U	24.6 U	NC	38.7 U	36.6 U	NC	22.6 U	23.4 U	NC	23 U
PCB036	24.2 U	26.1 U	NC	41 U	38.8 U	NC	23.9 U	24.9 U	NC	24.4 U
PCB037	537	92.8	NC	296	71	NC	171	36	NC	201
PCB038	17.5 U	18.9 U	NC	29.7 U	28.1 U	NC	17.3 U	18 U	NC	17.7 U
PCB039	21.9 U	23.7 U	NC	37.3 U	35.3 U	NC	21.7 U	22.6 U	NC	22.1 U
PCB040 & 041 & 071	3,670	496	NC	1,160	250	NC	1,150	261	NC	990
PCB042	2,630	332	NC	1,100	229	NC	649	130	NC	460
PCB043 & 073	244	33 U	NC	137	49.1 U	NC	60.5	31.4 U	NC	87
PCB044 & 047 & 065	11,500	1,460	NC	7,070	1,460	NC	6,270	1,250	NC	4,880
PCB045 & 051	1,660	208	NC	977	212	NC	543	110	NC	848
PCB046	356	75 U	NC	147	112 U	NC	86	71.4 U	NC	98.4
PCB048	1,480	190	NC	466	99	NC	411	94.3	NC	305
PCB049 & 069	8,190	1,010	NC	4,740	970	NC	4,420	849	NC	3,270

PCB050 & 053	1,110	136	NC	451	100	NC	468	92.5	NC	1,380
PCB052	12,900	1,640	NC	7,360	1,530	NC	11,100	2,380	NC	6,380
PCB054	85.8	21.3 U	NC	86.1	31.7 U	NC	65.4	20.3 U	NC	189
PCB055	20.8 U	22.5 U	NC	35.4 U	33.5 U	NC	20.6 U	21.4 U	NC	21 U
PCB056	2,980	395	NC	1,210	248	NC	691	149	NC	352
PCB057	48.5	18.9 U	NC	29.7 U	28.1 U	NC	18.5	18 U	NC	19.4
PCB058	43.9	20.1 U	NC	31.6 U	29.9 U	NC	18.4 U	19.1 U	NC	18.8 U
PCB059 & 062 & 075	795	225 U	NC	418	335 U	NC	232	214 U	NC	210 U
PCB060	1,770	230	NC	931	187	NC	1,010	188	NC	476
PCB061 & 070 & 074 & 076	16,200	2,020	NC	8,160	1,640	NC	11,700	2,340	NC	3,950
PCB063	486	57.6	NC	271	54.4	NC	332	59.2	NC	189
PCB064	4,560	579	NC	2,130	445	NC	1,790	366	NC	923
PCB066	10,400	1,300	NC	5,170	1,030	NC	7,010	1,280	NC	3,490
PCB067	257	32.3	NC	132	26.8 U	NC	64.8	17.1 U	NC	76.9
PCB068	130	60 U	NC	100	89.3 U	NC	75.3	57.1 U	NC	118
PCB072	159	19.8	NC	114	22.3	NC	70.8	14.1	NC	85.7
PCB073	30.6 U	33 U	NC	51.9 U	0 U	NC	30.3 U	31.4 U	NC	30.8 U
PCB077	539	67.6	NC	327	66.3	NC	179	31.8	NC	176
PCB078	12.8 U	13.8 U	NC	21.7 U	20.5 U	NC	12.7 U	13.1 U	NC	12.9 U
PCB079	136	23.4 U	NC	93.5	34.8 U	NC	180	36.4	NC	51.8
PCB080	20.6 U	22.2 U	NC	34.9 U	33 U	NC	20.4 U	21.1 U	NC	20.7 U
PCB081	49.1	27 U	NC	42.5 U	40.2 U	NC	52.6	25.7 U	NC	25.2 U
PCB082	1,590	203	NC	761	149	NC	1,160	239	NC	302
PCB083	1,220	159	NC	561	113	NC	1,200	235	NC	555
PCB084	3,710	475	NC	2,140	440	NC	2,720	577	NC	1,160
PCB085 & 117 & 116	4,260	487	NC	2,970	528	NC	8,580	1,500	NC	1,890
PCB086 & 087 & 097 & 108 & 119 & 125	11,900	1,450	NC	7,940	1,530	NC	15,800	3,140	NC	5,150
PCB088 & 091	3,420	408	NC	2,130	422	NC	2,510	507	NC	1,460
PCB089	118	17.4 U	NC	42.2	25.9 U	NC	81.9	20.4	NC	44.2
PCB090 & 101 & 113	23,100	2,830	NC	16,100	3,080	NC	29,600	5,770	NC	20,400
PCB092	4,700	561	NC	3,330	640	NC	6,030	1,140	NC	3,300
PCB093 & 098 & 100 & 102	1,030	345 U	NC	914	513 U	NC	834	329 U	NC	1,120
PCB094	106	75 U	NC	118 U	112 U	NC	68.8 U	71.4 U	NC	138
PCB095	13,100	1,660	NC	7,900	1,600	NC	12,400	2,400	NC	8,560
PCB096	111	33.6 U	NC	71.9	50 U	NC	104	32 U	NC	174
PCB099	12,700	1,490	NC	9,890	1,860	NC	25,400	4,470	NC	7,960
PCB103	410	48.1	NC	372	72.1	NC	314	53.9	NC	430
PCB104	41.4 U	44.7 U	NC	70.3 U	66.5 U	NC	41 U	42.6 U	NC	41.8 U
PCB105	7,200	863	NC	5,640	1,060	NC	22,100	4,060	NC	3,850
PCB106	41.1 U	44.4 U	NC	69.8 U	66.1 U	NC	40.7 U	42.3 U	NC	41.5 U
PCB107 & 124	623	71.5	NC	464	89.7	NC	1,040	193	NC	255
PCB109	1,440	164	NC	1,380	251	NC	4,190	685	NC	1,210
PCB110 & 115	18,800	2,410	NC	13,100	2,620	NC	23,000	4,850	NC	9,640
PCB111	33.3	22.2 U	NC	34.9 U	33 U	NC	29.9	21.1 U	NC	99.7
PCB112	30.6 U	33 U	NC	51.9 U	49.1 U	NC	30.3 U	31.4 U	NC	30.8 U
PCB114	474	59.2	NC	477	84.9	NC	1,970	336	NC	338
PCB118	21,900	2,730	NC	20,000	3,860	NC	74,900	12,700	NC	18,000
PCB120	122	75 U	NC	118 U	112 U	NC	109	71.4 U	NC	186
PCB121	23.9	20.7 U	NC	32.5 U	30.8 U	NC	28.2	19.7 U	NC	57.7
PCB122	151	27.3 U	NC	119	40.6 U	NC	213	36.7	NC	35.2
PCB123	432	56.2	NC	410	81.2	NC	1,060	190	NC	248
PCB126	47.4	40.5 U	NC	63.7 U	60.3 U	NC	55.9	38.6 U	NC	39.3
PCB127	23.9 U	25.8 U	NC	40.6 U	38.4 U	NC	180	31.7	NC	49.6
PCB128 & 166	3,840	397	NC	2,940	522	NC	10,000	1,510	NC	4,070

PCB129 & 138 & 163	38,000	4,030	NC	31,800	5,340	NC	81,500	11,700	NC	93,900
PCB130	1,990	204	NC	1,560	266	NC	3,510	495	NC	2,900
PCB131	265	27.3	NC	171	37.9 U	NC	298	51.2	NC	229
PCB132	7,210	809	NC	4,520	808	NC	5,310	913	NC	9,220
PCB133	804	82.7	NC	713	116	NC	1,250	169	NC	2,820
PCB134 & 143	1,090	150 U	NC	815	223 U	NC	1,290	218	NC	1,760
PCB135 & 151	10,900	1,240	NC	8,720	1,510	NC	10,900	1,640	NC	23,600
PCB136	2,600	293	NC	2,090	372	NC	2,710	464	NC	6,690
PCB137	1,590	174	NC	1,550	268	NC	6,880	906	NC	1,490
PCB139 & 140	627	65.6	NC	482	79	NC	1,330	195	NC	398
PCB141	5,460	560	NC	4,120	717	NC	7,980	1,220	NC	15,500
PCB142	23.6 U	25.5 U	NC	40.1 U	37.9 U	NC	23.4 U	24.3 U	NC	23.8 U
PCB144	1,350	148	NC	942	154	NC	1,400	209	NC	3,340
PCB145	26.1 U	28.2 U	NC	44.3 U	42 U	NC	32 U	26.9 U	NC	26.4 U
PCB146	7,880	810	NC	7,210	1,200	NC	13,400	1,830	NC	26,400
PCB147 & 149	24,000	2,700	NC	15,900	2,850	NC	16,300	2,480	NC	31,000
PCB148	129	45 U	NC	116	67 U	NC	90.8	42.9 U	NC	214
PCB150	84.1	32.4 U	NC	72	48.2 U	NC	58.4	30.9 U	NC	80.1
PCB152	32.5 U	35.1 U	NC	55.2 U	52.2 U	NC	42.7	33.4 U	NC	49.2
PCB153 & 168	40,000	4,200	NC	36,300	5,930	NC	78,800	10,600	NC	123,000
PCB154	772	80.9	NC	716	114	NC	823	111	NC	1,210
PCB155	34.2 U	36.9 U	NC	58 U	54.9 U	NC	33.9 U	35.1 U	NC	34.5 U
PCB156 & 157	3,060	355	NC	3,560	612	NC	13,400	2,030	NC	7,090
PCB158	3,010	316	NC	2,350	410	NC	7,880	1,140	NC	6,320
PCB159	69.4 U	75 U	NC	118 U	112 U	NC	68.8 U	71.4 U	NC	70.1 U
PCB160	2.5 U	2.7 U	NC	4.25 U	4.02 U	NC	2.48 U	2.57 U	NC	2.52 U
PCB161	33.1 U	35.7 U	NC	56.1 U	53.1 U	NC	32.8 U	34 U	NC	33.4 U
PCB162	93	25.4 U	NC	91.2	37.7 U	NC	330	46.8	NC	129 J
PCB164	1,700	166	NC	1,490	244	NC	2,130	354	NC	3,870
PCB165	32.8 U	35.4 U	NC	55.7 U	52.7 U	NC	49.5	33.7 U	NC	138
PCB167	1,310	148	NC	1,470	245	NC	4,070	609	NC	3,030
PCB169	86.4 J	23.8 U	NC	43.4 J	35.4 U	NC	160	22.6 U	NC	790 J
PCB170	4,430	571	NC	5,240	951	NC	10,600	1,790	NC	27,800
PCB171 & 173	1,990	214	NC	1,580	281	NC	3,690	540	NC	9,270
PCB172	1,190	126	NC	1,140	184	NC	2,130	300	NC	6,530
PCB174	4,350	479	NC	3,830	706	NC	3,720	572	NC	17,500
PCB175	299	44.1 U	NC	278	65.6 U	NC	393	60	NC	1,630
PCB176	610	68.2	NC	440	84.3	NC	378	54.4	NC	1,720
PCB177	3,990	430	NC	3,320	590	NC	4,090	617	NC	20,700
PCB178	1,930	208	NC	1,860	306	NC	2,530	369	NC	7,960
PCB179	2,230	255	NC	1,860	341	NC	1,610	247	NC	7,740
PCB180 & 193	14,800	1,830	NC	17,400	3,010	NC	32,600	5,160	NC	94,500
PCB181	60.9	40.2 U	NC	71.1	59.8 U	NC	199	38.3 U	NC	185
PCB182	50.2	27.3 U	NC	45.8	40.6 U	NC	63.5	26 U	NC	200
PCB183 & 185	5,680	611	NC	5,060	881	NC	9,130	1,310	NC	29,000
PCB184	30.3 U	32.7 U	NC	51.4 U	48.7 U	NC	30 U	31.1 U	NC	30.6 U
PCB186	43.9 U	47.4 U	NC	74.5 U	70.5 U	NC	43.5 U	45.1 U	NC	44.3 U
PCB187	13,000	1,400	NC	13,500	2,220	NC	17,600	2,610	NC	68,100
PCB188	35.3 U	38.1 U	NC	59.9 U	56.7 U	NC	39.8	36.3 U	NC	113
PCB189	238	26.2	NC	297	44.9	NC	625	91.1	NC	1,810
PCB190	403	77.4	NC	693	161	NC	1,140	244	NC	3,680
PCB191	266	38.1 U	NC	289	56.7 U	NC	644	91.2	NC	2,010
PCB192	24.4 U	26.4 U	NC	41.5 U	39.3 U	NC	24.2 U	25.1 U	NC	24.7 U
PCB194	2,090	251	NC	2,510	392	NC	4,150	625	NC	18,300

PCB195	973	115	NC	1,080	171	NC	1,830	282	NC	8,140
PCB196	1,120	152	NC	1,430	235	NC	1,940	340	NC	8,620
PCB197 & 200	339	62.3 U	NC	318	92.7 U	NC	338	59.3 U	NC	1,650
PCB198 & 199	2,210	342	NC	2,830	548	NC	2,680	555	NC	12,600
PCB201	430	46.7	NC	429	70.3	NC	489	75.4	NC	3,020
PCB202	891	98.4	NC	815	138	NC	957	142	NC	2,900
PCB203	1,780	226	NC	1,950	328	NC	2,580	420	NC	8,880
PCB204	33.9 U	36.6 U	NC	57.5 U	54.4 U	NC	33.6 U	34.8 U	NC	34.2 U
PCB205	137	36.4 U	NC	130	54.2 U	NC	255	39.9	NC	1,010
PCB206	891	124	NC	827	152	NC	961	156	NC	3,080
PCB207	145	72 U	NC	134	107 U	NC	178	68.6 U	NC	622
PCB208	379	73.3 U	NC	276	109 U	NC	242	69.8 U	NC	639
PCB209	481	82	NC	374	77.8	NC	251	53.1	NC	302

Monochlorobiphenyl homologs	28.8 T	27.9 UT	NC	91.6 T	41.5 UT	NC	25.6 UT	26.6 UT	NC	25.5 T
Dichlorobiphenyl homologs	1,390 T	332 T	NC	2,340 T	571 T	NC	673 T	230 T	NC	815 T
Trichlorobiphenyl homologs	22,200 T	3,030 T	NC	11,200 T	2,610 T	NC	4,800 T	1,110 T	NC	4,860 T
Tetrachlorobiphenyl homologs	82,400 T	10,400 T	NC	42,800 T	8,930 T	NC	48,700 T	9,880 T	NC	28,900 T
Pentachlorobiphenyl homologs	133,000 T	16,500 T	NC	97,000 T	19,000 T	NC	236,000 T	43,400 T	NC	86,700 T
Hexachlorobiphenyl homologs	158,000 JT	17,000 T	NC	130,000 JT	22,100 T	NC	272,000 T	39,000 T	NC	369,000 JT
Heptachlorobiphenyl homologs	55,500 T	6,410 T	NC	57,000 T	9,920 T	NC	91,200 T	14,100 T	NC	300,000 T
Octachlorobiphenyl homologs	9,970 T	1,280 T	NC	11,500 T	1,960 T	NC	15,200 T	2,510 T	NC	65,100 T
Nonachlorobiphenyl homologs	1,420 T	197 T	NC	1,240 T	260 T	NC	1,380 T	225 T	NC	4,340 T
Total PCB Congeners (RI Calc; ND=0)	464,000 JT	54,000 JT	278,000 JT	353,000 JT	63,500 JT	240,000 JT	670,000 JT	109,000 JT	436,000 JT	861,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	464,000 JT	55,300 JT	279,000 JT	353,000 JT	65,500 JT	241,000 JT	670,000 JT	111,000 JT	436,000 JT	861,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	8.44 JT	0.134 JT	4.68 JT	2.29 JT	0.186 JT	1.47 JT	14 T	0.604 JT	8.39 JT	28.7 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	8.44 JT	2.52 JT	5.76 JT	5.48 JT	3.74 JT	4.8 JT	14 T	2.88 JT	9.33 JT	28.7 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	38 JT	6.92 JT	23.9 JT	22.9 JT	8.58 JT	17.3 JT	24.5 T	5.59 JT	16.6 JT	16.1 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.493 JT	0.137 JT	0.332 JT	0.364 JT	0.198 JT	0.299 JT	0.922 T	0.207 JT	0.623 JT	0.432 JT
% Lipids	6.85	0.81	NC	7.89	1.37	NC	5.39	1.07	NC	8.72

Notes:

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

All concentrations are in units of ng/kg (except for the proof and rinsate b

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

EPA1-SB10E-04 LocationID	EPA1-SB10E-06			EPA1-SB11E-07			EPA1-SB11E-08			
Tissue	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet
X-coordinate	7641543.94531	7641543.94531	7640465.85256	7640465.85256	7640465.85256	7643279.64269	7643279.64269	7643279.64269	7644062.92954	7644062.92954
Y-coordinate	692043.63381	692043.63381	693421.94952	693421.94952	693421.94952	690016.34775	690016.34775	690016.34775	689439.28177	689439.28177
RiverMile	10.5	10.5	10.2	10.2	10.2	11	11	11	11.2	11.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11
Sample Time	12:57	12:57	13:50	13:50	13:50	7:05	7:05	7:05	12:00	12:00
Sample Mass (g)	110.29	252.54	48.64	40.99	89.63	574.32	470.73	1045.05	220.34	160.94
PCB001	22.5 U	NC	37.5 U	36.1 U	NC	35.7 U	36.4 U	NC	143 U	75 U
PCB002	27.9 U	NC	46.5 U	44.7 U	NC	44.3 U	45.1 U	NC	177 U	93 U
PCB003	14.7 U	NC	24.5 U	23.6 U	NC	23.3 U	23.8 U	NC	93.3 U	49 U
PCB004	62	NC	164	73.1 U	NC	563	73.8	NC	394	152 U
PCB005	27.9 U	NC	46.5 U	44.7 U	NC	44.3 U	45.1 U	NC	177 U	93 U
PCB006	26.1 U	NC	43.5 U	41.8 U	NC	57	42.2 U	NC	166 U	87 U
PCB007	35.4 U	NC	59 U	56.7 U	NC	56.2 U	57.3 U	NC	225 U	118 U
PCB008	48.3	NC	130	75.5	NC	232	153	NC	187 U	98 U
PCB009	17.1 U	NC	28.5 U	27.4 U	NC	27.1 U	27.7 U	NC	109 U	57 U
PCB010	18.6 U	NC	31 U	29.8 U	NC	29.5 U	30.1 U	NC	118 U	62 U
PCB011	154	NC	244 U	235 U	NC	610	324	NC	930 U	488 U
PCB012 & 013	24.9 U	NC	41.5 U	39.9 U	NC	39.5 U	40.3 U	NC	158 U	83 U
PCB014	27.3 U	NC	45.5 U	43.8 U	NC	43.3 U	44.2 U	NC	173 U	91 U
PCB015	41.1 U	NC	68.5 U	65.9 U	NC	179	127	NC	261 U	137 U
PCB016	41.6	NC	117	56.3	NC	243	121	NC	210 U	110 U
PCB017	123	NC	408	91.5	NC	1,910	576	NC	1,070	247
PCB018 & 030	118 U	NC	365	117	NC	925	343	NC	413	109
PCB019	137	NC	342	51.7	NC	3,090	840	NC	1,620	336
PCB020 & 028	309	NC	1,450	323	NC	2,650	1,010	NC	1,520	372
PCB021 & 033	135 U	NC	225 U	217 U	NC	740	333	NC	859 U	451 U
PCB022	67.9	NC	293	85.6	NC	522	232	NC	190 U	100 U
PCB023	33 U	NC	55 U	52.9 U	NC	52.4 U	53.4 U	NC	210 U	110 U
PCB024	20.1 U	NC	33.5 U	32.2 U	NC	31.9 U	32.5 U	NC	128 U	67 U
PCB025	29.4 U	NC	126	47.1 U	NC	340	104	NC	187 U	98 U
PCB026 & 029	63 U	NC	281	101 U	NC	489	166	NC	400 U	210 U
PCB027	28.5 U	NC	80.9	45.7 U	NC	456	124	NC	291	95 U
PCB031	182	NC	882	213	NC	1,460	587	NC	465	194 U
PCB032	63.1 U	NC	183	52.8	NC	960	293	NC	416	99.8 U
PCB034	23.7 U	NC	39.5 U	38 U	NC	37.6 U	38.3 U	NC	150 U	79 U
PCB035	24.6 U	NC	41 U	39.4 U	NC	39 U	36.4 U	NC	156 U	82 U
PCB036	26.1 U	NC	43.5 U	41.8 U	NC	41.4 U	42.2 U	NC	166 U	87 U
PCB037	60.3	NC	146	39.4	NC	347	163	NC	209	67 U
PCB038	18.9 U	NC	31.5 U	30.3 U	NC	30 U	23.8 U	NC	120 U	63 U
PCB039	23.7 U	NC	39.5 U	38 U	NC	37.6 U	30.6 U	NC	150 U	79 U
PCB040 & 041 & 071	230	NC	696	119	NC	2,570	796	NC	1,950	420
PCB042	105	NC	597	93.5	NC	988	298	NC	564	124
PCB043 & 073	33 U	NC	85.4	52.9 U	NC	324	110	NC	623	136 U
PCB044 & 047 & 065	1,050	NC	4,380	608	NC	21,400	6,370	NC	19,900	3,980
PCB045 & 051	180	NC	584	88.6	NC	4,500	1,330	NC	3,070	650
PCB046	75 U	NC	125 U	120 U	NC	321	45.1 U	NC	476 U	250 U
PCB048	74.5	NC	264	47.2	NC	553	183	NC	432	97.3
PCB049 & 069	700	NC	2,820	375	NC	10,900	3,270	NC	8,800	1,760

PCB050 & 053	285	NC	397	63.5 U	NC	5,060	1,460	NC	4,400	927
PCB052	1,400	NC	4,430	600	NC	15,900	4,900	NC	17,100	3,460
PCB054	39.4	NC	76.4	34.1 U	NC	1,050	293	NC	665	136
PCB055	22.5 U	NC	37.5 U	36.1 U	NC	35.7 U	36.4 U	NC	143 U	75 U
PCB056	91.7	NC	707	99.4	NC	703	233	NC	321	93 U
PCB057	18.9 U	NC	31.5 U	30.3 U	NC	34.3	30.6 U	NC	120 U	63 U
PCB058	20.1 U	NC	33.5 U	32.2 U	NC	42.4	32.5 U	NC	128 U	67 U
PCB059 & 062 & 075	225 U	NC	375 U	361 U	NC	710	364 U	NC	1,430 U	750 U
PCB060	108	NC	554	77.2	NC	777	249	NC	472	103
PCB061 & 070 & 074 & 076	868	NC	4,830	637	NC	6,650	2,060	NC	6,740	1,370
PCB063	39	NC	168	28.4 U	NC	276	81.1	NC	401	78.9
PCB064	206	NC	1,180	170	NC	1,620	499	NC	781	250 U
PCB066	755	NC	3,280	424	NC	4,600	1,440	NC	5,800	1,180
PCB067	18 U	NC	73.9	28.8 U	NC	199	54.9	NC	217	60 U
PCB068	60 U	NC	100 U	96.2 U	NC	186	97.1 U	NC	634	200 U
PCB072	18.3	NC	77.9	21.6 U	NC	163	49.4	NC	250	48.7
PCB073	33 U	NC	55 U	52.9 U	NC	52.4 U	53.4 U	NC	210 U	110 U
PCB077	40.6	NC	204	44.2 U	NC	216	67.2	NC	246	92 U
PCB078	13.8 U	NC	23 U	22.1 U	NC	21.9 U	22.3 U	NC	87.6 U	46 U
PCB079	23.4 U	NC	48.1	37.5 U	NC	74.8	37.9 U	NC	156	78 U
PCB080	22.2 U	NC	37 U	35.6 U	NC	35.2 U	35.9 U	NC	141 U	74 U
PCB081	27 U	NC	45 U	43.3 U	NC	42.9 U	43.7 U	NC	171 U	90 U
PCB082	66.7	NC	452	57.7	NC	566	165	NC	813	127
PCB083	93.7	NC	388	63.9 U	NC	1,040	221	NC	2,020	422
PCB084	249	NC	1,200	159	NC	2,200	654	NC	3,770	776
PCB085 & 117 & 116	367	NC	1,700	201	NC	3,620	977	NC	5,400	1,100
PCB086 & 087 & 097 & 108 & 119 & 125	1,090	NC	4,690	721 U	NC	12,300	3,420	NC	23,700	4,710
PCB088 & 091	300	NC	1,280	158	NC	3,960	1,130	NC	6,720	1,360
PCB089	17.4 U	NC	29 U	27.9 U	NC	65.8	28.2 U	NC	124	58 U
PCB090 & 101 & 113	4,150	NC	10,700	1,280	NC	56,600	15,400	NC	141,000	27,500
PCB092	661	NC	2,220	263	NC	9,470	2,600	NC	18,100	3,650
PCB093 & 098 & 100 & 102	345 U	NC	619	553 U	NC	4,870	1,330	NC	5,010	1,150 U
PCB094	75 U	NC	125 U	120 U	NC	437	125	NC	779	250 U
PCB095	1,780	NC	5,340	662	NC	25,100	7,210	NC	56,100	11,300
PCB096	36.3	NC	56 U	53.8 U	NC	714	187	NC	762	154
PCB099	1,640	NC	6,480	730	NC	19,100	4,820	NC	32,500	6,320
PCB103	83.9	NC	318	44.2 U	NC	1,600	434	NC	2,430	466
PCB104	44.7 U	NC	74.5 U	71.6 U	NC	129	72.3 U	NC	284 U	149 U
PCB105	770	NC	3,180	387	NC	6,540	2,060	NC	9,750	2,050
PCB106	44.4 U	NC	74 U	71.2 U	NC	70.5 U	71.8 U	NC	282 U	148 U
PCB107 & 124	53.8	NC	294	52.4 U	NC	444	124	NC	933	190
PCB109	235	NC	912	104	NC	1,730	473	NC	3,980	764
PCB110 & 115	2,060	NC	7,830	968	NC	24,100	6,700	NC	50,200	10,300
PCB111	22.2 U	NC	37 U	35.6 U	NC	89.8	35.9 U	NC	297	74 U
PCB112	33 U	NC	55 U	52.9 U	NC	52.4 U	53.4 U	NC	210 U	110 U
PCB114	67.6	NC	223	59.1 U	NC	569	158	NC	1,000	189
PCB118	3,650	NC	12,200	1,370	NC	36,700	10,400	NC	78,900	16,700
PCB120	75 U	NC	125 U	120 U	NC	298	121 U	NC	697	250 U
PCB121	20.7 U	NC	34.5 U	33.2 U	NC	192	52	NC	233	69 U
PCB122	27.3 U	NC	68.5	43.8 U	NC	94.2	44.2 U	NC	173 U	91 U
PCB123	63.3	NC	261	55.8 U	NC	391	132	NC	744	146
PCB126	40.5 U	NC	67.5 U	64.9 U	NC	86.7 J	65.5 U	NC	257 U	135 U
PCB127	25.8 U	NC	43 U	41.3 U	NC	83.4	41.7 U	NC	164 U	86 U
PCB128 & 166	713	NC	2,160	224	NC	14,600	4,050	NC	25,300	5,250

PCB129 & 138 & 163	15,800	NC	29,600	3,130	NC	133,000 J	79,600	NC	740,000	146,000
PCB130	477	NC	1,460	156	NC	5,720	1,540	NC	18,600	3,760
PCB131	41.7	NC	118	40.9 U	NC	515	148	NC	1,750	362
PCB132	1,670	NC	3,510	386	NC	20,400	5,830	NC	76,100	15,800
PCB133	454	NC	1,290	124	NC	4,660	1,200	NC	12,100	2,410
PCB134 & 143	304	NC	603	240 U	NC	4,480	1,180	NC	14,500	3,070
PCB135 & 151	4,210	NC	8,690	934	NC	90,900	21,600	NC	209,000	41,900
PCB136	1,220	NC	1,610	177	NC	20,200	4,900	NC	52,300	10,900
PCB137	273	NC	1,050	139 U	NC	2,740	553	NC	5,410	1,110
PCB139 & 140	70.3	NC	344	57.7 U	NC	1,190	298	NC	1,620	326
PCB141	2,610	NC	4,140	438	NC	57,800	16,500	NC	134,000	26,300
PCB142	25.5 U	NC	42.5 U	40.9 U	NC	40.5 U	41.3 U	NC	162 U	85 U
PCB144	594	NC	840	88.7	NC	9,980	2,380	NC	29,500	6,080
PCB145	28.2 U	NC	47 U	45.2 U	NC	44.8 U	45.6 U	NC	179 U	94 U
PCB146	4,280	NC	11,400	1,110	NC	52,000	13,300	NC	151,000	29,700
PCB147 & 149	5,520	NC	16,400	1,730	NC	69,500	18,400	NC	287,000	56,700
PCB148	45 U	NC	197	72.1 U	NC	380	90.3	NC	550	150 U
PCB150	32.4 U	NC	84.5	51.9 U	NC	268	60.7	NC	479	108 U
PCB152	35.1 U	NC	58.5 U	56.3 U	NC	299	71.7	NC	348	117 U
PCB153 & 168	20,700	NC	36,700	3,690	NC	184,000 J	105,000	NC	948,000	188,000
PCB154	198	NC	994	98.5	NC	3,180	706	NC	3,900	762
PCB155	36.9 U	NC	61.5 U	59.1 U	NC	93.9	59.7 U	NC	234 U	123 U
PCB156 & 157	1,440	NC	2,270	257	NC	22,700	6,430	NC	65,800	12,700
PCB158	1,070	NC	2,030	208	NC	25,700	6,920	NC	52,200	10,300
PCB159	137	NC	125 U	120 U	NC	521	121 U	NC	476 U	250 U
PCB160	2.7 U	NC	4.5 U	4.33 U	NC	4.29 U	4.37 U	NC	17.1 U	9 U
PCB161	35.7 U	NC	59.5 U	57.2 U	NC	56.7 U	57.8 U	NC	227 U	119 U
PCB162	40	NC	54.6	40.6 U	NC	375	189	NC	661	146
PCB164	649	NC	1,370	145	NC	11,400	3,280	NC	34,100	6,980
PCB165	35.4 U	NC	59 U	56.7 U	NC	274	69.2	NC	630	129
PCB167	571	NC	996	111	NC	7,520	1,990	NC	24,800	4,700
PCB169	56.2 U	NC	84.8 J	38.1 U	NC	990 J	322 J	NC	318 J	79.2 U
PCB170	6,190	NC	5,540	651	NC	125,000	35,600	NC	372,000	64,500
PCB171 & 173	1,740	NC	1,850	201	NC	40,500	10,800	NC	97,900	18,400
PCB172	1,210	NC	1,700	174	NC	24,000	6,380	NC	70,500	12,600
PCB174	3,270	NC	6,650	711	NC	44,900	11,400	NC	224,000	43,100
PCB175	280	NC	405	70.7 U	NC	4,950	1,190	NC	17,200	3,230
PCB176	309	NC	725	88 U	NC	4,630	1,180	NC	21,700	4,370
PCB177	3,810	NC	5,380	577	NC	40,100	10,900	NC	203,000	38,600
PCB178	1,420	NC	3,430	348	NC	29,800	7,440	NC	81,900	15,500
PCB179	1,520	NC	2,240	250	NC	29,700	7,550	NC	93,200	18,300
PCB180 & 193	21,200	NC	24,200	2,750	NC	196,000 J	105,000	NC	1,150,000	217,000
PCB181	40.2 U	NC	67 U	64.4 U	NC	505	133	NC	1,480	264
PCB182	36.6	NC	222	43.8 U	NC	325	74.1	NC	173 U	91 U
PCB183 & 185	5,230	NC	7,670	790	NC	108,000	29,500	NC	312,000	57,600
PCB184	32.7 U	NC	54.5 U	52.4 U	NC	55.5	52.9 U	NC	208 U	109 U
PCB186	47.4 U	NC	79 U	76 U	NC	75.2 U	76.7 U	NC	301 U	158 U
PCB187	11,900	NC	27,900	2,830	NC	102,000 J	43,100	NC	602,000	122,000
PCB188	38.1 U	NC	69.1	61.1 U	NC	179	61.7 U	NC	639	127 U
PCB189	320	NC	301	34.8 U	NC	6,890	1,720	NC	17,600	3,210
PCB190	834	NC	669	106	NC	19,100	7,360	NC	60,200	12,700
PCB191	363	NC	356	61.1 U	NC	7,210	1,820	NC	19,600	3,470
PCB192	26.4 U	NC	44 U	42.3 U	NC	41.9 U	42.7 U	NC	168 U	88 U
PCB194	3,670	NC	5,420	562	NC	76,800	22,500	NC	168,000	28,900

PCB195	1,570	NC	1,820	186	NC	32,000	9,180	NC	76,700	13,400
PCB196	2,060	NC	2,770	330	NC	40,800	11,200	NC	87,600	17,000
PCB197 & 200	304	NC	934	99.8 U	NC	5,430	1,450	NC	20,300	3,700
PCB198 & 199	3,100	NC	7,340	932	NC	56,900	16,800	NC	190,000	34,000
PCB201	522	NC	1,400	143	NC	7,510	1,940	NC	26,700	4,970
PCB202	554	NC	2,370	240	NC	12,500	3,370	NC	27,400	5,000
PCB203	1,880	NC	4,530	490	NC	49,600	13,300	NC	87,000	15,700
PCB204	36.6 U	NC	60.9 U	58.6 U	NC	58 U	59.2 U	NC	232 U	122 U
PCB205	188	NC	258	58.3 U	NC	4,980	1,300	NC	9,290	1,610
PCB206	609	NC	2,590	299	NC	14,500	4,450	NC	26,600	4,820
PCB207	121	NC	482	115 U	NC	2,170	629	NC	4,830	918
PCB208	127	NC	848	118 U	NC	2,060	596	NC	4,600	888
PCB209	71.8	NC	259	53.1 U	NC	512	174	NC	519	116

Monochlorobiphenyl homologs	27.9 UT	NC	46.5 UT	44.7 UT	NC	44.3 UT	45.1 UT	NC	177 UT	93 UT
Dichlorobiphenyl homologs	316 T	NC	502 T	312 T	NC	1,670 T	728 T	NC	1,280 T	488 UT
Trichlorobiphenyl homologs	1,180 T	NC	4,860 T	1,300 T	NC	14,200 T	4,950 T	NC	7,200 T	1,920 T
Tetrachlorobiphenyl homologs	6,460 T	NC	25,800 T	3,860 T	NC	79,900 T	24,100 T	NC	74,800 T	15,500 T
Pentachlorobiphenyl homologs	17,800 T	NC	60,700 T	7,420 T	NC	213,000 JT	59,000 T	NC	446,000 T	89,400 T
Hexachlorobiphenyl homologs	63,200 T	NC	128,000 JT	13,500 T	NC	745,000 JT	297,000 JT	NC	2,890,000 JT	574,000 T
Heptachlorobiphenyl homologs	59,700 T	NC	89,400 T	9,630 T	NC	784,000 JT	281,000 T	NC	3,350,000 T	635,000 T
Octachlorobiphenyl homologs	13,800 T	NC	26,800 T	2,960 T	NC	287,000 T	81,000 T	NC	693,000 T	124,000 T
Nonachlorobiphenyl homologs	857 T	NC	3,920 T	416 T	NC	18,700 T	5,680 T	NC	36,000 T	6,630 T
Total PCB Congeners (RI Calc; ND=0)	162,000 JT	556,000 JT	339,000 JT	36,400 JT	201,000 JT	2,140,000 JT	753,000 JT	1,520,000 JT	7,490,000 JT	1,440,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	163,000 JT	556,000 JT	340,000 JT	39,500 JT	203,000 JT	2,140,000 JT	754,000 JT	1,520,000 JT	7,490,000 JT	1,450,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.211 JT	16.2 JT	3.15 JT	0.0638 JT	1.74 JT	40.8 JT	10.4 JT	27.1 JT	15.5 JT	1.19 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.08 JT	17.5 JT	6.53 JT	3.89 JT	5.32 JT	40.8 JT	13.6 JT	28.6 JT	28.4 JT	9.15 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	5.71 JT	11.6 JT	16.6 JT	6.62 JT	12 JT	26.1 JT	10.1 JT	18.9 JT	42.9 JT	15.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.148 JT	0.308 JT	0.302 JT	0.187 JT	0.249 JT	0.922 JT	0.312 JT	0.647 JT	1.72 JT	0.565 JT
% Lipids	1.57	NC	7.2	0.88	NC	12.5	3.71	NC	5.21	0.44

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 5

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

PA1-SB11E-08	Location ID	EPA1-SB11E-09		EPA1-SB11E-10			EPA1-SB11W-05				
	Tissue	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
	X-coordinate	7644062.92954	7643687.40638	7643687.40638	7643687.40638	7643305.44481	7643305.44481	7643305.44481	7645552.1395	7645552.1395	7645552.1395
	Y-coordinate	689439.28177	689713.21524	689713.21524	689713.21524	689983.13427	689983.13427	689983.13427	686305.25469	686305.25469	686305.25469
	RiverMile	11.2	11.1	11.1	11.1	11.1	11.1	11.1	11.9	11.9	11.9
	Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11
	Sample Time	12:00	12:36	12:36	12:36	13:30	13:30	13:30	8:22	8:22	8:22
	Sample Mass (g)	381.28	439.93	341.94	781.87	377.44	265.84	643.28	105.36	89.88	195.24
	PCB001	NC	35.7 U	36.4 U	NC	32.9 U	36.8 U	NC	21.8 U	22.3 U	NC
	PCB002	NC	44.3 U	45.1 U	NC	40.8 U	45.6 U	NC	27.1 U	27.6 U	NC
	PCB003	NC	23.3 U	23.8 U	NC	21.5 U	24 U	NC	17.1	14.6 U	NC
	PCB004	NC	210	73.8 U	NC	118	74.5 U	NC	641	114	NC
	PCB005	NC	44.3 U	45.1 U	NC	40.8 U	45.6 U	NC	27.1 U	27.6 U	NC
	PCB006	NC	41.4 U	42.2 U	NC	38.2 U	42.6 U	NC	225	40.9	NC
	PCB007	NC	56.2 U	57.3 U	NC	51.8 U	57.8 U	NC	34.4 U	35 U	NC
	PCB008	NC	136	79.2	NC	49.8	48 U	NC	668	143	NC
	PCB009	NC	27.1 U	27.7 U	NC	25 U	27.9 U	NC	41.3	16.9 U	NC
	PCB010	NC	29.5 U	30.1 U	NC	27.2 U	30.4 U	NC	23.5	18.4 U	NC
	PCB011	NC	264	237 U	NC	214 U	239 U	NC	192	151	NC
	PCB012 & 013	NC	39.5 U	40.3 U	NC	36.4 U	40.7 U	NC	24.2 U	24.7 U	NC
	PCB014	NC	43.3 U	44.2 U	NC	39.9 U	44.6 U	NC	26.5 U	27 U	NC
	PCB015	NC	112	80.4	NC	60.1 U	67.2 U	NC	136	42.2	NC
	PCB016	NC	111	65.9	NC	48.2 U	53.9 U	NC	519	113	NC
	PCB017	NC	276	103	NC	225	60.3 U	NC	1,560	276	NC
	PCB018 & 030	NC	312	135 U	NC	160	43.8	NC	1,830	330	NC
	PCB019	NC	331	93.4	NC	308	52.4	NC	1,180	189	NC
	PCB020 & 028	NC	1,060	439	NC	589	138	NC	3,830	706	NC
	PCB021 & 033	NC	258	219 U	NC	198 U	221 U	NC	1,000	209	NC
	PCB022	NC	211	116	NC	87.8	49 U	NC	792	151	NC
	PCB023	NC	52.4 U	53.4 U	NC	48.2 U	53.9 U	NC	32 U	32.7 U	NC
	PCB024	NC	31.9 U	32.5 U	NC	29.4 U	32.8 U	NC	29	19.9 U	NC
	PCB025	NC	61.6	47.6 U	NC	45.4	48 U	NC	415	71.6	NC
	PCB026 & 029	NC	154	102 U	NC	101	103 U	NC	769	134	NC
	PCB027	NC	55.9	46.1 U	NC	44.7	46.6 U	NC	343	61.1	NC
	PCB031	NC	548	257	NC	249	95.1 U	NC	2,640	491	NC
	PCB032	NC	148	65.1	NC	103	25	NC	932	168 U	NC
	PCB034	NC	37.6 U	38.3 U	NC	34.6 U	38.7 U	NC	23 U	23.5 U	NC
	PCB035	NC	39 U	39.8 U	NC	36 U	40.2 U	NC	23.9 U	24.4 U	NC
	PCB036	NC	41.4 U	42.2 U	NC	38.2 U	42.6 U	NC	25.3 U	25.8 U	NC
	PCB037	NC	173	96.7	NC	67.6	32.8 U	NC	351	71.7	NC
	PCB038	NC	30 U	30.6 U	NC	27.6 U	30.9 U	NC	18.3 U	18.7 U	NC
	PCB039	NC	37.6 U	38.3 U	NC	34.6 U	38.7 U	NC	23 U	23.5 U	NC
	PCB040 & 041 & 071	NC	422	149	NC	444	89.8	NC	2,280	381	NC
	PCB042	NC	232	78.1	NC	254	49.3	NC	1,060	182	NC
	PCB043 & 073	NC	52.4 U	53.4 U	NC	49.8	53.9 U	NC	293	52.4	NC
	PCB044 & 047 & 065	NC	2,610	700	NC	4,310	680	NC	15,300	2,430	NC
	PCB045 & 051	NC	274	84.6	NC	525	88.2	NC	3,670	586	NC
	PCB046	NC	119 U	121 U	NC	110 U	123 U	NC	263	74.3 U	NC
	PCB048	NC	156	55.5	NC	147	29.6	NC	581	100	NC
	PCB049 & 069	NC	1,620	424	NC	2,310	365	NC	9,800	1,570	NC

PCB050 & 053	NC	257	73.2	NC	499	80.2	NC	3,220	501	NC
PCB052	NC	2,990	789	NC	3,660	589	NC	9,680	1,650	NC
PCB054	NC	58.9	34.5 U	NC	92.9	34.8 U	NC	392	63.9	NC
PCB055	NC	35.7 U	36.4 U	NC	32.9 U	36.8 U	NC	21.8 U	22.3 U	NC
PCB056	NC	216	74.5	NC	167	45.6 U	NC	952	170	NC
PCB057	NC	30 U	30.6 U	NC	27.6 U	30.9 U	NC	22.4	18.7 U	NC
PCB058	NC	31.9 U	32.5 U	NC	29.4 U	32.8 U	NC	24.2	19.9 U	NC
PCB059 & 062 & 075	NC	357 U	364 U	NC	329 U	368 U	NC	441	223 U	NC
PCB060	NC	436	121	NC	377	65.8	NC	573	100	NC
PCB061 & 070 & 074 & 076	NC	3,290	850	NC	2,780	476	NC	6,500	1,080	NC
PCB063	NC	138	34.5	NC	177	28.9 U	NC	208	33.6	NC
PCB064	NC	565	172	NC	537	123 U	NC	1,690	291	NC
PCB066	NC	2,590	657	NC	2,910	459	NC	4,130	676	NC
PCB067	NC	34	29.1 U	NC	46.3	29.4 U	NC	151	26.3	NC
PCB068	NC	95.2 U	97.1 U	NC	96.5	98 U	NC	249	59.4 U	NC
PCB072	NC	46.1	21.8 U	NC	74.9	22.1 U	NC	154	25.8	NC
PCB073	NC	52.4 U	53.4 U	NC	48.2 U	53.9 U	NC	32 U	21.1 U	NC
PCB077	NC	117	44.7 U	NC	118	45.1 U	NC	248	40.7	NC
PCB078	NC	21.9 U	22.3 U	NC	20.2 U	22.5 U	NC	13.4 U	13.7 U	NC
PCB079	NC	37.1 U	37.9 U	NC	35.6	38.2 U	NC	84.3	23.2 U	NC
PCB080	NC	35.2 U	35.9 U	NC	32.5 U	36.3 U	NC	21.6 U	22 U	NC
PCB081	NC	42.9 U	43.7 U	NC	39.5 U	44.1 U	NC	26.2 U	26.7 U	NC
PCB082	NC	153	41.3 U	NC	246	41.7 U	NC	690	111	NC
PCB083	NC	192	74.5	NC	316	65.2 U	NC	786	86.7	NC
PCB084	NC	402	141 U	NC	673	142 U	NC	1,890	288	NC
PCB085 & 117 & 116	NC	2,250	547	NC	2,210	337	NC	2,040	338	NC
PCB086 & 087 & 097 & 108 & 119 & 125	NC	2,960	728 U	NC	4,790	770	NC	7,130	1,130	NC
PCB088 & 091	NC	457	118	NC	1,140	175	NC	4,910	742	NC
PCB089	NC	27.6 U	28.2 U	NC	25.4 U	28.4 U	NC	55.6	17.2 U	NC
PCB090 & 101 & 113	NC	7,400	1,790	NC	18,200	2,790	NC	24,600	3,880	NC
PCB092	NC	1,750	412	NC	3,140	455	NC	5,020	768	NC
PCB093 & 098 & 100 & 102	NC	548 U	558 U	NC	973	564 U	NC	2,720	409	NC
PCB094	NC	119 U	121 U	NC	110 U	123 U	NC	250	74.3 U	NC
PCB095	NC	2,990	747	NC	6,710	1,030	NC	13,300	1,990	NC
PCB096	NC	53.3 U	54.4 U	NC	120	54.9 U	NC	326	49.7	NC
PCB099	NC	7,510	1,710	NC	9,780	1,340	NC	12,000	1,880	NC
PCB103	NC	106	44.7 U	NC	379	54.9	NC	1,390	199	NC
PCB104	NC	71 U	72.3 U	NC	65.4 U	73 U	NC	55.6	44.3 U	NC
PCB105	NC	5,100	1,210	NC	4,550	732	NC	3,140	503	NC
PCB106	NC	70.5 U	71.8 U	NC	64.9 U	72.5 U	NC	43.1 U	44 U	NC
PCB107 & 124	NC	200	52.9 U	NC	257	53.4 U	NC	307	46.8	NC
PCB109	NC	971	227	NC	1,250	213	NC	1,330	203	NC
PCB110 & 115	NC	5,060	1,250	NC	8,280	1,400	NC	11,400	1,840	NC
PCB111	NC	35.2 U	35.9 U	NC	44.4	36.3 U	NC	108	22 U	NC
PCB112	NC	52.4 U	53.4 U	NC	48.2 U	53.9 U	NC	32 U	32.7 U	NC
PCB114	NC	450	93.7	NC	425	67.5	NC	199	36.6	NC
PCB118	NC	18,600	4,270	NC	22,200	3,600	NC	12,100	1,950	NC
PCB120	NC	119 U	121 U	NC	144	123 U	NC	345	74.3 U	NC
PCB121	NC	32.9 U	33.5 U	NC	51.9	33.8 U	NC	104	20.5 U	NC
PCB122	NC	43.3 U	71.8 U	NC	48.4	44.6 U	NC	71.1	27 U	NC
PCB123	NC	315	79.1	NC	345	56.9 U	NC	162	35.4	NC
PCB126	NC	64.3 U	65.5 U	NC	59.2 U	66.2 U	NC	39.3 U	40.1 U	NC
PCB127	NC	41 U	41.7 U	NC	45	42.2 U	NC	30.3	25.5 U	NC
PCB128 & 166	NC	3,490	824	NC	4,520	690	NC	3,550	478	NC

PCB129 & 138 & 163	NC	39,800	8,810	NC	103,000	14,900	NC	60,000	8,750	NC
PCB130	NC	812	181	NC	2,800	402	NC	2,560	376	NC
PCB131	NC	40.5 U	41.3 U	NC	171	41.7 U	NC	241	34.8	NC
PCB132	NC	1,170	274	NC	5,860	893	NC	9,390	1,360	NC
PCB133	NC	752	164	NC	1,830	251	NC	2,290	371	NC
PCB134 & 143	NC	266	243 U	NC	1,490	245 U	NC	1,550	225	NC
PCB135 & 151	NC	6,290	1,440	NC	22,900	3,310	NC	22,500	3,380	NC
PCB136	NC	854	200	NC	5,010	709	NC	5,010	708	NC
PCB137	NC	1,400	263	NC	1,830	255	NC	1,010	138	NC
PCB139 & 140	NC	463	106	NC	524	74	NC	637	92.7	NC
PCB141	NC	3,830	871	NC	15,200	2,150	NC	9,610	1,360	NC
PCB142	NC	40.5 U	41.3 U	NC	37.3 U	41.7 U	NC	24.8 U	25.2 U	NC
PCB144	NC	425	93.3	NC	3,050	435	NC	2,450	340	NC
PCB145	NC	44.8 U	45.6 U	NC	41.2 U	46.1 U	NC	27.4 U	27.9 U	NC
PCB146	NC	7,460	1,660	NC	22,500	3,100	NC	20,000	3,300	NC
PCB147 & 149	NC	4,910	1,130	NC	24,700	3,570	NC	43,700	6,400	NC
PCB148	NC	71.4 U	72.8 U	NC	122	73.5 U	NC	446	69.2	NC
PCB150	NC	51.4 U	52.4 U	NC	65.9	52.9 U	NC	318	46.7	NC
PCB152	NC	55.7 U	56.8 U	NC	62.3	57.4 U	NC	83.1	34.8 U	NC
PCB153 & 168	NC	48,500	11,100	NC	143,000 J	20,600	NC	74,400	11,300	NC
PCB154	NC	553	123	NC	900	121	NC	2,440	366	NC
PCB155	NC	58.6 U	59.7 U	NC	53.9 U	60.3 U	NC	35.8 U	36.5 U	NC
PCB156 & 157	NC	4,210	965	NC	9,930	1,420	NC	2,770	453	NC
PCB158	NC	3,310	735	NC	7,240	1,060	NC	4,060	576	NC
PCB159	NC	119 U	121 U	NC	649	123 U	NC	72.8 U	74.3 U	NC
PCB160	NC	4.29 U	4.37 U	NC	3.95 U	4.41 U	NC	2.62 U	2.67 U	NC
PCB161	NC	56.7 U	57.8 U	NC	52.2 U	58.3 U	NC	34.7 U	35.3 U	NC
PCB162	NC	92.6	41 U	NC	203	41.4 U	NC	221	25.1 U	NC
PCB164	NC	1,090	266	NC	4,000	625	NC	2,440	371	NC
PCB165	NC	56.2 U	57.3 U	NC	101	57.8 U	NC	130	35 U	NC
PCB167	NC	1,430	308	NC	3,830	518	NC	1,640	246	NC
PCB169	NC	109 J	38.4 U	NC	314	38.8 U	NC	227 J	49.1 J	NC
PCB170	NC	11,300	2,510	NC	39,200	5,500	NC	14,100	2,700	NC
PCB171 & 173	NC	3,170	713	NC	10,400	1,420	NC	5,090	789	NC
PCB172	NC	2,140	465	NC	7,460	971	NC	3,530	607	NC
PCB174	NC	1,910	432	NC	17,300	2,460	NC	13,000	2,140	NC
PCB175	NC	270	71.4 U	NC	1,720	227	NC	796	131	NC
PCB176	NC	157	88.8 U	NC	1,420	189	NC	1,630	246	NC
PCB177	NC	2,600	573	NC	17,600	2,340	NC	14,300	2,560	NC
PCB178	NC	2,510	546	NC	9,050	1,230	NC	5,790	1,010	NC
PCB179	NC	1,120	257	NC	6,990	990	NC	5,340	848	NC
PCB180 & 193	NC	36,100	8,220	NC	132,000	18,000	NC	46,600	9,260	NC
PCB181	NC	91.1	65 U	NC	212	65.7 U	NC	80.6	39.8 U	NC
PCB182	NC	43.3 U	44.2 U	NC	99.8	44.6 U	NC	168	33	NC
PCB183 & 185	NC	8,960	1,950	NC	33,900	4,460	NC	14,600	2,420	NC
PCB184	NC	51.9 U	52.9 U	NC	47.8 U	53.4 U	NC	31.7 U	32.4 U	NC
PCB186	NC	75.2 U	76.7 U	NC	69.3 U	77.5 U	NC	46 U	46.9 U	NC
PCB187	NC	19,500	4,270	NC	69,700	9,720	NC	38,900	7,100	NC
PCB188	NC	60.5 U	61.7 U	NC	75.8	62.3 U	NC	121	37.7 U	NC
PCB189	NC	612	131	NC	2,170	263	NC	671	119	NC
PCB190	NC	2,010	568	NC	5,500	903	NC	1,620	393	NC
PCB191	NC	599	131	NC	2,420	301	NC	846	140	NC
PCB192	NC	41.9 U	42.7 U	NC	38.6 U	43.1 U	NC	25.6 U	26.1 U	NC
PCB194	NC	6,450	1,410	NC	20,100	2,670	NC	7,750	1,660	NC

PCB195	NC	2,800	611	NC	9,700	1,200	NC	3,470	715	NC
PCB196	NC	3,240	685	NC	11,800	1,460	NC	3,830	958	NC
PCB197 & 200	NC	394	101 U	NC	1,830	225	NC	1,000	209	NC
PCB198 & 199	NC	5,520	1,210	NC	17,700	2,320	NC	6,640	1,970	NC
PCB201	NC	537	111	NC	2,730	345	NC	1,190	256	NC
PCB202	NC	1,370	297	NC	3,590	435	NC	1,970	405	NC
PCB203	NC	4,860	1,050	NC	12,300	1,560	NC	5,090	1,110	NC
PCB204	NC	58 U	59.2 U	NC	53.5 U	59.8 U	NC	35.5 U	36.2 U	NC
PCB205	NC	399	82.2	NC	1,160	137	NC	447	89	NC
PCB206	NC	1,830	390	NC	3,510	482	NC	1,510	327	NC
PCB207	NC	283	117 U	NC	637	118 U	NC	232	71.3 U	NC
PCB208	NC	368	119 U	NC	673	120 U	NC	392	79.4	NC
PCB209	NC	422	102	NC	429	69.3	NC	191	46.8	NC

Monochlorobiphenyl homologs	NC	44.3 UT	45.1 UT	NC	40.8 UT	45.6 UT	NC	28 T	27.6 UT	NC
Dichlorobiphenyl homologs	NC	771 T	365 T	NC	350 T	239 UT	NC	1,930 T	509 T	NC
Trichlorobiphenyl homologs	NC	3,770 T	1,580 T	NC	2,170 T	685 T	NC	16,200 T	2,930 T	NC
Tetrachlorobiphenyl homologs	NC	16,500 T	4,740 T	NC	19,900 T	3,560 T	NC	62,000 T	10,200 T	NC
Pentachlorobiphenyl homologs	NC	57,400 T	13,600 T	NC	86,400 T	13,700 T	NC	106,000 T	16,700 T	NC
Hexachlorobiphenyl homologs	NC	131,000 JT	29,900 T	NC	386,000 JT	55,500 T	NC	274,000 JT	40,900 JT	NC
Heptachlorobiphenyl homologs	NC	93,100 T	21,000 T	NC	357,000 T	49,100 T	NC	167,000 T	30,600 T	NC
Octachlorobiphenyl homologs	NC	25,600 T	5,510 T	NC	80,900 T	10,400 T	NC	31,400 T	7,370 T	NC
Nonachlorobiphenyl homologs	NC	2,480 T	508 T	NC	4,820 T	601 T	NC	2,130 T	442 T	NC
Total PCB Congeners (RI Calc; ND=0)	4,940,000 JT	330,000 JT	74,400 JT	218,000 JT	937,000 JT	131,000 JT	604,000 JT	661,000 JT	109,000 JT	407,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	4,940,000 JT	332,000 JT	77,300 JT	220,000 JT	938,000 JT	134,000 JT	606,000 JT	661,000 JT	110,000 JT	407,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	9.47 JT	4.2 JT	0.212 JT	2.46 JT	10.7 JT	0.198 JT	6.38 JT	7.46 JT	1.58 JT	4.75 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	20.3 JT	7.42 JT	4.07 JT	5.96 JT	13.7 JT	4.1 JT	9.73 JT	9.42 JT	3.59 JT	6.74 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	31.3 JT	12.5 JT	6.87 JT	10 JT	12.9 JT	6.93 JT	10.4 JT	16.7 JT	5.55 JT	11.5 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	1.23 JT	0.342 JT	0.213 JT	0.286 JT	0.403 JT	0.213 JT	0.324 JT	0.244 JT	0.13 JT	0.192 JT
% Lipids	NC	9.12	1.9	NC	5.79	0.88	NC	7.2	0.81	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the tabl

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-06	EPA1-SB11W-07			EPA1-SB11W-08					NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank
X-coordinate	7645637.35414	7645637.35414	7645637.35414	7643703.153	7643703.153	7643703.153	7642440.54514	7642440.54514	7642440.54514	NA
Y-coordinate	686200.04044	686200.04044	686200.04044	688248.84390	688248.84390	688248.84390	689464.81303	689464.81303	689464.81303	NA
RiverMile	11.9	11.9	11.9	11.4	11.4	11.4	11	11	11	NA
Sample Date	16-Sep-11	16-Sep-11	16-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11
Sample Time	7:14	7:14	7:14	9:20	9:20	9:20	10:12	10:12	10:12	10:10
Sample Mass (g)	753.89	579.31	1333.2	61.58	44.48	106.06	467.17	210.21	677.38	NA
PCB001	36.4 U	36.1 U	NC	36.4 U	37.1 U	NC	35 U	36.1 U	NC	0.0597 U
PCB002	45.1 U	44.7 U	NC	45.1 U	46 U	NC	43.5 U	44.7 U	NC	0.12 U
PCB003	23.8 U	23.6 U	NC	23.8 U	24.3 U	NC	22.9 U	23.6 U	NC	0.0638 U
PCB004	125	73.1 U	NC	127	75.2 U	NC	71 U	73.1 U	NC	0.0797
PCB005	45.1 U	44.7 U	NC	45.1 U	46 U	NC	43.5 U	44.7 U	NC	0.105 U
PCB006	42.2 U	41.8 U	NC	42.2 U	43.1 U	NC	40.7 U	41.8 U	NC	0.114 U
PCB007	57.3 U	56.7 U	NC	57.3 U	58.4 U	NC	55.1 U	56.7 U	NC	0.125 U
PCB008	142	79.7	NC	123	48.5 U	NC	45.8 U	47.1 U	NC	0.128 U
PCB009	27.7 U	27.4 U	NC	27.7 U	28.2 U	NC	26.6 U	27.4 U	NC	0.137 U
PCB010	30.1 U	29.8 U	NC	30.1 U	30.7 U	NC	29 U	29.8 U	NC	0.204 U
PCB011	394	235 U	NC	237 U	242 U	NC	228 U	235 U	NC	0.417 U
PCB012 & 013	40.3 U	39.9 U	NC	40.3 U	41.1 U	NC	38.8 U	39.9 U	NC	0.172 U
PCB014	44.2 U	43.8 U	NC	44.2 U	45 U	NC	42.5 U	43.8 U	NC	0.0482 U
PCB015	91.3	85.9	NC	66.5 U	67.8 U	NC	64 U	65.9 U	NC	0.0566 U
PCB016	113	71.8	NC	162	54.5 U	NC	51.4 U	52.9 U	NC	0.22 U
PCB017	274	102	NC	696	84.9	NC	811	195	NC	0.184 U
PCB018 & 030	374	147 U	NC	501	65.6	NC	222	68.3 U	NC	0.416 U
PCB019	100	46.2 U	NC	309	47.5 U	NC	470	104	NC	0.0499 U
PCB020 & 028	1,320	509	NC	1,910	228	NC	1,580	369	NC	0.147
PCB021 & 033	274	217 U	NC	274	223 U	NC	250	217 U	NC	0.145 U
PCB022	256	141	NC	390	55.3	NC	168	50.6	NC	0.0613
PCB023	53.4 U	52.9 U	NC	53.4 U	54.5 U	NC	51.4 U	52.9 U	NC	0.103 U
PCB024	32.5 U	32.2 U	NC	32.5 U	33.2 U	NC	31.3 U	32.2 U	NC	0.176 U
PCB025	79.4	47.1 U	NC	188	48.5 U	NC	228	48.5	NC	0.058 U
PCB026 & 029	216	101 U	NC	373	104 U	NC	257	101 U	NC	0.166 U
PCB027	52.4	45.7 U	NC	109	47 U	NC	212	49.9	NC	0.169 U
PCB031	679	299	NC	1,220	152	NC	613	160	NC	0.13
PCB032	153	68.4	NC	274	36.1	NC	692	160	NC	0.166 U
PCB034	38.3 U	38 U	NC	38.3 U	39.1 U	NC	36.9 U	38 U	NC	0.0788 U
PCB035	39.8 U	39.4 U	NC	39.8 U	40.6 U	NC	38.3 U	39.4 U	NC	0.133 U
PCB036	42.2 U	41.8 U	NC	42.2 U	43.1 U	NC	40.7 U	41.8 U	NC	0.0773 U
PCB037	177	113	NC	188	35.1	NC	38.4	32.2 U	NC	0.034
PCB038	30.6 U	30.3 U	NC	30.6 U	31.2 U	NC	29.4 U	30.3 U	NC	0.0917 U
PCB039	38.3 U	38 U	NC	38.3 U	39.1 U	NC	36.9 U	38 U	NC	0.0811 U
PCB040 & 041 & 071	678	198	NC	1,410	172	NC	2,190	522	NC	0.322 U
PCB042	588	146	NC	827	94.3	NC	1,300	282	NC	0.187 U
PCB043 & 073	55.7	52.9 U	NC	137	54.5 U	NC	435	98.1	NC	0.349 U
PCB044 & 047 & 065	7,610	1,670	NC	6,580	706	NC	19,200	3,990	NC	0.399 U
PCB045 & 051	261	74.8	NC	1,210	134	NC	3,590	779	NC	0.618 U
PCB046	121 U	120 U	NC	139	124 U	NC	139	120 U	NC	0.329 U
PCB048	305	78.8	NC	517	57.8	NC	564	125	NC	0.179 U
PCB049 & 069	2,990	656	NC	4,370	446	NC	9,600	2,000	NC	0.337 U

PCB050 & 053	227	63.5 U	NC	1,330	145	NC	4,050	874	NC	0.684 U
PCB052	4,520	1,050	NC	7,950	856	NC	9,360	2,000	NC	0.243 U
PCB054	34.5 U	34.1 U	NC	84.1	35.1 U	NC	833	173	NC	0.0503 U
PCB055	36.4 U	36.1 U	NC	36.4 U	37.1 U	NC	35 U	36.1 U	NC	0.154 U
PCB056	554	149	NC	845	102	NC	958	214	NC	0.129 U
PCB057	30.6 U	30.3 U	NC	30.6 U	31.2 U	NC	32.8	30.3 U	NC	0.0495 U
PCB058	32.5 U	32.2 U	NC	32.5 U	33.2 U	NC	39.4	32.2 U	NC	0.0618 U
PCB059 & 062 & 075	364 U	361 U	NC	364 U	371 U	NC	713	361 U	NC	0.322 U
PCB060	728	171	NC	666	75.6	NC	2,380	506	NC	0.155 U
PCB061 & 070 & 074 & 076	5,330	1,250	NC	6,240	654	NC	10,300	2,150	NC	0.297 U
PCB063	248	51.9	NC	180	29.2 U	NC	657	130	NC	0.0773 U
PCB064	1,200	291	NC	1,520	170	NC	2,360	517	NC	0.119 U
PCB066	3,900	884	NC	3,730	399	NC	10,800	2,280	NC	0.124 U
PCB067	80.7	28.8 U	NC	113	29.7 U	NC	184	38.3	NC	0.0969 U
PCB068	97.1 U	96.2 U	NC	97.1 U	99 U	NC	226	96.2 U	NC	0.0688 U
PCB072	87.1	21.6 U	NC	89.3	22.3 U	NC	181	37.1	NC	0.0561 U
PCB073	53.4 U	52.9 U	NC	0 U	54.5 U	NC	51.4 U	52.9 U	NC	0.349 U
PCB077	232	53.1	NC	233	45.5 U	NC	225	48.3	NC	0.0713 U
PCB078	22.3 U	22.1 U	NC	22.3 U	22.8 U	NC	21.5 U	22.1 U	NC	0.174 U
PCB079	55.3	37.5 U	NC	67.8	38.6 U	NC	91	37.5 U	NC	0.214 U
PCB080	35.9 U	35.6 U	NC	35.9 U	36.6 U	NC	34.6 U	35.6 U	NC	0.154 U
PCB081	43.7 U	43.3 U	NC	43.7 U	44.6 U	NC	42.1 U	43.3 U	NC	0.0684 U
PCB082	430	97.3	NC	710	78.5	NC	966	210	NC	0.0738 U
PCB083	342	63.9 U	NC	677	81.1	NC	632	135	NC	0.139 U
PCB084	940	210	NC	2,220	243	NC	1,500	335	NC	0.0794 U
PCB085 & 117 & 116	3,350	663	NC	2,450	239	NC	5,470	1,110	NC	0.115 U
PCB086 & 087 & 097 & 108 & 119 & 125	5,480	1,170	NC	8,860	911	NC	8,890	1,900	NC	0.14 U
PCB088 & 091	982	207	NC	2,240	233	NC	4,090	845	NC	0.193 U
PCB089	28.2 U	27.9 U	NC	115	28.7 U	NC	53.1	27.9 U	NC	0.095 U
PCB090 & 101 & 113	11,900	2,410	NC	29,500	2,870	NC	24,100	4,980	NC	1.07 U
PCB092	2,530	512	NC	4,320	440	NC	4,100	844	NC	0.125 U
PCB093 & 098 & 100 & 102	1,790	553 U	NC	1,490	569 U	NC	2,890	572	NC	0.532 U
PCB094	121 U	120 U	NC	268	124 U	NC	389	120 U	NC	0.135 U
PCB095	4,730	1,030	NC	15,700	1,620	NC	9,830	2,090	NC	0.642 U
PCB096	54.4 U	53.8 U	NC	171	55.4 U	NC	384	78.3	NC	0.245 U
PCB099	11,900	2,180	NC	8,810	851	NC	18,700	3,750	NC	0.229 U
PCB103	125	44.2 U	NC	387	45.5 U	NC	858	167	NC	0.116 U
PCB104	72.3 U	71.6 U	NC	72.3 U	73.8 U	NC	70.3	71.6 U	NC	0.115 U
PCB105	6,840	1,520	NC	4,660	479	NC	10,400	2,300	NC	0.0736 U
PCB106	71.8 U	71.2 U	NC	71.8 U	73.3 U	NC	69.2 U	71.2 U	NC	0.17 U
PCB107 & 124	312	67.6	NC	397	54 U	NC	522	107	NC	1.13 U
PCB109	1,310	303	NC	1,080	103	NC	2,290	504	NC	0.141 U
PCB110 & 115	9,150	1,920	NC	17,600	1,860	NC	13,600	2,920	NC	0.401 U
PCB111	35.9 U	35.6 U	NC	35.9 U	36.6 U	NC	72.8	35.6 U	NC	0.115 U
PCB112	53.4 U	52.9 U	NC	53.4 U	54.5 U	NC	51.4 U	52.9 U	NC	0.111 U
PCB114	696	138	NC	287	60.9 U	NC	1,070	222	NC	0.0563 U
PCB118	26,500	5,440	NC	16,700	1,710	NC	43,200	8,760	NC	0.32 U
PCB120	121 U	120 U	NC	121 U	124 U	NC	233	120 U	NC	0.074 U
PCB121	54.5	33.2 U	NC	33.5 U	34.2 U	NC	98.6	33.2 U	NC	0.0424 U
PCB122	71.8 U	43.8 U	NC	89.2	45 U	NC	118	43.8 U	NC	0.047 U
PCB123	542	87.9	NC	221	57.4 U	NC	1,010	173	NC	0.241 U
PCB126	65.5 U	64.9 U	NC	65.5 U	66.8 U	NC	85.9 J	64.9 U	NC	0.0451 U
PCB127	68.4	41.3 U	NC	41.7 U	42.6 U	NC	80	41.3 U	NC	0.0765 U
PCB128 & 166	4,540	909	NC	5,470	499	NC	6,290	1,290	NC	0.216 U

PCB129 & 138 & 163	44,400	8,830	NC	83,400	7,030	NC	282,000 J	28,000	NC	1.92 U
PCB130	1,120	211	NC	2,820	240	NC	3,850	810	NC	1.32 U
PCB131	96.2	40.9 U	NC	445	42.1 U	NC	254	50.7	NC	0.125 U
PCB132	2,190	437	NC	18,700	1,650	NC	4,430	951	NC	0.432 U
PCB133	918	166	NC	1,070	90.2	NC	2,380	495	NC	0.115 U
PCB134 & 143	427	240 U	NC	2,810	250	NC	1,560	348	NC	0.134 U
PCB135 & 151	7,650	1,330	NC	33,700	2,780	NC	16,900	3,390	NC	0.62 U
PCB136	1,310	227	NC	10,400	871	NC	3,020	610	NC	0.177 U
PCB137	2,310	431	NC	1,430	144 U	NC	3,290	547	NC	0.279 U
PCB139 & 140	636	112	NC	466	59.4 U	NC	772	164	NC	0.125 U
PCB141	3,920	856	NC	19,800	1,750	NC	12,400	2,700	NC	0.426 U
PCB142	41.3 U	40.9 U	NC	41.3 U	42.1 U	NC	39.7 U	40.9 U	NC	0.062 U
PCB144	574	99.4	NC	4,870	398	NC	3,270	659	NC	0.171 U
PCB145	45.6 U	45.2 U	NC	45.6 U	46.5 U	NC	43.9 U	45.2 U	NC	0.0509 U
PCB146	8,210	1,490	NC	13,000	1,070	NC	30,000	6,380	NC	0.351 U
PCB147 & 149	7,640	1,460	NC	62,300	5,420	NC	33,500	7,210	NC	1.48 U
PCB148	72.8 U	72.1 U	NC	92.2	74.3 U	NC	175	72.1 U	NC	0.103 U
PCB150	52.4 U	51.9 U	NC	82.7	53.5 U	NC	170	51.9 U	NC	0.0524 U
PCB152	56.8 U	56.3 U	NC	69.6	57.9 U	NC	100	56.3 U	NC	0.0692 U
PCB153 & 168	58,300	11,000	NC	92,300	7,800	NC	383,000 J	37,900	NC	2.49 U
PCB154	837	136	NC	634	55.3	NC	1,230	245	NC	0.118 U
PCB155	59.7 U	59.1 U	NC	59.7 U	60.9 U	NC	61.6	59.1 U	NC	0.0518 U
PCB156 & 157	5,980	1,220	NC	5,110	505	NC	14,100	3,020	NC	0.233 U
PCB158	4,140	810	NC	7,390	640	NC	8,540	1,820	NC	0.235 U
PCB159	121 U	120 U	NC	1,000	124 U	NC	62 U	120 U	NC	0.102 U
PCB160	4.37 U	4.33 U	NC	4.37 U	4.46 U	NC	4.21 U	4.33 U	NC	2.02 U
PCB161	57.8 U	57.2 U	NC	57.8 U	58.9 U	NC	55.6 U	57.2 U	NC	0.106 U
PCB162	135	49.2	NC	109	41.8 U	NC	1,390	62.4	NC	0.069 U
PCB164	1,090	223	NC	4,730	418	NC	4,940	1,210	NC	0.264 U
PCB165	61.8	56.7 U	NC	57.3 U	58.4 U	NC	143	56.7 U	NC	0.0919 U
PCB167	1,790	345	NC	1,970	182	NC	5,730	1,230	NC	0.104 U
PCB169	93.7 J	38.1 U	NC	0 J	39.2 U	NC	350 J	94.2 J	NC	0.0414 U
PCB170	9,550	2,220	NC	22,800	2,440	NC	40,400	9,810	NC	0.539 U
PCB171 & 173	3,010	639	NC	9,370	884	NC	8,470	1,840	NC	0.207 U
PCB172	1,920	394	NC	4,800	444	NC	8,400	1,990	NC	0.0988 U
PCB174	1,830	362	NC	27,000	2,510	NC	21,800	5,340	NC	0.389 U
PCB175	294	70.7 U	NC	1,300	118	NC	2,050	480	NC	0.0399 U
PCB176	226	88 U	NC	3,340	311	NC	1,140	262	NC	0.0821 U
PCB177	2,150	447	NC	16,200	1,530	NC	23,100	5,200	NC	0.25 U
PCB178	2,650	496	NC	6,250	588	NC	10,700	2,550	NC	0.0724 U
PCB179	1,410	271	NC	12,000	1,130	NC	2,940	651	NC	0.148 U
PCB180 & 193	35,900	8,030	NC	59,900	6,470	NC	447,000 J	40,500	NC	1.16 U
PCB181	117	64.4 U	NC	103	66.3 U	NC	289	65.5	NC	0.0426 U
PCB182	65.5	43.8 U	NC	44.2 U	45 U	NC	165	43.8 U	NC	0.0306 U
PCB183 & 185	8,430	1,810	NC	22,900	2,160	NC	34,900	8,280	NC	0.455 U
PCB184	52.9 U	52.4 U	NC	52.9 U	54 U	NC	50.9 U	52.4 U	NC	0.0545 U
PCB186	76.7 U	76 U	NC	76.7 U	78.2 U	NC	73.8 U	76 U	NC	0.0522 U
PCB187	16,700	3,180	NC	37,800	3,550	NC	96,100	22,700	NC	0.491 U
PCB188	61.7 U	61.1 U	NC	61.7 U	62.9 U	NC	107	61.1 U	NC	0.052 U
PCB189	655	128	NC	970	85.8	NC	2,740	655	NC	0.0665 U
PCB190	1,430	462	NC	2,580	321	NC	5,590	1,830	NC	0.134 U
PCB191	615	120	NC	1,230	109	NC	2,860	652	NC	0.0489 U
PCB192	42.7 U	42.3 U	NC	42.7 U	43.6 U	NC	41.1 U	42.3 U	NC	0.0647 U
PCB194	5,770	1,310	NC	11,000	1,110	NC	23,400	6,770	NC	0.149 U

PCB195	2,300	512	NC	5,080	489	NC	9,240	2,560	NC	0.113 U
PCB196	3,020	680	NC	5,570	610	NC	13,700	4,040	NC	0.184 U
PCB197 & 200	412	99.8 U	NC	1,750	176	NC	1,650	467	NC	0.191 U
PCB198 & 199	4,130	991	NC	8,850	1,080	NC	20,700	6,690	NC	0.279 U
PCB201	573	109	NC	1,710	161	NC	3,240	904	NC	0.158 U
PCB202	1,500	308	NC	2,430	239	NC	3,970	1,120	NC	0.0973 U
PCB203	4,360	927	NC	7,600	760	NC	9,750	2,810	NC	0.144 U
PCB204	59.2 U	58.6 U	NC	52.9 U	60.3 U	NC	57 U	58.6 U	NC	0.089 U
PCB205	322	66.4	NC	702	63.5	NC	988	269	NC	0.0688 U
PCB206	1,890	427	NC	2,100	237	NC	3,430	1,140	NC	0.0551 U
PCB207	323	115 U	NC	312	119 U	NC	751	249	NC	0.0509 U
PCB208	443	118 U	NC	433	121 U	NC	886	280	NC	0.0913 U
PCB209	584	150	NC	192	54.7 U	NC	757	272	NC	0.151 U

Monochlorobiphenyl homologs	45.1 UT	44.7 UT	NC	45.1 UT	46 UT	NC	43.5 UT	44.7 UT	NC	0.12 UT
Dichlorobiphenyl homologs	802 T	369 T	NC	452 T	242 UT	NC	228 UT	235 UT	NC	0.608 T
Trichlorobiphenyl homologs	4,140 T	1,680 T	NC	6,660 T	991 T	NC	5,630 T	1,440 T	NC	1.37 T
Tetrachlorobiphenyl homologs	30,000 T	7,210 T	NC	38,500 T	4,520 T	NC	80,500 T	17,200 T	NC	0.684 UT
Pentachlorobiphenyl homologs	90,300 T	18,600 T	NC	119,000 T	12,400 T	NC	156,000 JT	32,300 T	NC	1.13 UT
Hexachlorobiphenyl homologs	159,000 JT	30,700 T	NC	374,000 JT	32,000 T	NC	824,000 JT	99,400 JT	NC	2.49 UT
Heptachlorobiphenyl homologs	87,000 T	18,700 T	NC	229,000 T	22,800 T	NC	709,000 JT	103,000 T	NC	1.16 UT
Octachlorobiphenyl homologs	22,400 T	4,950 T	NC	44,700 T	4,690 T	NC	86,600 T	25,600 T	NC	0.279 UT
Nonachlorobiphenyl homologs	2,660 T	544 T	NC	2,850 T	357 T	NC	5,070 T	1,670 T	NC	0.0913 UT
Total PCB Congeners (RI Calc; ND=0)	395,000 JT	80,500 JT	259,000 JT	814,000 JT	75,600 JT	505,000 JT	1,870,000 JT	279,000 JT	1,370,000 JT	0.452 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	396,000 JT	83,000 JT	260,000 JT	815,000 JT	78,100 JT	506,000 JT	1,870,000 JT	281,000 JT	1,370,000 JT	17.4 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	4.12 JT	0.272 JT	2.45 JT	0.921 JT	0.0889 JT	0.572 JT	21.5 JT	3.32 JT	15.8 JT	0.32 UT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	7.41 JT	4.09 JT	5.97 JT	4.2 JT	4.03 JT	4.13 JT	21.5 JT	6.57 JT	16.8 JT	0.32 UT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	18.8 JT	8.43 JT	14.3 JT	18.3 JT	6.85 JT	13.5 JT	25.4 JT	8.58 JT	20.2 JT	0.32 UT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.418 JT	0.224 JT	0.333 JT	0.348 JT	0.197 JT	0.284 JT	0.871 JT	0.264 JT	0.683 JT	0.32 UT
% Lipids	11.6	2.68	NC	7.36	0.86	NC	1.65	0.35	NC	NA

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in un

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

LocationID	NA	NA	NA
Tissue	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	NA	NA	NA
Y-coordinate	NA	NA	NA
RiverMile	NA	NA	NA
Sample Date	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	15:45	14:30	14:45
Sample Mass (g)	NA	NA	NA
PCB001	0.0579 U	0.0559 U	0.0569 U
PCB002	0.117 U	0.113 U	0.115 U
PCB003	0.062 U	0.0598 U	0.0609 U
PCB004	0.0301 U	0.029 U	0.0339 J
PCB005	0.102 U	0.0982 U	0.0999 U
PCB006	0.11 U	0.107 U	0.108 U
PCB007	0.121 U	0.117 U	0.119 U
PCB008	0.125 U	0.12 U	0.122 U
PCB009	0.133 U	0.129 U	0.131 U
PCB010	0.198 U	0.191 U	0.194 U
PCB011	0.244 U	0.255 U	0.322 U
PCB012 & 013	0.167 U	0.161 U	0.164 U
PCB014	0.0468 U	0.0452 U	0.046 U
PCB015	0.0219 J	0.0198 J	0.0253 U
PCB016	0.214 U	0.207 U	0.21 U
PCB017	0.179 U	0.172 U	0.175 U
PCB018 & 030	0.404 U	0.39 U	0.397 U
PCB019	0.0484 U	0.0468 U	0.0476 U
PCB020 & 028	0.0959 U	0.0926 U	0.0942 U
PCB021 & 033	0.141 U	0.136 U	0.139 U
PCB022	0.0341 U	0.0329 U	0.0335 U
PCB023	0.0999 U	0.0965 U	0.0981 U
PCB024	0.171 U	0.165 U	0.168 U
PCB025	0.0563 U	0.0544 U	0.0553 U
PCB026 & 029	0.161 U	0.156 U	0.158 U
PCB027	0.164 U	0.159 U	0.162 U
PCB031	0.0531 U	0.0513 U	0.0548
PCB032	0.161 U	0.156 U	0.158 U
PCB034	0.0765 U	0.0739 U	0.0751 U
PCB035	0.129 U	0.124 U	0.126 U
PCB036	0.0751 U	0.0725 U	0.0738 U
PCB037	0.0268 U	0.0259 U	0.0264 U
PCB038	0.089 U	0.0859 U	0.0874 U
PCB039	0.0787 U	0.076 U	0.0773 U
PCB040 & 041 & 071	0.313 U	0.302 U	0.307 U
PCB042	0.182 U	0.176 U	0.179 U
PCB043 & 073	0.339 U	0.327 U	0.333 U
PCB044 & 047 & 065	0.388 U	0.374 U	0.381 U
PCB045 & 051	0.599 U	0.579 U	0.589 U
PCB046	0.319 U	0.308 U	0.313 U
PCB048	0.174 U	0.168 U	0.171 U
PCB049 & 069	0.327 U	0.316 U	0.321 U

PCB050 & 053	0.664 U	0.641 U	0.652 U
PCB052	0.236 U	0.228 U	0.232 U
PCB054	0.0488 U	0.0472 U	0.048 U
PCB055	0.149 U	0.144 U	0.147 U
PCB056	0.125 U	0.121 U	0.123 U
PCB057	0.048 U	0.0464 U	0.0472 U
PCB058	0.0599 U	0.0579 U	0.0589 U
PCB059 & 062 & 075	0.313 U	0.302 U	0.307 U
PCB060	0.151 U	0.145 U	0.148 U
PCB061 & 070 & 074 & 076	0.289 U	0.279 U	0.284 U
PCB063	0.0751 U	0.0725 U	0.0738 U
PCB064	0.116 U	0.112 U	0.114 U
PCB066	0.12 U	0.116 U	0.118 U
PCB067	0.0941 U	0.0908 U	0.0924 U
PCB068	0.0668 U	0.0645 U	0.0656 U
PCB072	0.0545 U	0.0526 U	0.0535 U
PCB073	0 U	0 U	0 U
PCB077	0.0692 U	0.0668 U	0.068 U
PCB078	0.169 U	0.164 U	0.166 U
PCB079	0.208 U	0.201 U	0.204 U
PCB080	0.15 U	0.144 U	0.147 U
PCB081	0.0664 U	0.0641 U	0.0652 U
PCB082	0.0717 U	0.0692 U	0.0704 U
PCB083	0.135 U	0.131 U	0.133 U
PCB084	0.0771 U	0.0744 U	0.0757 U
PCB085 & 117 & 116	0.112 U	0.108 U	0.11 U
PCB086 & 087 & 097 & 108 & 119 & 125	0.136 U	0.131 U	0.133 U
PCB088 & 091	0.188 U	0.181 U	0.184 U
PCB089	0.0922 U	0.0891 U	0.0906 U
PCB090 & 101 & 113	1.04 U	1.01 U	1.02 U
PCB092	0.121 U	0.117 U	0.119 U
PCB093 & 098 & 100 & 102	0.517 U	0.499 U	0.508 U
PCB094	0.131 U	0.126 U	0.129 U
PCB095	0.624 U	0.602 U	0.613 U
PCB096	0.238 U	0.23 U	0.234 U
PCB099	0.222 U	0.214 U	0.218 U
PCB103	0.112 U	0.108 U	0.11 U
PCB104	0.111 U	0.107 U	0.109 U
PCB105	0.0715 U	0.069 U	0.0702 U
PCB106	0.165 U	0.16 U	0.162 U
PCB107 & 124	1.1 U	1.06 U	1.08 U
PCB109	0.137 U	0.132 U	0.134 U
PCB110 & 115	0.39 U	0.376 U	0.383 U
PCB111	0.111 U	0.107 U	0.109 U
PCB112	0.108 U	0.104 U	0.106 U
PCB114	0.0547 U	0.0528 U	0.0537 U
PCB118	0.311 U	0.3 U	0.305 U
PCB120	0.0719 U	0.0694 U	0.0706 U
PCB121	0.0412 U	0.0398 U	0.0404 U
PCB122	0.0456 U	0.044 U	0.0448 U
PCB123	0.234 U	0.226 U	0.23 U
PCB126	0.0438 U	0.0423 U	0.043 U
PCB127	0.0743 U	0.0717 U	0.073 U
PCB128 & 166	0.21 U	0.203 U	0.206 U

PCB129 & 138 & 163	1.86 U	1.8 U	1.83 U
PCB130	1.28 U	1.24 U	1.26 U
PCB131	0.122 U	0.118 U	0.12 U
PCB132	0.42 U	0.405 U	0.412 U
PCB133	0.112 U	0.108 U	0.11 U
PCB134 & 143	0.13 U	0.126 U	0.128 U
PCB135 & 151	0.601 U	0.581 U	0.591 U
PCB136	0.172 U	0.166 U	0.169 U
PCB137	0.27 U	0.261 U	0.266 U
PCB139 & 140	0.121 U	0.117 U	0.119 U
PCB141	0.414 U	0.4 U	0.406 U
PCB142	0.0601 U	0.0581 U	0.0591 U
PCB144	0.166 U	0.16 U	0.163 U
PCB145	0.0494 U	0.0477 U	0.0486 U
PCB146	0.341 U	0.329 U	0.335 U
PCB147 & 149	1.44 U	1.39 U	1.41 U
PCB148	0.1 U	0.0969 U	0.0985 U
PCB150	0.0509 U	0.0491 U	0.05 U
PCB152	0.0672 U	0.0649 U	0.066 U
PCB153 & 168	2.42 U	2.33 U	2.37 U
PCB154	0.115 U	0.111 U	0.113 U
PCB155	0.0503 U	0.0485 U	0.0494 U
PCB156 & 157	0.226 U	0.218 U	0.222 U
PCB158	0.228 U	0.22 U	0.224 U
PCB159	0.0993 U	0.0959 U	0.0976 U
PCB160	1.96 U	1.89 U	1.93 U
PCB161	0.103 U	0.0994 U	0.101 U
PCB162	0.067 U	0.0647 U	0.0658 U
PCB164	0.256 U	0.248 U	0.252 U
PCB165	0.0892 U	0.0861 U	0.0876 U
PCB167	0.101 U	0.0978 U	0.0995 U
PCB169	0.0402 U	0.0388 U	0.0395 U
PCB170	0.523 U	0.505 U	0.514 U
PCB171 & 173	0.201 U	0.194 U	0.197 U
PCB172	0.0959 U	0.0926 U	0.0942 U
PCB174	0.377 U	0.364 U	0.371 U
PCB175	0.0388 U	0.0374 U	0.0381 U
PCB176	0.0797 U	0.077 U	0.0783 U
PCB177	0.242 U	0.234 U	0.238 U
PCB178	0.0702 U	0.0678 U	0.069 U
PCB179	0.144 U	0.139 U	0.141 U
PCB180 & 193	1.12 U	1.09 U	1.1 U
PCB181	0.0414 U	0.04 U	0.0406 U
PCB182	0.0297 U	0.0286 U	0.0291 U
PCB183 & 185	0.442 U	0.427 U	0.434 U
PCB184	0.0529 U	0.0511 U	0.0519 U
PCB186	0.0507 U	0.0489 U	0.0498 U
PCB187	0.476 U	0.46 U	0.468 U
PCB188	0.0505 U	0.0487 U	0.0496 U
PCB189	0.0646 U	0.0624 U	0.0634 U
PCB190	0.13 U	0.125 U	0.127 U
PCB191	0.0474 U	0.0458 U	0.0466 U
PCB192	0.0628 U	0.0606 U	0.0617 U
PCB194	0.145 U	0.14 U	0.142 U

PCB195	0.109 U	0.106 U	0.107 U
PCB196	0.178 U	0.172 U	0.175 U
PCB197 & 200	0.185 U	0.179 U	0.182 U
PCB198 & 199	0.27 U	0.261 U	0.266 U
PCB201	0.154 U	0.149 U	0.151 U
PCB202	0.0945 U	0.0912 U	0.0928 U
PCB203	0.14 U	0.135 U	0.137 U
PCB204	0.0864 U	0.0834 U	0.0849 U
PCB205	0.0668 U	0.0645 U	0.0656 U
PCB206	0.0535 U	0.0516 U	0.0525 U
PCB207	0.0494 U	0.0477 U	0.0486 U
PCB208	0.0886 U	0.0856 U	0.087 U
PCB209	0.146 U	0.141 U	0.144 U

Monochlorobiphenyl homologs	0.117 UT	0.113 UT	0.115 UT
Dichlorobiphenyl homologs	0.442 JT	0.435 JT	0.485 JT
Trichlorobiphenyl homologs	0.404 UT	0.39 UT	1.09 T
Tetrachlorobiphenyl homologs	0.664 UT	0.641 UT	0.652 UT
Pentachlorobiphenyl homologs	1.1 UT	1.06 UT	1.08 UT
Hexachlorobiphenyl homologs	2.42 UT	2.33 UT	2.37 UT
Heptachlorobiphenyl homologs	1.12 UT	1.09 UT	1.1 UT
Octachlorobiphenyl homologs	0.27 UT	0.261 UT	0.266 UT
Nonachlorobiphenyl homologs	0.0886 UT	0.0856 UT	0.087 UT
Total PCB Congeners (RI Calc; ND=0)	0.0219 JT	0.0198 JT	0.0887 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	16.3 JT	15.8 JT	16.1 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.311 UT	0.3 UT	0.305 UT
% Lipids	NA	NA	NA

Notes:

J
LWG
NA
NC
ND
PCB
RA
RI
T
TCDD
TEQ
U

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02		EPA1-SB04E-06		EPA1-SB05E-02		EPA1-SB05E-03		EPA1-SB05E-04	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7618740.36258	7618740.36258	7618995.08054	7618995.08054	7621025.9515	7621025.9515	7621611.17954	7621611.17954	7622425.67887	7622425.67887
Y-coordinate	714962.80202	714962.80202	714296.52532	714296.52532	710385.59352	710385.59352	709354.49337	709354.49337	708300.12878	708300.12878
RiverMile	4.2	4.2	4.3	4.3	5.2	5.2	5.4	5.4	5.7	5.7
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11
Sample Time	18:34	18:34	17:10	17:10	9:54	9:54	9:32	9:32	18:10	18:10
Sample Mass (g)	148.75	347.2	171.54	356.38	226.9	479.12	155.69	353.73	235.07	513.76
Total PCB Congeners (RI Calc; ND=0)	62,300 JT	235,000 JT	119,000 JT	412,000 JT	53,300 JT	245,000 JT	106,000 JT	400,000 JT	55,000 JT	218,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	63,500 JT	235,000 JT	120,000 JT	413,000 JT	54,400 JT	246,000 JT	106,000 JT	400,000 JT	57,300 JT	220,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.179 JT	4.49 JT	0.412 JT	5.76 JT	0.162 JT	0.697 JT	0.263 JT	8.92 JT	0.132 JT	0.576 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	2.45 JT	5.46 JT	2.77 JT	6.9 JT	1.75 JT	3.5 JT	2.25 JT	9.79 JT	3.85 JT	4.35 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.99 JT	27.5 JT	13.8 JT	46.2 JT	4.59 JT	13.2 JT	11.1 JT	17.1 JT	7.87 JT	23.2 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.142 JT	0.321 JT	0.193 JT	0.564 JT	0.103 JT	0.258 JT	0.162 JT	0.35 JT	0.195 JT	0.294 JT

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

EPA1-SB05W-02 LocationID	EPA1-SB05W-03		EPA1-SB05W-04		EPA1-SB06E-02		EPA1-SB06E-08			
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7620011.50418	7620011.50418	7620605.96737	7620605.96737	7622425.67887	7622425.67887	7625302.7482	7625302.7482	7627751.00475	7627751.00475
Y-coordinate	709612.51266	709612.51266	708796.51539	708796.51539	708300.12878	708300.12878	706147.43780	706147.43780	704513.70041	704513.70041
RiverMile	5.2	5.2	5.4	5.4	5.7	5.7	6.4	6.4	6.9	6.9
Sample Date	2-Oct-11	2-Oct-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	8-Oct-11	8-Oct-11
Sample Time	12:50	12:50	15:11	15:11	12:01	12:01	17:30	17:30	14:40	14:40
Sample Mass (g)	346.59	763.5	108.01	245.45	348.52	809.44	295.78	727.73	165.25	382.7
Total PCB Congeners (RI Calc; ND=0)	142,000 JT	344,000 JT	30,800 JT	110,000 JT	58,500 JT	197,000 JT	212,000 JT	577,000 JT	35,400 JT	146,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	142,000 JT	344,000 JT	32,000 JT	111,000 JT	61,100 JT	199,000 JT	213,000 JT	578,000 JT	38,300 JT	148,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	1.65 JT	7.56 JT	0.0825 JT	0.614 JT	0.217 JT	1.9 JT	2.1 JT	2.92 JT	0.0962 JT	0.4 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.62 JT	8.45 JT	1.66 JT	2.02 JT	4.07 JT	5.45 JT	4.09 JT	7.24 JT	3.85 JT	4.15 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	11.4 JT	25.6 JT	5.08 JT	12.8 JT	8.38 JT	15 JT	7.28 JT	18.1 JT	6.53 JT	11.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.206 JT	0.479 JT	0.0899 JT	0.138 JT	0.216 JT	0.315 JT	0.255 JT	0.573 JT	0.189 JT	0.248 JT

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

EPA1-SB06E-09 LocationID	EPA1-SB06E-10		EPA1-SB06E-11		EPA1-SB06W-01		EPA1-SB06W-04			
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7627261.88007	7627261.88007	7627239.77732	7627239.77732	7627178.52305	7627178.52305	7623259.73897	7623259.73897	7625793.9513	7625793.9513
Y-coordinate	704853.84237	704853.84237	704870.11915	704870.11915	704970.96090	704970.96090	706089.13850	706089.13850	704637.76539	704637.76539
RiverMile	6.8	6.8	6.8	6.8	6.8	6.8	6.1	6.1	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11
Sample Time	15:49	15:49	16:10	16:10	16:15	16:15	8:20	8:20	16:45	16:45
Sample Mass (g)	154.51	367.31	349.44	800.09	93.53	204.23	284.8	617.63	96.49	213.29
Total PCB Congeners (RI Calc; ND=0)	52,600 JT	217,000 JT	38,200 JT	93,000 JT	34,100 JT	134,000 JT	87,800 JT	258,000 JT	232,000 JT	912,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	55,600 JT	218,000 JT	40,700 JT	95,200 JT	37,100 JT	136,000 JT	89,900 JT	259,000 JT	234,000 JT	913,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.133 JT	0.521 JT	0.154 JT	0.373 JT	0.0843 JT	0.328 JT	0.249 JT	0.699 JT	0.79 JT	11.1 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.92 JT	4.28 JT	3.87 JT	4.17 JT	3.95 JT	4.06 JT	3.86 JT	4.87 JT	4.72 JT	13.4 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.05 JT	15.1 JT	7.68 JT	11 JT	6.7 JT	12 JT	8.56 JT	15.8 JT	20.5 JT	82.1 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.199 JT	0.265 JT	0.199 JT	0.244 JT	0.192 JT	0.235 JT	0.211 JT	0.305 JT	0.334 JT	1.17 JT

Notes:

	All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).
J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

EPA1-SB07E-04 LocationID	EPA1-SB07E-05		EPA1-SB07E-06		EPA1-SB08W-01		EPA1-SB08W-05			
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7630501.76039	7630501.76039	7631760.29319	7631760.29319	7631349.49959	7631349.49959	7630437.20807	7630437.20807	7633514.59281	7633514.59281
Y-coordinate	702199.77674	702199.77674	701577.03264	701577.03264	701694.06802	701694.06802	699436.53571	699436.53571	696771.28347	696771.28347
RiverMile	7.6	7.6	7.9	7.9	7.9	7.9	8	8	8.8	8.8
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11
Sample Time	16:15	16:15	15:30	15:30	15:42	15:42	11:33	11:33	10:00	10:00
Sample Mass (g)	133.25	288.19	84.2	200.12	215.09	474.54	293.4	675.38	88.4	195.22
Total PCB Congeners (RI Calc; ND=0)	43,600 JT	145,000 JT	38,800 JT	214,000 JT	78,800 JT	221,000 JT	87,900 JT	367,000 JT	54,000 JT	278,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	46,300 JT	147,000 JT	40,300 JT	215,000 JT	81,200 JT	223,000 JT	88,900 JT	368,000 JT	55,300 JT	279,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.115 JT	1.96 JT	0.819 JT	2.16 JT	0.152 JT	2.06 JT	0.281 JT	6.98 JT	0.134 JT	4.68 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.97 JT	5.51 JT	2.75 JT	4.82 JT	3.87 JT	5.58 JT	2.67 JT	8.02 JT	2.52 JT	5.76 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.58 JT	15.2 JT	5.26 JT	13.8 JT	6.55 JT	13.3 JT	7.62 JT	26.3 JT	6.92 JT	23.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.2 JT	0.255 JT	0.122 JT	0.234 JT	0.197 JT	0.265 JT	0.162 JT	0.497 JT	0.137 JT	0.332 JT

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

EPA1-SB08W-06 LocationID	EPA1-SB09E-05		EPA1-SB10E-04		EPA1-SB10E-06		EPA1-SB11E-07			
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7630400.53156	7630400.53156	7639620.34313	7639620.34313	7641543.94531	7641543.94531	7640465.85256	7640465.85256	7643279.64269	7643279.64269
Y-coordinate	699535.96925	699535.96925	694926.99167	694926.99167	692043.63381	692043.63381	693421.94952	693421.94952	690016.34775	690016.34775
RiverMile	8	8	9.9	9.9	10.5	10.5	10.2	10.2	11	11
Sample Date	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	19-Sep-11	19-Sep-11
Sample Time	16:50	16:50	14:13	14:13	12:57	12:57	13:50	13:50	7:05	7:05
Sample Mass (g)	131.12	336.77	141.64	339.1	110.29	252.54	40.99	89.63	470.73	1045.05
Total PCB Congeners (RI Calc; ND=0)	63,500 JT	240,000 JT	109,000 JT	436,000 JT	162,000 JT	556,000 JT	36,400 JT	201,000 JT	753,000 JT	1,520,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	65,500 JT	241,000 JT	111,000 JT	436,000 JT	163,000 JT	556,000 JT	39,500 JT	203,000 JT	754,000 JT	1,520,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.186 JT	1.47 JT	0.604 JT	8.39 JT	0.211 JT	16.2 JT	0.0638 JT	1.74 JT	10.4 JT	27.1 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.74 JT	4.8 JT	2.88 JT	9.33 JT	3.08 JT	17.5 JT	3.89 JT	5.32 JT	13.6 JT	28.6 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.58 JT	17.3 JT	5.59 JT	16.6 JT	5.71 JT	11.6 JT	6.62 JT	12 JT	10.1 JT	18.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.198 JT	0.299 JT	0.207 JT	0.623 JT	0.148 JT	0.308 JT	0.187 JT	0.249 JT	0.312 JT	0.647 JT

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

EPA1-SB11E-08 LocationID	EPA1-SB11E-09		EPA1-SB11E-10		EPA1-SB11W-05		EPA1-SB11W-06			
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7644062.92954	7644062.92954	7643687.40638	7643687.40638	7643305.44481	7643305.44481	7645552.1395	7645552.1395	7645637.35414	7645637.35414
Y-coordinate	689439.28177	689439.28177	689713.21524	689713.21524	689983.13427	689983.13427	686305.25469	686305.25469	686200.04044	686200.04044
RiverMile	11.2	11.2	11.1	11.1	11.1	11.1	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11
Sample Time	12:00	12:00	12:36	12:36	13:30	13:30	8:22	8:22	7:14	7:14
Sample Mass (g)	160.94	381.28	341.94	781.87	265.84	643.28	89.88	195.24	579.31	1333.2
Total PCB Congeners (RI Calc; ND=0)	1,440,000 JT	4,940,000 JT	74,400 JT	218,000 JT	131,000 JT	604,000 JT	109,000 JT	407,000 JT	80,500 JT	259,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	1,450,000 JT	4,940,000 JT	77,300 JT	220,000 JT	134,000 JT	606,000 JT	110,000 JT	407,000 JT	83,000 JT	260,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	1.19 JT	9.47 JT	0.212 JT	2.46 JT	0.198 JT	6.38 JT	1.58 JT	4.75 JT	0.272 JT	2.45 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	9.15 JT	20.3 JT	4.07 JT	5.96 JT	4.1 JT	9.73 JT	3.59 JT	6.74 JT	4.09 JT	5.97 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	15.3 JT	31.3 JT	6.87 JT	10 JT	6.93 JT	10.4 JT	5.55 JT	11.5 JT	8.43 JT	14.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.565 JT	1.23 JT	0.213 JT	0.286 JT	0.213 JT	0.324 JT	0.13 JT	0.192 JT	0.224 JT	0.333 JT

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole Body Only, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

EPA1-SB11W-07 LocationID	EPA1-SB11W-08				NA	NA	NA	NA
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7642440.54514	7642440.54514	NA	NA	NA	NA
Y-coordinate	688248.84390	688248.84390	689464.81303	689464.81303	NA	NA	NA	NA
RiverMile	11.4	11.4	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	44.48	106.06	210.21	677.38	NA	NA	NA	NA
Total PCB Congeners (RI Calc; ND=0)	75,600 JT	505,000 JT	279,000 JT	1,370,000 JT	0.452 JT	0.0219 JT	0.0198 JT	0.0887 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	78,100 JT	506,000 JT	281,000 JT	1,370,000 JT	17.4 JT	16.3 JT	15.8 JT	16.1 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.0889 JT	0.572 JT	3.32 JT	15.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.03 JT	4.13 JT	6.57 JT	16.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	6.85 JT	13.5 JT	8.58 JT	20.2 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.197 JT	0.284 JT	0.264 JT	0.683 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

qry_Result_Flag_Crosstab

% Lipids
10.6
1.87
9.95
1.98
6.58
0.468
10.7
2.78
9.67
1.67
9.19
2.87
6.49
0.86
12.1
2.07
12.7
3.53
7.29
1.36
6.9
1.23
9.57
2.49
7.04
1.04
8.59
2.13
9.44
1.12

8.92
1.72

6.47
0.83

12
1.57

11.3
1.7

6.85
0.81

7.89
1.37

5.39
1.07

8.72
1.57

7.2
0.88

12.5
3.71

5.21
0.44

9.12
1.9

5.79
0.88

7.2
0.81

11.6
2.68

7.36
0.86

1.65
0.35

LocationID	Tissue	X-coor	Y-coor	RiverMile	Sample Date	Sample Tir	Sample Mass (g)	Total PCB (
EPA1-SB04E-02	whole body	.36258	.80202	4.2	9/29/2011	0.77361	347.2	235,000 JT
EPA1-SB04E-06	whole body	.08054	.52532	4.3	9/29/2011	0.71528	356.38	412,000 JT
EPA1-SB05E-02	whole body	5.9515	.59352	5.2	10/3/2011	0.4125	479.12	245,000 JT
EPA1-SB05E-03	whole body	.17954	.49337	5.4	10/3/2011	0.39722	353.73	400,000 JT
EPA1-SB05E-04	whole body	.67887	.12878	5.7	10/6/2011	0.75694	513.76	218,000 JT
EPA1-SB05W-02	whole body	.50418	.51266	5.2	10/2/2011	0.53472	763.5	344,000 JT
EPA1-SB05W-03	whole body	.96737	.51539	5.4	9/28/2011	0.63264	245.45	110,000 JT
EPA1-SB05W-04	whole body	.67887	.12878	5.7	9/22/2011	0.50069	809.44	197,000 JT
EPA1-SB06E-02	whole body	2.7482	.43780	6.4	10/3/2011	0.72917	727.73	577,000 JT
EPA1-SB06E-08	whole body	.00475	.70041	6.9	10/8/2011	0.61111	382.7	146,000 JT
EPA1-SB06E-09	whole body	.88007	.84237	6.8	10/8/2011	0.65903	367.31	217,000 JT
EPA1-SB06E-10	whole body	.77732	.11915	6.8	10/8/2011	0.67361	800.09	93,000 JT
EPA1-SB06E-11	whole body	.52305	.96090	6.8	10/8/2011	0.67708	204.23	134,000 JT
EPA1-SB06W-01	whole body	.73897	.13850	6.1	10/7/2011	0.34722	617.63	258,000 JT
EPA1-SB06W-04	whole body	3.9513	.76539	6.6	10/6/2011	0.69792	213.29	912,000 JT
EPA1-SB07E-04	whole body	.76039	.77674	7.6	10/3/2011	0.67708	288.19	145,000 JT
EPA1-SB07E-05	whole body	.29319	.03264	7.9	10/3/2011	0.64583	200.12	214,000 JT
EPA1-SB07E-06	whole body	.49959	.06802	7.9	10/3/2011	0.65417	474.54	221,000 JT
EPA1-SB08W-01	whole body	.20807	.53571	8	9/27/2011	0.48125	675.38	367,000 JT
EPA1-SB08W-05	whole body	.59281	.28347	8.8	9/27/2011	0.41667	195.22	278,000 JT
EPA1-SB08W-06	whole body	.53156	.96925	8	10/7/2011	0.70139	336.77	240,000 JT
EPA1-SB09E-05	whole body	.34313	.99167	9.9	9/28/2011	0.59236	339.1	436,000 JT
EPA1-SB10E-04	whole body	.94531	.63381	10.5	9/28/2011	0.53958	252.54	556,000 JT
EPA1-SB10E-06	whole body	.85256	.94952	10.2	9/28/2011	0.57639	89.63	201,000 JT
EPA1-SB11E-07	whole body	.64269	.34775	11	9/19/2011	0.29514	1045.05	1,520,000
EPA1-SB11E-08	whole body	.92954	.28177	11.2	10/7/2011	0.5	381.28	4,940,000
EPA1-SB11E-09	whole body	.40638	.21524	11.1	10/7/2011	0.525	781.87	218,000 JT
EPA1-SB11E-10	whole body	.44481	.13427	11.1	10/7/2011	0.5625	643.28	604,000 JT
EPA1-SB11W-05	whole body	2.1395	.25469	11.9	9/28/2011	0.34861	195.24	407,000 JT
EPA1-SB11W-06	whole body	.35414	.04044	11.9	9/16/2011	0.30139	1333.2	259,000 JT
EPA1-SB11W-07	whole body	03.153	.84390	11.4	9/28/2011	0.38889	106.06	505,000 JT
EPA1-SB11W-08	whole body	.54514	.81303	11	9/28/2011	0.425	677.38	1,370,000

Total PCB	TEQ (RL Qals ND=0)	Dioxin-like	LWG RA Tc	LWG RA Tc	LWG RA Tc	% Lipids	TotPCBppq	
235,000	JT	4.49 JT	5.46 JT	27.5 JT	0.321 JT	6.86	235000	235000
413,000	JT	5.76 JT	6.9 JT	46.2 JT	0.564 JT	6.11	412000	413000
246,000	JT	0.697 JT	3.5 JT	13.2 JT	0.258 JT	3.69	245000	245000
400,000	JT	8.92 JT	9.79 JT	17.1 JT	0.35 JT	7.21	400000	400000
220,000	JT	0.576 JT	4.35 JT	23.2 JT	0.294 JT	6.01	218000	218000
344,000	JT	7.56 JT	8.45 JT	25.6 JT	0.479 JT	6.32	344000	344000
111,000	JT	0.614 JT	2.02 JT	12.8 JT	0.138 JT	4.01	110000	110000
199,000	JT	1.9 JT	5.45 JT	15 JT	0.315 JT	7.78	197000	197000
578,000	JT	2.92 JT	7.24 JT	18.1 JT	0.573 JT	8.97	577000	577000
148,000	JT	0.4 JT	4.15 JT	11.9 JT	0.248 JT	4.73	146000	146000
218,000	JT	0.521 JT	4.28 JT	15.1 JT	0.265 JT	4.51	217000	216000
95,200	JT	0.373 JT	4.17 JT	11 JT	0.244 JT	6.48	93000	93000
136,000	JT	0.328 JT	4.06 JT	12 JT	0.235 JT	4.29	134000	133000
259,000	JT	0.699 JT	4.87 JT	15.8 JT	0.305 JT	5.61	258000	258000
913,000	JT	11.1 JT	13.4 JT	82.1 JT	1.17 JT	5.68	912000	910000
147,000	JT	1.96 JT	5.51 JT	15.2 JT	0.255 JT	5.59	145000	145000
215,000	JT	2.16 JT	4.82 JT	13.8 JT	0.234 JT	4.10	214000	214000
223,000	JT	2.06 JT	5.58 JT	13.3 JT	0.265 JT	7.27	221000	221000
368,000	JT	6.98 JT	8.02 JT	26.3 JT	0.497 JT	7.13	367000	367000
279,000	JT	4.68 JT	5.76 JT	23.9 JT	0.332 JT	4.11	278000	278000
241,000	JT	1.47 JT	4.8 JT	17.3 JT	0.299 JT	5.35	240000	240000
436,000	JT	8.39 JT	9.33 JT	16.6 JT	0.623 JT	3.59	436000	436000
556,000	JT	16.2 JT	17.5 JT	11.6 JT	0.308 JT	5.60	556000	556000
203,000	JT	1.74 JT	5.32 JT	12 JT	0.249 JT	4.31	201000	201000
1,520,000		27.1 JT	28.6 JT	18.9 JT	0.647 JT	8.54	1520000	1515000
4,940,000		9.47 JT	20.3 JT	31.3 JT	1.23 JT	3.20	4940000	4936000
220,000	JT	2.46 JT	5.96 JT	10 JT	0.286 JT	5.96	218000	218000
606,000	JT	6.38 JT	9.73 JT	10.4 JT	0.324 JT	3.76	604000	604000
407,000	JT	4.75 JT	6.74 JT	11.5 JT	0.192 JT	4.26	407000	407000
260,000	JT	2.45 JT	5.97 JT	14.3 JT	0.333 JT	7.72	259000	258000
506,000	JT	0.572 JT	4.13 JT	13.5 JT	0.284 JT	4.63	505000	504000
1,370,000		15.8 JT	16.8 JT	20.2 JT	0.683 JT	1.25	1370000	1376000

Portland Harbor Sample Receipt, Analysis, and Results Report

Tetra Tech, EM Inc.
February 2012

Introduction

This report is part of a baseline fish tissue study at the Portland Harbor Superfund Site (Portland Harbor Site). The U.S. Environmental Protection Agency (EPA) conducted this study as part of the Portland Harbor Remedial Investigation and Feasibility Study (RI/FS) and in conformance with the National Contingency Plan. The City of Portland provided assistance at the EPA's request.

This study adds to the body of information that will be used to establish baseline concentrations of polychlorinated biphenyls (PCB) in smallmouth bass tissue. The EPA will use the updated baseline data as a point of comparison to future contaminant concentrations measured in smallmouth bass during and following remedy implementation. The area being investigated is referred to as the Portland Harbor Study Area (study area).

This report summarizes sample receipt, analysis, and results of fish tissue samples collected during the baseline fish tissue study. The samples were collected in accordance with a sampling and analysis plan (SAP) prepared for the EPA by GSI Water Solutions, Inc. (GSI) (GSI, 2011), and as documented in the Field Sampling Report (GSI, 2012).

The report includes three main sections. The first section discusses the receipt of samples by the EPA, subsequent sample processing, and sample shipment (to and from the analytical laboratories). The second section discusses the analysis of samples at each laboratory and provides a summary of data validation results. The final section discusses the sample results, including a discussion of data reduction steps used to calculate summed totals to be used in the RI/FS and risk assessments (RA). Tables of results and the data validation report are attached to this report.

This report was prepared by Tetra Tech under EPA contract number EP-W-07-078. Tetra Tech was responsible for subcontracting laboratory analysis to Pace Analytical Laboratories (Pace), preparing the data for database entry, and preparing this report.

Sample Delivery, Receipt, Processing, and Analysis

As described in the Field Sampling Report, smallmouth bass were collected at 68 "Target" sampling locations and 14 "Lifecycle" sampling locations. The Target samples were generally within the 225- to 335-millimeter (approximately 9- to 14-inch) size range specified in the SAP while the Lifecycle samples ranged in size from 197 to 455 millimeters. The Target samples were collected by GSI and shipped to KAP Technologies Inc. (KAP), laboratory in Woodlands, Texas, on September 19 and October 11, 2011. The Lifecycle samples were shipped to the U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center in Vicksburg, Mississippi, on October 11, 2011. Table 1 identifies the samples as either Target or Lifecycle and indicates their respective shipment batch. Figure 1 shows the locations of the samples collected. More detailed location maps are included in the Field Sampling Report prepared by GSI.

The initial shipment of Target samples, 50 in all, was incorrectly processed by KAP. The samples should have been homogenized as whole body samples and divided into two separate aliquots. One aliquot was intended for analysis of semivolatile organic compounds (SVOC), polycyclic aromatic hydrocarbons (PAH), and organochlorine pesticides by KAP, and the other aliquot was to be shipped to Pace in Minneapolis, Minnesota, for analysis of PCB congeners and lipid content.

Instead of following contract specifications, KAP prepared skinless fillets and discarded the skin and carcass portions. Upon discovery of this mishap, the EPA determined that the best course of action and use of resources was to refrain from analyzing the skinless fillet samples and instead analyze skin-on fillet and carcass separately from each of the 18 unprocessed Target samples held at KAP and the 14 Lifecycle samples held at the USACE Vicksburg facility. All samples were shipped to the EPA's Manchester Environmental Laboratory (MEL) in Port Orchard, Washington. These 32 samples were then processed as fillet (skin on) and carcass portions which were weighed, homogenized, and shipped to Pace for analysis of PCB congeners and lipid content. Fillet removal was conducted in accordance with the procedure described in Appendix C of the *Portland Harbor RI/FS Round 3B Field Sampling Plan for Fish and Invertebrate Tissue and Collocated Surface Sediment* (Integral, 2007). The skin and belly flap were included in the fillet sample. Because of budget restrictions, modifications to the processing scheme, and termination of the KAP contract, the EPA decided to forego the analysis of SVOC, PAH, and organochlorine pesticides. Table 1 summarizes the samples collected, and identifies which samples were not analyzed as a result of the processing error. The chains of custody and MEL sample processing forms are included in Appendices A and B to this report.

Pace analyzed each sample for the following analyte groups:

- PCB following SOW SOM01.2 and EPA Method 1668C
- Lipids following SOW SOM01.2 and EPA Method 1668C

Following analysis and data validation, the remaining sample material was returned from KAP and Pace to MEL for long-term archival.

Data Validation

The EPA Region 10 quality assurance (QA) staff validated the data following *Guidance on Environmental Data Verification and Validation* (EPA, 2002), *EPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review* (EPA, 2008), and *EPA Region 10 Standard Operating Procedure (SOP) for the Validation of Method 1668 Toxic, Dioxin-like PCB Data* (EPA, 1995). A Stage 4 data validation was conducted on all analytical data (EPA, 2012).

Table 2 summarizes the results of the data validation (see tables attached to this report). The data validation report is included in Appendix C to this report.

The EPA made few data qualifications during the data validation process. Qualifications were made for method and proof blank contamination, chromatographic interferences, and chromatographic peak saturation.

Data validation included an assessment of blank samples, including four rinsate blank samples collected during sample homogenization. Several analytes were qualified as estimated or non-detect based on trace laboratory blank contamination. The rinsate blank samples were analyzed for PCB congeners, and the results were compared with associated samples. Although a few congeners were detected at trace levels, the EPA did not qualify any samples based on rinsate blank contamination because no detected sample results were detected at concentrations within 5 times higher than the value in the associated rinsate blank (EPA, 2012).

Sample Results

In addition to the raw results, the SAP (GSI, 2011) specifies two sets of rules for summing data and retaining or modifying qualifiers and reducing the data to a single value per sample and summation group. The two sets of rules include one for use in the RI and another for use in the RA and background data sets, in accordance with the Portland Harbor RI/FS guidelines (Kennedy/Jenks, 2004).

Summation rules for the RI data set are as follows:

- For samples with at least one detected result for the summed analytes included in the total:
    - Detected concentrations are included in the calculated total.
    - Non-detected concentrations are not included in the calculated total (i.e., treated as zero).
- For samples with no detected results:
    - The highest detection limit is used for the summation. The calculated total result is indicated with a “U” to indicate it was not detected.

Summation rules for the RA and background data sets are as follows:

- For samples with at least one detected result for the summed analytes included in the total:
    - All detected concentrations are included in the calculated total.
    - All non-detected results for analytes, if they were detected at least once in the RA data set within the study area for a given medium (in this case, fish tissue), are included in the calculated total at one-half the detection limit.
    - All non-detected results for analytes, if they were not detected in any sample within the RA data set within the study area for a given medium, are not included in the calculated total (i.e., treated as zero).
- For samples with no detected results, where some of the summation analytes are determined to be present within the study area:
    - The highest detection limit for analytes present within the study area is used for the summation. The calculated total result is indicated with a “U” to indicate it was not detected.

Data qualifiers were carried through the summation procedure. If all the analytes were not detected, a "U" qualifier is applied to the summed data to indicate that all results were reported as not detected. All calculated totals are flagged with a "T" qualifier to indicate that they are mathematically derived values.

After the summations were complete, an overall concentration was calculated for each fish sample. These concentrations are reported as "whole body (calculated)" in the tissue field. The whole body concentrations were calculated only for the summation analytes (and not including the homolog summations), and were calculated using the following equation:

$$C_{wb} = \frac{(C_f \cdot M_f) + (C_{bwof} \cdot M_{bwof})}{(M_{fillet} + M_{bwof})}$$

where:

C_{wb} = the calculated concentration of the whole body fish sample
C_f = the measured concentration of the fillet fish sample
C_{bwof} = the measured concentration of the body without fillet fish sample (i.e., carcass)
M_f = the mass of the fillet fish sample
M_{bwof} = the mass of the body without fillet fish sample

Table 3 lists the summation group results to be calculated for each sample. Table 4 summarizes the laboratory data, including the summed totals as defined in Table 3 and the summation rules listed above. Table 5 lists only the summed totals for only the "fillet" and "whole body (calculated)" tissue types.

References

GSI Water Solutions, Inc. (GSI). 2011. Sampling and Analysis Plan, Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study, Willamette River, Portland, Oregon. Prepared for U.S. Environmental Protection Agency. September 2011.

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Integral. 2007. Portland Harbor RI/FS Round 3B Field Sampling Plan for Fish and Invertebrate Tissue and Collocated Surface Sediment. Prepared for the Lower Willamette Group, Portland, Oregon. Integral Consulting, Inc. October 22, 2007.

Kennedy/Jenks. 2004. Portland Harbor RI/FS Technical Memorandum: Guidelines for Data Averaging and the Treatment of Non-detected Values for the Round 1 Database. Prepared for the Lower Willamette Group, Portland OR. Kennedy/Jenks, Integral Consulting, Inc., Windward Environmental, LLC. June 25, 2004.

U.S. Environmental Protection Agency (EPA). 1995. EPA Region 10 SOP for the Validation of Method 1668 Toxic, Dioxin-like PCB Data. EPA Region 10, Environmental Services Division, Seattle, WA. December 8, 1995.

EPA. 2002. Guidance on Environmental Data Verification and Validation. EPA QA/G-8. EPA/240/R-02/004. EPA Office of Environmental Information, Washington DC. November 2002.

EPA. 2008. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. USEPA-540-R-08-01. EPA Office of Superfund Remediation and Technology Innovation. June 2008.

EPA. 2012. Memorandum. Subject: Data Validation Report for the full list of 209 Polychlorinated Biphenyl Congener (PCB Congeners) Analyses of Small-Mouthed Bass Tissue Samples Collected for the Portland Harbor RI/FS BACE Project Numbers: 10180829, 100180826, 101867, 101870. From: Ginna Grepo-Grove, R10 QA Manager, Office of Environmental Assessment, USEPA. To: Chip Humphrey and Matthew Lambert. June 13, 2012.

Figures

FIGURE 1

Sample Locations Overview

Portland Harbor Sample Receipt, Analysis, and Results Report

Willamette River
Portland, Oregon

LEGEND

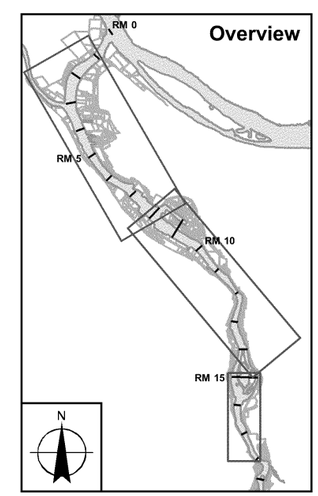
- × Target SMB Sample Location

Actual SMB Sample Locations

- Analyzed Target
- Not Analyzed Target
- Analyzed Lifecycle

All Other Data

- River Mile



MAP NOTES:

Projection: Oregon State Plane North
Datum: North American Datum of 1983
Date: September 11, 2012
1. The locations of all features shown are approximate.
2. RM = River Mile
3. SMB = Smallmouth Bass

1,400 0 1,400 2,800
1 inch = 2,800 feet

Tables

Table 1: Sample Locations

Portland Harbor Sample Receipt, Analysis, and Results Report

Location	Sample ID (EPA1-)	Collection Date	Sample Purpose	Analyzed?	Easting (NAD83)	Northing (NAD83)	Shipment
RM2E	EPA1-SB02E-01	9/22/2011	Target	Not Analyzed	7617559.5870	724490.8171	EPA 1
	EPA1-SB02E-04	9/15/2011	Target	Not Analyzed	7616831.9168	721677.8505	EPA 1
RM2W	EPA1-SB02W-02	9/16/2011	Target	Not Analyzed	7615381.2888	723941.6522	EPA 1
	EPA1-SB02W-05	9/16/2011	Target	Not Analyzed	7615077.7717	720994.6204	EPA 1
RM3E	EPA1-SB03E-04	9/15/2011	Target	Not Analyzed	7617951.5436	717347.3249	EPA 1
	EPA1-SB03E-05	9/20/2011	Target	Not Analyzed	7618807.7333	717284.6256	EPA 1
	EPA1-SB03E-08	9/22/2011	Target	Not Analyzed	7619736.8935	717037.2854	EPA 1
RM3W	EPA1-SB03W-01	9/16/2011	Target	Not Analyzed	7615068.6544	719538.6133	EPA 1
	EPA1-SB03W-03	9/16/2011	Target	Not Analyzed	7615813.7848	717984.5561	EPA 1
	EPA1-SB03W-05	9/16/2011	Target	Not Analyzed	7616463.1741	716444.7617	EPA 1
MC	EPA1-SBMC-01	9/15/2011	Target	Not Analyzed	7611620.6892	721658.7832	EPA 1
	EPA1-SBMC-03	9/15/2011	Target	Not Analyzed	7612397.2282	720301.7512	EPA 1
	EPA1-SBMC-04	9/15/2011	Target	Not Analyzed	7611374.3123	721259.7402	EPA 1
RM4E	EPA1-SB04E-02	9/29/2011	Target	Analyzed	7618740.3626	714962.8020	EPA 2
	EPA1-SB04E-06	9/29/2011	Target	Analyzed	7618995.0805	714296.5253	EPA 2
	EPA1-SB04E-08	9/14/2011	Target	Not Analyzed	7620447.4535	713407.5043	EPA 1
	EPA1-SB04E-10	9/14/2011	Target	Not Analyzed	7619734.6972	712843.0509	EPA 1
RM4W	EPA1-SB04W-02	9/16/2011	Target	Not Analyzed	7617350.9321	714289.1719	EPA 1
RM5E	EPA1-SB05E-01	9/14/2011	Target	Not Analyzed	7620479.9472	711431.5204	EPA 1
	EPA1-SB05E-02	10/3/2011	Target	Analyzed	7621025.9515	710385.5935	EPA 2
	EPA1-SB05E-03	10/3/2011	Target	Analyzed	7621611.1795	709354.4934	EPA 2
	EPA1-SB05E-04	10/6/2011	Target	Analyzed	7622425.6789	708300.1288	EPA 2
RM5W	EPA1-SB05W-02	10/2/2011	Target	Analyzed	7620011.5042	709612.5127	EPA 2
	EPA1-SB05W-03	9/28/2011	Target	Analyzed	7620605.9674	708796.5154	EPA 2
	EPA1-SB05W-04	9/22/2011	Lifecycle	Analyzed	7621193.7511	708165.8562	USACE

Table 1: Sample Locations

Portland Harbor Sample Receipt, Analysis, and Results Report

Location	Sample ID (EPA1-)	Collection Date	Sample Purpose	Analyzed?	Easting (NAD83)	Northing (NAD83)	Shipment
RM6E	EPA1-SB06E-01	9/12/2011	Target	Not Analyzed	7623765.1730	707139.9929	EPA 1
	EPA1-SB06E-02	10/3/2011	Target	Analyzed	7625302.7482	706147.4378	EPA 2
	EPA1-SB06E-03	9/12/2011	Target	Not Analyzed	7626095.4709	705927.5462	EPA 1
	EPA1-SB06E-04	9/21/2011	Target	Not Analyzed	7626744.2407	705806.6349	EPA 1
	EPA1-SB06E-05	9/12/2011	Target	Not Analyzed	7627396.9465	705617.3686	EPA 1
	EPA1-SB06E-06	9/16/2011	Target	Not Analyzed	7627142.7577	704779.2220	EPA 1
	EPA1-SB06E-08	10/8/2011	Lifecycle	Analyzed	7627751.0048	704513.7004	USACE
	EPA1-SB06E-09	10/8/2011	Lifecycle	Analyzed	7627261.8801	704853.8424	USACE
	EPA1-SB06E-10	10/8/2011	Lifecycle	Analyzed	7627239.7773	704870.1191	USACE
	EPA1-SB06E-11	10/8/2011	Lifecycle	Analyzed	7627178.5231	704970.9609	USACE
RM6W	EPA1-SB06W-01	10/7/2011	Target	Analyzed	7623259.7390	706089.1385	EPA 2
	EPA1-SB06W-02	9/21/2011	Target	Not Analyzed	7624486.3170	705395.1558	EPA 1
	EPA1-SB06W-04	10/6/2011	Target	Analyzed	7625793.9513	704637.7654	EPA 2
	EPA1-SB06W-05	9/20/2011	Target	Not Analyzed	7626390.2578	704033.1639	EPA 1
RM7E	EPA1-SB07E-01	9/22/2011	Target	Not Analyzed	7627963.1834	704313.4497	EPA 1
	EPA1-SB07E-02	9/12/2011	Target	Not Analyzed	7629007.5720	703478.0664	EPA 1
	EPA1-SB07E-04	10/3/2011	Target	Analyzed	7630501.7604	702199.7767	EPA 2
	EPA1-SB07E-05	10/3/2011	Target	Analyzed	7631760.2932	701577.0326	EPA 2
	EPA1-SB07E-06	10/3/2011	Target	Analyzed	7631349.4996	701694.0680	EPA 2
RM8E	EPA1-SB08E-01	9/19/2011	Target	Not Analyzed	7632509.7734	701744.1795	EPA 1
	EPA1-SB08E-04	9/12/2011	Target	Not Analyzed	7633809.8748	698774.8865	EPA 1
RM8W	EPA1-SB08W-01	9/27/2011	Target	Analyzed	7630437.2081	699436.5357	EPA 2
	EPA1-SB08W-05	9/27/2011	Target	Analyzed	7633514.5928	696771.2835	EPA 2
	EPA1-SB08W-06	10/7/2011	Lifecycle	Analyzed	7630400.5316	699535.9693	USACE
SIL	EPA1-SBSIL-01	9/21/2011	Target	Not Analyzed	7633413.0652	701868.4090	EPA 1
RM9E	EPA1-SB09E-04	9/13/2011	Target	Not Analyzed	7638082.5826	695670.2471	EPA 1
	EPA1-SB09E-05	9/28/2011	Target	Analyzed	7639620.3431	694926.9917	EPA 2
RM9W	EPA1-SB09W-03	9/19/2011	Target	Not Analyzed	7636621.4442	694872.3983	EPA 1

Table 1: Sample Locations

Portland Harbor Sample Receipt, Analysis, and Results Report

Location	Sample ID (EPA1-)	Collection Date	Sample Purpose	Analyzed?	Easting (NAD83)	Northing (NAD83)	Shipment
RM10E	EPA1-SB10E-01	9/13/2011	Target	Not Analyzed	7640156.5257	694052.8473	EPA 1
	EPA1-SB10E-03	9/13/2011	Target	Not Analyzed	7641370.1634	692238.8199	EPA 1
	EPA1-SB10E-04	9/28/2011	Target	Analyzed	7641543.9453	692043.6338	EPA 2
	EPA1-SB10E-06	9/28/2011	Lifecycle	Analyzed	7640465.8526	693421.9495	USACE
RM11E	EPA1-SB11E-01	9/19/2011	Target	Not Analyzed	7643282.6779	690004.2714	EPA 1
	EPA1-SB11E-02	9/13/2011	Target	Not Analyzed	7644492.4098	689157.4272	EPA 1
	EPA1-SB11E-03	9/13/2011	Target	Not Analyzed	7645051.2669	688194.8416	EPA 1
	EPA1-SB11E-04	9/13/2011	Target	Not Analyzed	7645545.6549	687339.7093	EPA 1
	EPA1-SB11E-05	9/13/2011	Target	Not Analyzed	7646028.5524	686729.8025	EPA 1
	EPA1-SB11E-06	9/13/2011	Target	Not Analyzed	7644188.9814	689349.8960	EPA 1
	EPA1-SB11E-07	9/19/2011	Lifecycle	Analyzed	7643279.6427	690016.3478	USACE
	EPA1-SB11E-08	10/7/2011	Lifecycle	Analyzed	7644062.9295	689439.2818	USACE
	EPA1-SB11E-09	10/7/2011	Lifecycle	Analyzed	7643687.4064	689713.2152	USACE
	EPA1-SB11E-10	10/7/2011	Lifecycle	Analyzed	7643305.4448	689983.1343	USACE
RM11W	EPA1-SB11W-04	9/16/2011	Target	Not Analyzed	7644463.1731	687488.7531	EPA 1
	EPA1-SB11W-05	9/28/2011	Target	Analyzed	7645552.1395	686305.2547	EPA 2
	EPA1-SB11W-06	9/16/2011	Lifecycle	Analyzed	7645637.3541	686200.0404	USACE
	EPA1-SB11W-07	9/28/2011	Lifecycle	Analyzed	7643703.1530	688248.8439	USACE
	EPA1-SB11W-08	9/28/2011	Lifecycle	Analyzed	7642440.5451	689464.8130	USACE
RM15E	EPA1-SB15E-01	9/26/2011	Target	Not Analyzed	7646308.0338	668795.0119	EPA 1
	EPA1-SB15E-02	9/23/2011	Target	Not Analyzed	7647151.9207	668742.9954	EPA 1
	EPA1-SB15E-03	9/23/2011	Target	Not Analyzed	7646369.0729	668317.7888	EPA 1
	EPA1-SB15E-04	9/26/2011	Target	Not Analyzed	7646307.1184	668494.3107	EPA 1
	EPA1-SB15E-05	9/26/2011	Target	Not Analyzed	7647121.2253	667554.4248	EPA 1
RM16W	EPA1-SB16W-01	9/26/2011	Target	Not Analyzed	7646073.9461	662735.8685	EPA 1
	EPA1-SB16W-02	9/26/2011	Target	Not Analyzed	7646177.9411	662992.9936	EPA 1
RM17W	EPA1-SB17W-01	9/26/2011	Target	Not Analyzed	7648317.5271	657983.1762	EPA 1
	EPA1-SB17W-02	9/26/2011	Target	Not Analyzed	7648171.4210	658470.3637	EPA 1
	EPA1-SB17W-03	9/26/2011	Target	Not Analyzed	7647825.1467	659142.0138	EPA 1

Table 2: Data Validation Results
Portland Harbor Sample Receipt, Analysis, and Results Report

Analysis	Matrix	Number Qualified as Estimated	Number Qualified as Rejected	Total Number of Results	Percent Qualified as Estimated	Percent Qualified as Rejected
Polychlorinated Biphenyls	Fish Tissue	39	0	11084	0.35%	0.00%
Lipids	Fish Tissue	0	0	64	0.00%	0.00%
Total Fish Tissue		39	0	11148	0.35%	0.00%

Table 3. Summary of Analyte Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

Summed Analyte	Analytes Included in the Summed Analyte Total	TEF	Summation Rules Used
Total PCB Congeners (RI Calc; ND=0)	All PCB congeners	1	RI Rules
Dioxin-like PCB congener TCDD toxicity equivalent (ND = 0)	PCB-77	0.0001	RI Rules
	PCB-81	0.0003	
	PCB-105	0.00003	
	PCB-114	0.00003	
	PCB-118	0.00003	
	PCB-123	0.00003	
	PCB-126	0.1	
	PCB-156	0.00003	
	PCB-157	0.00003	
	PCB-167	0.00003	
	PCB-169	0.03	
	PCB-189	0.00003	
Monochlorobiphenyl homologs	PCB-1 through PCB-3	1	RA Rules
Dichlorobiphenyl homologs	PCB-4 through PCB-15	1	RA Rules
Trichlorobiphenyl homologs	PCB-16 through PCB-39	1	RA Rules
Tetrachlorobiphenyl homologs	PCB-40 through PCB-81	1	RA Rules
Pentachlorobiphenyl homologs	PCB-82 through PCB-127	1	RA Rules
Hexachlorobiphenyl homologs	PCB-129 through PCB-169	1	RA Rules
Heptachlorobiphenyl homologs	PCB-170 through PCB-193	1	RA Rules
Octachlorobiphenyl homologs	PCB-194 through PCB-205	1	RA Rules
Nonachlorobiphenyl homologs	PCB-206 through PCB-208	1	RA Rules
Total PCB Congeners (RA Calc; ND=0.5 RDL)	All PCB congeners	1	RA Rules
PCB TEQ - Mammals	PCB-77	0.0001	RA Rules
	PCB-81	0.0003	
	PCB-105	0.00003	
	PCB-114	0.00003	
	PCB-118	0.00003	
	PCB-123	0.00003	
	PCB-126	0.1	
	PCB-156	0.00003	
	PCB-157	0.00003	
	PCB-167	0.00003	
	PCB-169	0.03	
	PCB-189	0.00003	

Table 3. Summary of Analyte Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

Summed Analyte	Analytes Included in the Summed Analyte Total	TEF	Summation Rules Used
PCB TEQ - Birds	PCB-77	0.05	RA Rules
	PCB-81	0.1	
	PCB-105	0.0001	
	PCB-114	0.0001	
	PCB-118	0.00001	
	PCB-123	0.00001	
	PCB-126	0.1	
	PCB-156	0.0001	
	PCB-157	0.0001	
	PCB-167	0.00001	
	PCB-169	0.001	
	PCB-189	0.00001	
PCB TEQ - Fish	PCB-77	0.0001	RA Rules
	PCB-81	0.0005	
	PCB-105	0.000005	
	PCB-114	0.000005	
	PCB-118	0.000005	
	PCB-123	0.000005	
	PCB-126	0.005	
	PCB-156	0.000005	
	PCB-157	0.000005	
	PCB-167	0.000005	
	PCB-169	0.00005	
	PCB-189	0.000005	

Notes:

PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
TEF	Toxic equivalency factor
TEQ	Toxic equivalent

RI rules for summation are as follows:

Calculated totals are the sum of all detected concentrations. Non-detected concentrations are treated as zero.

If none of the analytes are detected in a sample, the highest reporting limit is used for the calculated total, and a U qualifier is used to indicate the lack of detected values.

RA rules for summation are as follows:

Calculated totals are the sum of all detected concentrations. For any analyte detected at least once in the data set within the study area for a given medium, the result is included in the summation at one-half the detection limit.

If none of the analytes are detected in a sample, the highest reporting limit is used for the calculated total, and a U qualifier is used to indicate the lack of detected values.

Non-detect results for analytes that were never detected within a data set for a given medium were treated as zero.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
PCB001	21.6 U	21.4 U	NC	38.6	22.3 U	NC	36.8 U	15 U	NC
PCB002	26.8 U	26.6 U	NC	26.6 U	27.6 U	NC	45.6 U	18.6 U	NC
PCB003	16.9	14 U	NC	34.2	16.3	NC	24 U	9.8 U	NC
PCB004	465	88.2	NC	757	151	NC	264	46.5	NC
PCB005	26.8 U	26.6 U	NC	26.6 U	27.6 U	NC	45.6 U	18.6 U	NC
PCB006	79.1	24.9 U	NC	113	28.7	NC	42.6 U	17.4 U	NC
PCB007	34 U	33.7 U	NC	33.7 U	35 U	NC	57.8 U	23.6 U	NC
PCB008	384	93.1	NC	407	106	NC	130 U	46.7 U	NC
PCB009	25.8	16.3 U	NC	23.8 J	16.9 U	NC	27.9 U	11.4 U	NC
PCB010	22.8	17.7 U	NC	38.4	18.4 U	NC	30.4 U	12.4 U	NC
PCB011	241	172	NC	269	159	NC	239 U	154	NC
PCB012 & 013	23.9 U	23.7 U	NC	23.7 U	24.7 U	NC	40.7 U	16.6 U	NC
PCB014	26.3 U	26 U	NC	26 U	27 U	NC	44.6 U	18.2 U	NC
PCB015	170	57.2	NC	169	86.8	NC	67.2 U	27.4 U	NC
PCB016	471	102	NC	382	108	NC	163	36.4	NC
PCB017	942	181	NC	1,010	224	NC	418	67.6	NC
PCB018 & 030	1,370	273	NC	1,250	327	NC	491	92.1 U	NC
PCB019	751	132	NC	687	146	NC	528	78.7	NC
PCB020 & 028	5,770	1,110	NC	8,570	1,820	NC	2,150	348 U	NC
PCB021 & 033	1,090	249	NC	873	277	NC	367	90.2 U	NC
PCB022	1,310	269	NC	1,330	336	NC	418	79.3	NC
PCB023	31.7 U	31.4 U	NC	31.4 U	32.7 U	NC	53.9 U	22 U	NC
PCB024	27.3	19.1 U	NC	28.5	19.9 U	NC	32.8 U	13.4 U	NC
PCB025	301	56.5	NC	326	69.5	NC	110	19.6 U	NC
PCB026 & 029	773	145	NC	787	170	NC	284	45.2	NC
PCB027	162	31.9	NC	294	61.7	NC	97.8	19 U	NC
PCB031	3,140	616	NC	3,100	717	NC	1,010	183 U	NC
PCB032	497	97.1 U	NC	1,420	283	NC	216	40.1 U	NC
PCB034	22.8 U	22.6 U	NC	24.2	23.5 U	NC	38.7 U	15.8 U	NC
PCB035	23.7 U	23.4 U	NC	23.4 U	24.4 U	NC	40.2 U	16.4 U	NC
PCB036	25.1 U	24.9 U	NC	24.9 U	25.8 U	NC	42.6 U	17.4 U	NC
PCB037	930	195	NC	482	195	NC	142	46.1	NC
PCB038	18.2 U	18 U	NC	23	18.7 U	NC	30.9 U	12.6 U	NC
PCB039	22.8 U	22.6 U	NC	22.6 U	23.5 U	NC	38.7 U	15.8 U	NC
PCB040 & 041 & 071	2,620	501	NC	10,600	1,920	NC	1,120	204	NC
PCB042	2,160	403	NC	6,110	1,100	NC	878	145	NC
PCB043 & 073	226	40.7	NC	672	119	NC	174	27.5	NC
PCB044 & 047 & 065	10,600	1,890	NC	29,000	5,170	NC	5,550	928	NC
PCB045 & 051	1,420	256	NC	3,010	516	NC	592	89.2	NC
PCB046	273	71.4 U	NC	669	120	NC	123 U	50 U	NC
PCB048	1,240	223	NC	3,530	648	NC	513	90.2	NC
PCB049 & 069	7,030	1,270	NC	21,100	3,770	NC	3,540	565	NC
PCB050 & 053	908	159	NC	2,730	477	NC	432	63.7	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
PCB052	11,400	2,140	NC	35,700	6,610	NC	5,660	873	NC
PCB054	120	22.5	NC	99.7	21.1 U	NC	109	16.3	NC
PCB055	21.6 U	21.4 U	NC	21.4 U	22.3 U	NC	36.8 U	15 U	NC
PCB056	1,990	375	NC	5,910	1,090	NC	889	156	NC
PCB057	47.7	18 U	NC	87.1	18.7 U	NC	30.9 U	12.6 U	NC
PCB058	30.6	19.1 U	NC	54.7	19.9 U	NC	32.8 U	13.4 U	NC
PCB059 & 062 & 075	872	214 U	NC	2,190	369	NC	368 U	150 U	NC
PCB060	2,010	377	NC	7,940	1,440	NC	1,270	207	NC
PCB061 & 070 & 074 & 076	12,900	2,340	NC	36,600	6,250	NC	6,320	1,180	NC
PCB063	511	88.5	NC	1,390	228	NC	269	53.1	NC
PCB064	4,320	801	NC	14,600	2,600	NC	1,490	289	NC
PCB066	9,640	1,770	NC	34,300	6,030	NC	6,490	1,030	NC
PCB067	226	41.7	NC	366	63.6	NC	107	19.6	NC
PCB068	109	57.1 U	NC	128	59.4 U	NC	98 U	40 U	NC
PCB072	134	22.9	NC	232	38.6	NC	85.8	15.5	NC
PCB073	31.7 U	31.4 U	NC	31.4 U	32.7 U	NC	53.9 U	22 U	NC
PCB077	625	111	NC	1,140	198	NC	276	42.5	NC
PCB078	13.3 U	13.1 U	NC	13.1 U	13.7 U	NC	22.5 U	9.2 U	NC
PCB079	75.9	22.3 U	NC	260	51.2	NC	47	15.6 U	NC
PCB080	21.3 U	21.1 U	NC	21.1 U	22 U	NC	36.3 U	14.8 U	NC
PCB081	46	25.7 U	NC	85.9	26.7 U	NC	44.1 U	18 U	NC
PCB082	1,010	185	NC	2,710	480	NC	663	103	NC
PCB083	739	111	NC	1,580	274	NC	489	74.2	NC
PCB084	2,620	467	NC	4,910	809	NC	1,230	200	NC
PCB085 & 117 & 116	3,450	591	NC	10,700	1,980	NC	3,710	545	NC
PCB086 & 087 & 097 & 108 & 119 & 125	8,710	1,550	NC	22,800	4,090	NC	7,290	1,100	NC
PCB088 & 091	2,380	407	NC	5,020	818	NC	1,170	228	NC
PCB089	78.5	16.6 U	NC	352	62.7	NC	48.4	11.6 U	NC
PCB090 & 101 & 113	17,000	2,980	NC	38,200	6,690	NC	16,300	2,380	NC
PCB092	3,540	602	NC	7,800	1,310	NC	3,430	496	NC
PCB093 & 098 & 100 & 102	983	329 U	NC	1,620	342 U	NC	942	230 U	NC
PCB094	79.5	71.4 U	NC	140	74.3 U	NC	123 U	50 U	NC
PCB095	9,910	1,770	NC	18,200	3,010	NC	5,240	955	NC
PCB096	91.7	32 U	NC	254	42.7	NC	54.9 U	22.4 U	NC
PCB099	9,460	1,660	NC	25,000	4,170	NC	11,600	1,680	NC
PCB103	281	47.9	NC	321	57	NC	244	40.7	NC
PCB104	43 U	42.6 U	NC	42.6 U	44.3 U	NC	73 U	29.8 U	NC
PCB105	6,610	1,180	NC	19,400	3,440	NC	7,370	1,070	NC
PCB106	42.7 U	42.3 U	NC	42.3 U	44 U	NC	72.5 U	29.6 U	NC
PCB107 & 124	509	87.2	NC	1,050	182	NC	490	65.5	NC
PCB109	1,360	232	NC	2,950	501	NC	1,660	230	NC
PCB110 & 115	14,000	2,590	NC	32,900	5,890	NC	11,900	1,730	NC
PCB111	21.3 U	21.1 U	NC	23.5	22 U	NC	53.1	14.8 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
PCB112	31.7 U	31.4 U	NC	31.4 U	32.7 U	NC	53.9 U	22 U	NC
PCB114	508	89.3	NC	1,390	251	NC	616	83.1	NC
PCB118	19,800	3,520	NC	44,900	8,110	NC	23,100	3,180	NC
PCB120	90.7	71.4 U	NC	113	74.3 U	NC	170	50 U	NC
PCB121	20.9	19.7 U	NC	19.7 U	20.5 U	NC	38.9	13.8 U	NC
PCB122	117	26 U	NC	217	42.1	NC	77.4	18.2 U	NC
PCB123	340	57.9	NC	918	162	NC	508	62.9	NC
PCB126	41.5	38.6 U	NC	77.3	40.1 U	NC	66.2 U	27 U	NC
PCB127	39.5	24.6 U	NC	74.1	25.5 U	NC	42.2	17.2 U	NC
PCB128 & 166	3,140	515	NC	5,890	968	NC	4,580	571	NC
PCB129 & 138 & 163	29,500	4,780	NC	43,200	6,920	NC	45,700	5,500	NC
PCB130	1,490	238	NC	2,090	323	NC	1,600	196	NC
PCB131	149	26.8	NC	206	32.5	NC	140	20.6	NC
PCB132	4,270	722	NC	5,260	799	NC	3,590	509	NC
PCB133	521	83.6	NC	648	98	NC	1,260	152	NC
PCB134 & 143	734	143 U	NC	1,010	149	NC	710	100 U	NC
PCB135 & 151	7,610	1,300	NC	8,990	1,390	NC	10,400	1,370	NC
PCB136	1,790	307	NC	2,270	357	NC	1,650	224	NC
PCB137	1,480	226	NC	2,180	364	NC	1,760	215	NC
PCB139 & 140	428	68.8	NC	790	117	NC	662	86.8	NC
PCB141	4,100	692	NC	6,440	982	NC	5,440	668	NC
PCB142	24.5 U	24.3 U	NC	24.3 U	25.2 U	NC	41.7 U	17 U	NC
PCB144	897	145	NC	1,160	172	NC	825	109	NC
PCB145	27.1 U	26.9 U	NC	26.9 U	27.9 U	NC	46.1 U	18.8 U	NC
PCB146	5,070	818	NC	6,360	970	NC	11,700	1,410	NC
PCB147 & 149	15,200	2,590	NC	16,000	2,430	NC	13,200	1,850	NC
PCB148	69.1	42.9 U	NC	70.6	44.6 U	NC	108	30 U	NC
PCB150	47	30.9 U	NC	39.3	32.1 U	NC	52.9 U	21.6 U	NC
PCB152	33.8	33.4 U	NC	35.5	34.8 U	NC	57.4 U	23.4 U	NC
PCB153 & 168	29,000	4,640	NC	36,000	5,690	NC	52,400	6,210	NC
PCB154	467	77.1	NC	572	84.8	NC	860	101	NC
PCB155	35.5	35.1 U	NC	35.1 U	36.5 U	NC	60.3 U	24.6 U	NC
PCB156 & 157	2,920	502	NC	4,500	804	NC	4,660	599	NC
PCB158	2,300	367	NC	4,030	652	NC	3,290	398	NC
PCB159	72.1 U	71.4 U	NC	71.4 U	74.3 U	NC	123 U	50 U	NC
PCB160	2.6 U	2.57 U	NC	2.57 U	2.67 U	NC	4.41 U	1.8 U	NC
PCB161	34.3 U	34 U	NC	34 U	35.3 U	NC	58.3 U	23.8 U	NC
PCB162	92.4	24.1 U	NC	150	25.1 U	NC	92.6	16.9 U	NC
PCB164	1,210	211	NC	1,970	301	NC	1,870	225	NC
PCB165	34 U	33.7 U	NC	33.7 U	35 U	NC	68.5	23.6 U	NC
PCB167	1,210	201	NC	1,510	256	NC	1,710	205	NC
PCB169	84.7	22.6 U	NC	22.6 J	23.5 U	NC	38.8 U	15.8 U	NC
PCB170	4,140	697	NC	4,090	827	NC	7,800	911	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
PCB171 & 173	1,520	241	NC	1,660	290	NC	2,610	312	NC
PCB172	976	149	NC	954	167	NC	1,600	172	NC
PCB174	3,640	603	NC	3,060	524	NC	3,400	420	NC
PCB175	223	42 U	NC	215	43.7 U	NC	318	37.4	NC
PCB176	406	63.2	NC	324	54.4 U	NC	361	44.6	NC
PCB177	2,970	484	NC	2,660	455	NC	3,730	446	NC
PCB178	1,500	231	NC	1,460	236	NC	2,910	317	NC
PCB179	1,740	286	NC	1,550	258	NC	2,070	265	NC
PCB180 & 193	13,600	2,260	NC	11,200	2,190	NC	26,200	2,970	NC
PCB181	65.9	38.3 U	NC	68.7	39.8 U	NC	103	26.8 U	NC
PCB182	37.1	26 U	NC	44.4	27 U	NC	44.6 U	18.2 U	NC
PCB183 & 185	4,410	701	NC	4,220	718	NC	7,960	921	NC
PCB184	31.4 U	31.1 U	NC	31.1 U	32.4 U	NC	53.4 U	21.8 U	NC
PCB186	45.6 U	45.1 U	NC	45.1 U	46.9 U	NC	77.5 U	31.6 U	NC
PCB187	10,200	1,640	NC	8,860	1,480	NC	23,700	2,490	NC
PCB188	45.6 U	36.3 U	NC	36.3 U	37.7 U	NC	62.3 U	25.4 U	NC
PCB189	191	30.1	NC	185	38	NC	434	46	NC
PCB190	442	86.8	NC	432	120	NC	1,490	176	NC
PCB191	209	36.3 U	NC	208	37.7 U	NC	375	41.6	NC
PCB192	25.4 U	25.1 U	NC	25.1 U	26.1 U	NC	43.1 U	17.6 U	NC
PCB194	1,540	286	NC	1,210	252	NC	3,570	343	NC
PCB195	708	118	NC	619	115	NC	1,650	175	NC
PCB196	918	163	NC	731	146	NC	1,920	203	NC
PCB197 & 200	260	59.3 U	NC	198	61.7 U	NC	367	41.5 U	NC
PCB198 & 199	1,960	391	NC	1,450	334	NC	5,280	537	NC
PCB201	328	51.3	NC	263	43.4	NC	595	63.5	NC
PCB202	691	111	NC	578	106	NC	1,340	141	NC
PCB203	1,570	264	NC	1,300	236	NC	2,860	310	NC
PCB204	35.2 U	34.8 U	NC	34.8 U	36.2 U	NC	59.8 U	24.4 U	NC
PCB205	91.7	34.7 U	NC	81	36 U	NC	223	24.3 U	NC
PCB206	710	142	NC	496	102	NC	2,560	294	NC
PCB207	113	68.6 U	NC	78.8	71.3 U	NC	313	48 U	NC
PCB208	300	69.8 U	NC	194	72.6 U	NC	866	97.2	NC
PCB209	316	65.3	NC	208	51.3	NC	966	151	NC

Table 4. Analytical Results Including Summation Groups
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LocationID	EPA1-SB04E-02			EPA1-SB04E-06			EPA1-SB05E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618740.363	7618995.081	7618995.081	7618995.081	7621025.952	7621025.952	7621025.952
Y-coordinate	714962.802	714962.802	714962.802	714296.5253	714296.5253	714296.5253	710385.5935	710385.5935	710385.5935
RiverMile	4.2	4.2	4.2	4.3	4.3	4.3	5.2	5.2	5.2
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	18:34	18:34	18:34	17:10	17:10	17:10	9:54	9:54	9:54
Sample Mass (g)	198.45	148.75	347.2	184.84	171.54	356.38	252.22	226.9	479.12
Monochlorobiphenyl homologs	27.7 T	26.6 UT	NC	72.8 T	27.5 T	NC	45.6 UT	18.6 UT	NC
Dichlorobiphenyl homologs	1,390 T	440 T	NC	1,780 JT	549 T	NC	533 T	258 T	NC
Trichlorobiphenyl homologs	17,600 T	3,450 T	NC	20,600 T	4,780 T	NC	6,470 T	778 T	NC
Tetrachlorobiphenyl homologs	71,600 T	13,100 T	NC	219,000 T	38,900 T	NC	36,200 T	6,160 T	NC
Pentachlorobiphenyl homologs	104,000 T	18,500 T	NC	244,000 T	42,700 T	NC	98,500 T	14,500 T	NC
Hexachlorobiphenyl homologs	114,000 T	18,700 T	NC	151,000 JT	24,000 T	NC	168,000 T	20,800 T	NC
Heptachlorobiphenyl homologs	46,300 T	7,580 T	NC	41,200 T	7,440 T	NC	85,100 T	9,620 T	NC
Octachlorobiphenyl homologs	8,070 T	1,430 T	NC	6,430 T	1,280 T	NC	17,800 T	1,810 T	NC
Nonachlorobiphenyl homologs	1,120 T	211 T	NC	769 T	174 T	NC	3,740 T	415 T	NC
Total PCB Congeners (RI Calc; ND=0)	364,000 JT	62,300 JT	235,000 JT	685,000 JT	119,000 JT	412,000 JT	417,000 JT	53,300 JT	245,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	364,000 JT	63,500 JT	235,000 JT	685,000 JT	120,000 JT	413,000 JT	418,000 JT	54,400 JT	246,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	7.71 T	0.179 JT	4.49 JT	10.7 JT	0.412 JT	5.76 JT	1.18 JT	0.162 JT	0.697 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	7.71 T	2.45 JT	5.46 JT	10.7 JT	2.77 JT	6.9 JT	5.08 JT	1.75 JT	3.5 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	41.3 T	8.99 JT	27.5 JT	76.3 JT	13.8 JT	46.2 JT	20.9 JT	4.59 JT	13.2 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.455 T	0.142 JT	0.321 JT	0.909 JT	0.193 JT	0.564 JT	0.397 JT	0.103 JT	0.258 JT
% Lipids	10.6	1.87	NC	9.95	1.98	NC	6.58	0.468	NC

Notes:

	All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).
J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
PCB001	21 U	22.1 U	NC	32.9 U	35 U	NC	27.3	21.8 U	NC
PCB002	26.1 U	27.4 U	NC	40.8 U	43.5 U	NC	27.4 U	27.1 U	NC
PCB003	16.9	14.4 U	NC	21.5 U	22.9 U	NC	15.9	14.3 U	NC
PCB004	500	154	NC	405	83.1	NC	606	183	NC
PCB005	26.1 U	27.4 U	NC	40.8 U	43.5 U	NC	27.4 U	27.1 U	NC
PCB006	48.2	25.6 U	NC	44.8	40.7 U	NC	91.1	27.9	NC
PCB007	33.1 U	34.7 U	NC	51.8 U	55.1 U	NC	34.7 U	34.4 U	NC
PCB008	204	95	NC	182	58.1	NC	447	138	NC
PCB009	16 U	16.8 U	NC	25 U	26.6 U	NC	19.3 J	16.6 U	NC
PCB010	19.5	18.2 U	NC	27.2 U	29 U	NC	32.3	18.1 U	NC
PCB011	329	182	NC	308	228 U	NC	292	177	NC
PCB012 & 013	23.3 U	24.4 U	NC	36.4 U	38.8 U	NC	24.4 U	24.2 U	NC
PCB014	25.5 U	26.8 U	NC	39.9 U	42.5 U	NC	26.8 U	26.5 U	NC
PCB015	115	59.9	NC	79.5	64 U	NC	111	48.3	NC
PCB016	167	113	NC	224	51.4 U	NC	279	91.6	NC
PCB017	587	250	NC	627	114	NC	803	242	NC
PCB018 & 030	528 U	314	NC	737	149 U	NC	892	294	NC
PCB019	822	250	NC	712	142	NC	549	173	NC
PCB020 & 028	1,840	1,340	NC	3,650	423	NC	4,250	1,290	NC
PCB021 & 033	366	231	NC	444	211 U	NC	775	268	NC
PCB022	331	310	NC	781	87.9	NC	711	220	NC
PCB023	30.8 U	32.4 U	NC	48.2 U	51.4 U	NC	32.4 U	32 U	NC
PCB024	18.8 U	19.7 U	NC	29.4 U	31.3 U	NC	19.7 U	19.5 U	NC
PCB025	121	86.7	NC	233	45.8 U	NC	229	70.3	NC
PCB026 & 029	282	195	NC	516	98.1 U	NC	608	181	NC
PCB027	127	42.8	NC	116	44.4 U	NC	128	41.9	NC
PCB031	930	812	NC	2,080	267	NC	1,980	620	NC
PCB032	326	126	NC	288	66.7	NC	523	158 U	NC
PCB034	22.1 U	23.2 U	NC	34.6 U	36.9 U	NC	23.2 U	23 U	NC
PCB035	23 U	24.1 U	NC	36 U	38.3 U	NC	24.1 U	23.9 U	NC
PCB036	24.4 U	25.6 U	NC	38.2 U	40.7 U	NC	25.6 U	25.3 U	NC
PCB037	239	148	NC	414	50.8	NC	180	75.3	NC
PCB038	17.7 U	18.5 U	NC	27.6 U	29.4 U	NC	18.5 U	18.3 U	NC
PCB039	22.1 U	23.2 U	NC	34.6 U	36.9 U	NC	23.2 U	23 U	NC
PCB040 & 041 & 071	1,430	659	NC	1,850	274	NC	2,620	761	NC
PCB042	725	602	NC	1,740	167	NC	1,860	532	NC
PCB043 & 073	161	66.9	NC	194	51.4 U	NC	205	63.1	NC
PCB044 & 047 & 065	10,500	3,170	NC	9,620	1,090	NC	11,100	3,260	NC
PCB045 & 051	1,760	439	NC	1,200	140	NC	1,000	301	NC
PCB046	145	73.5 U	NC	181	117 U	NC	159	72.8 U	NC
PCB048	433	288	NC	816	91.6	NC	1,240	376	NC
PCB049 & 069	5,330	2,190	NC	6,330	754	NC	8,400	2,530	NC
PCB050 & 053	1,080	226	NC	597	103	NC	857	259	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
PCB052	7,150	3,270	NC	9,860	1,190	NC	12,500	3,730	NC
PCB054	232	45.6	NC	136	33.2 U	NC	105	31	NC
PCB055	21 U	22.1 U	NC	32.9 U	35 U	NC	22.1 U	21.8 U	NC
PCB056	611	656	NC	2,050	152	NC	1,390	432	NC
PCB057	22.7	18.5 U	NC	35.9	29.4 U	NC	54.8	18.3 U	NC
PCB058	23.3	19.7 U	NC	34.6	31.3 U	NC	37.9	19.5 U	NC
PCB059 & 062 & 075	427	221 U	NC	674	350 U	NC	801	235	NC
PCB060	710	509	NC	1,670	166	NC	2,290	687	NC
PCB061 & 070 & 074 & 076	6,190	3,640	NC	11,600	1,210	NC	14,000	4,160	NC
PCB063	278	120	NC	393	49.8	NC	657	189	NC
PCB064	1,450	1,180	NC	3,500	352	NC	3,900	1,150	NC
PCB066	5,170	2,500	NC	7,780	910	NC	12,200	3,630	NC
PCB067	99	64.3	NC	210	28 U	NC	199	56.8	NC
PCB068	181	58.8 U	NC	112	93.5 U	NC	132	58.3 U	NC
PCB072	137	43.3	NC	133	21 U	NC	187	53.6	NC
PCB073	30.8 U	32.4 U	NC	194	0 U	NC	32.4 U	21.8 U	NC
PCB077	249	149	NC	535	48.7	NC	486	148	NC
PCB078	12.9 U	13.5 U	NC	20.2 U	21.5 U	NC	13.5 U	13.4 U	NC
PCB079	93.8	30.8	NC	94.8	36.4 U	NC	92.1	34.8	NC
PCB080	20.7 U	21.8 U	NC	32.5 U	34.6 U	NC	21.8 U	21.6 U	NC
PCB081	25.7	26.5 U	NC	53.6	42.1 U	NC	38.7	26.2 U	NC
PCB082	612	330	NC	1,080	83.2	NC	911	260	NC
PCB083	752	256	NC	632	67.2	NC	828	225	NC
PCB084	1,850	904	NC	2,660	215	NC	2,040	579	NC
PCB085 & 117 & 116	3,120	1,010	NC	3,290	444	NC	6,130	1,780	NC
PCB086 & 087 & 097 & 108 & 119 & 125	7,430	2,900	NC	9,420	887	NC	10,800	3,130	NC
PCB088 & 091	2,130	846	NC	2,530	236	NC	2,400	675	NC
PCB089	52.8	25.8	NC	72.5	27.1 U	NC	84.9	25.5	NC
PCB090 & 101 & 113	20,100	5,580	NC	18,000	1,970	NC	22,400	6,390	NC
PCB092	4,520	1,140	NC	3,560	416	NC	4,990	1,410	NC
PCB093 & 098 & 100 & 102	1,970	343	NC	1,070	537 U	NC	1,130	335 U	NC
PCB094	129	73.5 U	NC	110 U	117 U	NC	73.5 U	72.8 U	NC
PCB095	10,100	3,090	NC	8,970	1,000	NC	10,000	2,860	NC
PCB096	156	32.9 U	NC	85.4	52.3 U	NC	117	33.3	NC
PCB099	12,700	2,810	NC	9,690	1,640	NC	16,700	4,740	NC
PCB103	625	116	NC	331	43 U	NC	327	92.9	NC
PCB104	41.8 U	43.8 U	NC	65.4 U	69.6 U	NC	43.8 U	43.4 U	NC
PCB105	5,330	1,760	NC	6,110	755	NC	12,100	3,560	NC
PCB106	41.5 U	43.5 U	NC	64.9 U	69.2 U	NC	43.5 U	43.1 U	NC
PCB107 & 124	349	146	NC	534	50.9 U	NC	697	195	NC
PCB109	1,500	373	NC	1,300	206	NC	2,250	631	NC
PCB110 & 115	11,500	4,710	NC	15,300	1,520	NC	16,700	4,840	NC
PCB111	67.3	21.8 U	NC	32.5 U	34.6 U	NC	40.1	21.6 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
PCB112	30.8 U	32.4 U	NC	48.2 U	51.4 U	NC	32.4 U	32 U	NC
PCB114	427	120	NC	429	57.5 U	NC	983	275	NC
PCB118	23,300	5,310	NC	18,600	2,740	NC	36,900	10,500	NC
PCB120	235	73.5 U	NC	110 U	117 U	NC	139	72.8 U	NC
PCB121	56.6	20.3 U	NC	30.3 U	32.2 U	NC	31.8	20.1 U	NC
PCB122	25.5 U	35.5	NC	141	42.5 U	NC	116	32.4	NC
PCB123	303	89.7	NC	426	56.2	NC	607	164	NC
PCB126	49.7	39.7 U	NC	59.2 U	63.1 U	NC	67.4	39.3 U	NC
PCB127	67.7	25.3 U	NC	37.7 U	40.2 U	NC	87.3	33.9	NC
PCB128 & 166	5,530	822	NC	3,020	406	NC	6,300	1,670	NC
PCB129 & 138 & 163	74,900	8,120	NC	29,800	4,420	NC	54,200	13,900	NC
PCB130	2,010	407	NC	1,530	157	NC	2,030	502	NC
PCB131	155	56.5	NC	213	39.7 U	NC	159	41.7	NC
PCB132	4,330	1,440	NC	5,140	416	NC	3,990	1,000	NC
PCB133	1,510	149	NC	580	153	NC	985	238	NC
PCB134 & 143	937	236	NC	835	234 U	NC	832	199	NC
PCB135 & 151	16,100	2,420	NC	8,010	1,090	NC	9,400	2,390	NC
PCB136	3,120	622	NC	1,880	216	NC	1,990	513	NC
PCB137	2,100	326	NC	1,070	185	NC	3,150	767	NC
PCB139 & 140	729	114	NC	426	67.3	NC	900	214	NC
PCB141	10,400	1,220	NC	4,310	428	NC	6,180	1,510	NC
PCB142	23.8 U	25 U	NC	37.3 U	39.7 U	NC	25 U	24.8 U	NC
PCB144	1,340	264	NC	906	96.5	NC	941	249	NC
PCB145	26.4 U	27.6 U	NC	41.2 U	43.9 U	NC	27.6 U	27.4 U	NC
PCB146	14,100	1,470	NC	5,770	1,320	NC	8,530	2,140	NC
PCB147 & 149	16,200	5,150	NC	17,300	1,630	NC	12,700	3,320	NC
PCB148	168	44.1 U	NC	82.5	70.1 U	NC	93.2	43.7 U	NC
PCB150	72.8	31.8 U	NC	63.5	50.5 U	NC	39.5	31.5 U	NC
PCB152	93.8	34.4 U	NC	51.3 U	54.7 U	NC	34.7	34.1 U	NC
PCB153 & 168	93,100	8,280	NC	31,000	5,500	NC	55,900	14,000	NC
PCB154	1,510	153	NC	538	103	NC	850	220	NC
PCB155	34.5 U	36.2 U	NC	53.9 U	57.5 U	NC	36.2 U	35.8 U	NC
PCB156 & 157	6,410	680	NC	2,500	457	NC	5,980	1,700	NC
PCB158	6,100	2.65	NC	2,210	319	NC	4,650	1,180	NC
PCB159	91.6	73.5 U	NC	110 U	117 U	NC	73.5 U	72.8 U	NC
PCB160	2.52 U	2.65 U	NC	3.95 U	4.21 U	NC	2.65 U	2.62 U	NC
PCB161	33.4 U	35 U	NC	52.2 U	55.6 U	NC	35 U	34.7 U	NC
PCB162	201	24.9 U	NC	73.5	39.5 U	NC	158	40.3	NC
PCB164	2,200	355	NC	1,410	150	NC	1,540	394	NC
PCB165	82	34.7 U	NC	51.8 U	55.1 U	NC	44.8	34.4 U	NC
PCB167	2,440	275	NC	1,120	177	NC	2,020	567	NC
PCB169	318	0 J	NC	57.5 U	37 U	NC	130	37.8 J	NC
PCB170	20,100	1,200	NC	4,320	856	NC	7,730	2,420	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
PCB171 & 173	7,360	413	NC	1,420	257	NC	2,870	766	NC
PCB172	3,850	261	NC	943	167	NC	1,540	426	NC
PCB174	4,550	1,110	NC	3,630	333	NC	2,750	711	NC
PCB175	633	62.3	NC	212	68.7 U	NC	272	74.4	NC
PCB176	470	134	NC	478	85.5 U	NC	297	77	NC
PCB177	5,660	885	NC	2,990	418	NC	2,900	753	NC
PCB178	4,940	435	NC	1,480	339	NC	2,320	610	NC
PCB179	3,090	554	NC	1,870	199	NC	1,730	459	NC
PCB180 & 193	61,700	4,100	NC	13,500	4,080	NC	25,100	7,560	NC
PCB181	174	39.4 U	NC	58.8 U	62.6 U	NC	133	39 U	NC
PCB182	88.9	26.8 U	NC	39.9 U	42.5 U	NC	83	26.5 U	NC
PCB183 & 185	18,200	1,280	NC	4,660	798	NC	7,270	1,970	NC
PCB184	30.6 U	32.1 U	NC	47.8 U	50.9 U	NC	32.1 U	31.7 U	NC
PCB186	44.3 U	46.5 U	NC	69.3 U	73.8 U	NC	46.5 U	46 U	NC
PCB187	31,200	2,910	NC	10,100	2,830	NC	14,600	3,900	NC
PCB188	58.4	37.4 U	NC	55.7 U	59.3 U	NC	37.4 U	37 U	NC
PCB189	1,010	48.7	NC	195	45.9	NC	376	104	NC
PCB190	2,130	144	NC	650	162	NC	897	348	NC
PCB191	1,180	58.7	NC	214	59.3 U	NC	439	120	NC
PCB192	24.7 U	25.9 U	NC	38.6 U	41.1 U	NC	25.9 U	25.6 U	NC
PCB194	7,960	458	NC	1,670	1,140	NC	3,150	1,020	NC
PCB195	4,150	196	NC	725	326	NC	1,450	447	NC
PCB196	4,660	277	NC	1,010	603	NC	1,670	572	NC
PCB197 & 200	672	77	NC	272	97 U	NC	350	95	NC
PCB198 & 199	6,070	679	NC	2,610	1,440	NC	2,860	1,000	NC
PCB201	1,020	85.9	NC	310	143	NC	450	124	NC
PCB202	1,940	195	NC	723	269	NC	1,150	333	NC
PCB203	5,910	442	NC	1,620	589	NC	3,190	964	NC
PCB204	34.2 U	35.9 U	NC	53.5 U	57 U	NC	35.9 U	35.5 U	NC
PCB205	528	35.7 U	NC	97.8	56.7 U	NC	196	57.7	NC
PCB206	2,090	340	NC	1,200	1,250	NC	1,380	450	NC
PCB207	377	70.6 U	NC	147	194	NC	221	70.1	NC
PCB208	563	169	NC	597	458	NC	405	128	NC
PCB209	618	201	NC	612	601	NC	573	173	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05E-03			EPA1-SB05E-04			EPA1-SB05W-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7621611.18	7621611.18	7621611.18	7622425.679	7622425.679	7622425.679	7620011.504	7620011.504	7620011.504
Y-coordinate	709354.4934	709354.4934	709354.4934	708300.1288	708300.1288	708300.1288	709612.5127	709612.5127	709612.5127
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	5.2	5.2	5.2
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11	2-Oct-11	2-Oct-11	2-Oct-11
Sample Time	9:32	9:32	9:32	18:10	18:10	18:10	12:50	12:50	12:50
Sample Mass (g)	198.04	155.69	353.73	278.69	235.07	513.76	416.91	346.59	763.5
Monochlorobiphenyl homologs	27.4 T	27.4 UT	NC	40.8 UT	43.5 UT	NC	43.2 T	27.1 UT	NC
Dichlorobiphenyl homologs	1,220 T	521 T	NC	1,050 T	335 T	NC	1,600 JT	592 T	NC
Trichlorobiphenyl homologs	6,440 T	4,260 T	NC	10,900 T	1,520 T	NC	11,900 T	3,690 T	NC
Tetrachlorobiphenyl homologs	44,600 T	20,100 T	NC	61,600 T	7,110 T	NC	76,500 T	22,700 T	NC
Pentachlorobiphenyl homologs	109,000 T	32,100 T	NC	104,000 T	12,900 T	NC	150,000 T	42,700 T	NC
Hexachlorobiphenyl homologs	266,000 T	32,700 JT	NC	120,000 T	17,700 T	NC	184,000 T	46,900 JT	NC
Heptachlorobiphenyl homologs	166,000 T	13,700 T	NC	46,800 T	10,700 T	NC	71,300 T	20,400 T	NC
Octachlorobiphenyl homologs	32,900 T	2,430 T	NC	9,040 T	4,590 T	NC	14,500 T	4,610 T	NC
Nonachlorobiphenyl homologs	3,030 T	544 T	NC	1,940 T	1,900 T	NC	2,010 T	648 T	NC
Total PCB Congeners (RI Calc; ND=0)	631,000 JT	106,000 JT	400,000 JT	356,000 JT	55,000 JT	218,000 JT	512,000 JT	142,000 JT	344,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	631,000 JT	106,000 JT	400,000 JT	356,000 JT	57,300 JT	220,000 JT	512,000 JT	142,000 JT	344,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	15.7 T	0.263 JT	8.92 JT	0.951 JT	0.132 JT	0.576 JT	12.5 T	1.65 JT	7.56 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	15.7 T	2.25 JT	9.79 JT	4.77 JT	3.85 JT	4.35 JT	12.5 T	3.62 JT	8.45 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	21.8 T	11.1 JT	17.1 JT	36.2 JT	7.87 JT	23.2 JT	37.3 T	11.4 JT	25.6 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.498 T	0.162 JT	0.35 JT	0.377 JT	0.195 JT	0.294 JT	0.706 T	0.206 JT	0.479 JT
% Lipids	10.7	2.78	NC	9.67	1.67	NC	9.19	2.87	NC

Notes:

	All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).
J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
PCB001	14.2 U	14.9 U	NC	36.8 U	36.4 U	NC	35.4 U	22.1 U	NC
PCB002	17.5 U	18.4 U	NC	45.6 U	45.1 U	NC	43.9 U	27.4 U	NC
PCB003	9.25 U	9.7 U	NC	24 U	23.8 U	NC	23.1 U	14.4 U	NC
PCB004	299	63.6	NC	300	73.8 U	NC	1,080	346	NC
PCB005	17.5 U	18.4 U	NC	45.6 U	45.1 U	NC	43.9 U	27.4 U	NC
PCB006	45.9	17.2 U	NC	46.8	42.2 U	NC	41 U	25.6 U	NC
PCB007	22.3 U	23.4 U	NC	57.8 U	57.3 U	NC	55.7 U	34.7 U	NC
PCB008	192 U	55.4 U	NC	169	58.8	NC	148	54.9	NC
PCB009	11.9	11.3 U	NC	27.9 U	27.7 U	NC	26.9 U	16.8 U	NC
PCB010	11.7 U	12.3 U	NC	30.4 U	30.1 U	NC	74.8	22.2	NC
PCB011	212	125	NC	285	237 U	NC	347	180	NC
PCB012 & 013	15.7 U	16.4 U	NC	40.7 U	40.3 U	NC	39.2 U	24.4 U	NC
PCB014	17.2 U	18 U	NC	44.6 U	44.2 U	NC	42.9 U	26.8 U	NC
PCB015	77.2	28.3	NC	70.2	66.5 U	NC	70	41	NC
PCB016	163	40.4	NC	137	53.4 U	NC	111	46.7	NC
PCB017	410	91.1	NC	408	99.2	NC	513	164	NC
PCB018 & 030	517	118	NC	504	127 U	NC	404	126 U	NC
PCB019	454	83.8	NC	431	94.3	NC	2,210	625	NC
PCB020 & 028	2,070	437 U	NC	1,940	449	NC	1,580	515	NC
PCB021 & 033	283	89.3 U	NC	376	219 U	NC	249	133 U	NC
PCB022	423	98.7	NC	341	89.8	NC	211	93.5	NC
PCB023	20.8 U	21.8 U	NC	53.9 U	53.4 U	NC	51.9 U	32.4 U	NC
PCB024	12.6 U	13.3 U	NC	32.8 U	32.5 U	NC	31.6 U	19.7 U	NC
PCB025	131	28.2	NC	102	47.6 U	NC	86	29.3	NC
PCB026 & 029	303	63.2	NC	283	102 U	NC	206	70.3	NC
PCB027	85.9	18.8 U	NC	79.1	46.1 U	NC	189	53	NC
PCB031	1,130	244 U	NC	914	232	NC	613	229	NC
PCB032	212	48.6 U	NC	238	59.2	NC	233	77.9 U	NC
PCB034	14.9 U	15.6 U	NC	38.7 U	38.3 U	NC	37.3 U	23.2 U	NC
PCB035	15.5 U	16.2 U	NC	40.2 U	39.8 U	NC	38.7 U	24.1 U	NC
PCB036	16.4 U	17.2 U	NC	42.6 U	42.2 U	NC	41 U	25.6 U	NC
PCB037	281	65.4	NC	151	48.7	NC	150	66.8	NC
PCB038	11.9 U	12.5 U	NC	30.9 U	30.6 U	NC	29.7 U	18.5 U	NC
PCB039	14.9 U	15.6 U	NC	38.7 U	38.3 U	NC	37.3 U	23.2 U	NC
PCB040 & 041 & 071	1,010	191	NC	1,110	248	NC	1,030	340	NC
PCB042	924	181	NC	771	152	NC	606	181	NC
PCB043 & 073	176	23.3 U	NC	96.1	53.4 U	NC	96.8	35.1	NC
PCB044 & 047 & 065	4,820	934	NC	5,130	1,070	NC	7,860	2,340	NC
PCB045 & 051	557	117	NC	511	112	NC	891	291	NC
PCB046	97.4	49.5 U	NC	123 U	121 U	NC	118 U	73.5 U	NC
PCB048	399	83.9	NC	438	95.7	NC	376	130	NC
PCB049 & 069	3,220	612	NC	3,820	780	NC	5,190	1,550	NC
PCB050 & 053	390	78.7	NC	447	96.4	NC	665	206	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
PCB052	5,170	1,020	NC	5,890	1,300	NC	11,100	3,300	NC
PCB054	76.5	14.7	NC	78.2	34.5 U	NC	361	105	NC
PCB055	14.2 U	14.9 U	NC	36.8 U	36.4 U	NC	35.4 U	22.1 U	NC
PCB056	1,010	204	NC	760	158	NC	398	129	NC
PCB057	12.6	12.5 U	NC	30.9 U	30.6 U	NC	29.7 U	18.5 U	NC
PCB058	17.3	13.3 U	NC	32.8 U	32.5 U	NC	31.6 U	19.7 U	NC
PCB059 & 062 & 075	339	149 U	NC	368 U	364 U	NC	356	221 U	NC
PCB060	835	164	NC	1,220	238	NC	1,540	405	NC
PCB061 & 070 & 074 & 076	5,950	1,120	NC	7,150	1,480	NC	8,460	2,420	NC
PCB063	234	42.5	NC	333	65.6	NC	411	109	NC
PCB064	1,750	341	NC	1,810	373	NC	2,180	637	NC
PCB066	4,450	854	NC	6,050	1,230	NC	7,890	2,210	NC
PCB067	101	19.7	NC	76.8	29.1 U	NC	81.6	24.3	NC
PCB068	61	39.6 U	NC	98 U	97.1 U	NC	99.3	58.8 U	NC
PCB072	67.9	12.7	NC	96.9	21.8 U	NC	91.8	27.3	NC
PCB073	20.8 U	21.8 U	NC	53.9 U	53.4 U	NC	96.8	35.1 U	NC
PCB077	304	54.9	NC	260	52.4	NC	225	55.1	NC
PCB078	8.68 U	9.11 U	NC	22.5 U	22.3 U	NC	21.7 U	13.5 U	NC
PCB079	35.7	15.4 U	NC	61	37.9 U	NC	199	49.3	NC
PCB080	14 U	14.7 U	NC	36.3 U	35.9 U	NC	34.9 U	21.8 U	NC
PCB081	17.7	17.8 U	NC	44.1 U	43.7 U	NC	62.4	26.5 U	NC
PCB082	544	97.8	NC	524	108	NC	1,390	368	NC
PCB083	422	65.1	NC	421	82.4	NC	1,250	423	NC
PCB084	1,390	257	NC	1,040	141 U	NC	2,210	743	NC
PCB085 & 117 & 116	1,740	299	NC	3,230	627	NC	9,390	2,550	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,600	822	NC	5,740	1,140	NC	22,400	6,000	NC
PCB088 & 091	1,290	221	NC	1,140	57.3 U	NC	2,880	918	NC
PCB089	38.8	11.5 U	NC	33	28.2 U	NC	117	33.8	NC
PCB090 & 101 & 113	9,070	1,600	NC	11,900	2,340	NC	42,800	11,400	NC
PCB092	1,750	308	NC	2,520	496	NC	8,160	2,400	NC
PCB093 & 098 & 100 & 102	456	228 U	NC	601	558 U	NC	1,540	468	NC
PCB094	47.2 U	49.5 U	NC	123 U	121 U	NC	118 U	73.5 U	NC
PCB095	4,880	878	NC	4,980	1,060	NC	12,200	4,100	NC
PCB096	48.8	22.2 U	NC	55.3	54.4 U	NC	123	39.7	NC
PCB099	5,270	917	NC	10,800	1,920	NC	30,800	8,020	NC
PCB103	145	29.9	NC	165	44.7 U	NC	311	100	NC
PCB104	28.1 U	29.5 U	NC	73 U	72.3 U	NC	70.3 U	43.8 U	NC
PCB105	2,960	534	NC	7,390	1,450	NC	24,300	6,130	NC
PCB106	27.9 U	29.3 U	NC	72.5 U	71.8 U	NC	69.8 U	43.5 U	NC
PCB107 & 124	238	42.9	NC	354	68.8	NC	349	88.7	NC
PCB109	757	120	NC	1,340	269	NC	3,540	891	NC
PCB110 & 115	7,230	1,330	NC	9,600	1,920	NC	38,700	9,930	NC
PCB111	15.5	14.7 U	NC	36.3 U	35.9 U	NC	43.5	21.8 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
PCB112	20.8 U	21.8 U	NC	53.9 U	53.4 U	NC	51.9 U	32.4 U	NC
PCB114	231	39.7	NC	606	117	NC	1,680	422	NC
PCB118	9,030	1,620	NC	22,800	4,360	NC	69,700	17,200	NC
PCB120	54	49.5 U	NC	123 U	121 U	NC	158	73.5 U	NC
PCB121	13 U	13.7 U	NC	33.8 U	33.5 U	NC	44	20.3 U	NC
PCB122	50.3	18 U	NC	67.3	44.2 U	NC	42.9 U	26.8 U	NC
PCB123	172	35.2	NC	482	91.5	NC	679	130	NC
PCB126	25.5 U	26.7 U	NC	66.2 U	65.5 U	NC	63.7 U	39.7 U	NC
PCB127	16.2 U	17 U	NC	49.8	41.7 U	NC	165	39.6	NC
PCB128 & 166	1,230	231	NC	3,500	692	NC	12,500	3,030	NC
PCB129 & 138 & 163	13,100	2,480	NC	30,700	6,120	NC	94,400	23,600	NC
PCB130	691	130	NC	1,110	220	NC	3,310	818	NC
PCB131	91.8	17	NC	107	41.3 U	NC	285	75.7	NC
PCB132	2,150	427	NC	2,350	463	NC	6,590	1,910	NC
PCB133	310	53.9	NC	661	127	NC	1,480	400	NC
PCB134 & 143	381	99 U	NC	463	243 U	NC	1,340	385	NC
PCB135 & 151	3,940	720	NC	5,490	1,060	NC	13,500	3,630	NC
PCB136	955	174	NC	1,090	215	NC	3,510	1,010	NC
PCB137	600	92.7	NC	1,540	278	NC	5,180	1,440	NC
PCB139 & 140	205	35.4	NC	487	94.8	NC	1,670	469	NC
PCB141	1,680	331	NC	2,970	571	NC	12,800	2,960	NC
PCB142	16 U	16.8 U	NC	41.7 U	41.3 U	NC	40.1 U	25 U	NC
PCB144	373	77.2	NC	512	96.1	NC	1,590	420	NC
PCB145	17.7 U	18.6 U	NC	46.1 U	45.6 U	NC	44.3 U	27.6 U	NC
PCB146	3,120	528	NC	6,220	1,200	NC	14,300	3,630	NC
PCB147 & 149	6,450	1,520	NC	7,680	1,550	NC	11,200	3,260	NC
PCB148	42.9	29.7 U	NC	73.5 U	72.8 U	NC	105	44.1 U	NC
PCB150	31.7	21.4 U	NC	52.9 U	52.4 U	NC	50.9 U	31.8 U	NC
PCB152	22.1 U	23.2 U	NC	57.4 U	56.8 U	NC	77.2	34.4 U	NC
PCB153 & 168	14,100	2,600	NC	33,900	6,720	NC	95,500	24,800	NC
PCB154	261	46.4	NC	588	111	NC	1,190	306	NC
PCB155	23.2 U	24.4 U	NC	60.3 U	59.7 U	NC	58 U	36.2 U	NC
PCB156 & 157	1,400	228	NC	3,820	744	NC	13,900	3,350	NC
PCB158	877	163	NC	2,630	523	NC	9,830	2,330	NC
PCB159	47.2 U	49.5 U	NC	123 U	121 U	NC	118 U	73.5 U	NC
PCB160	1.7 U	1.78 U	NC	4.41 U	4.37 U	NC	4.25 U	2.65 U	NC
PCB161	22.5 U	23.6 U	NC	58.3 U	57.8 U	NC	56.1 U	35 U	NC
PCB162	17.5	16.7 U	NC	129	41 U	NC	310	75.7	NC
PCB164	568	102	NC	945	198	NC	3,360	744	NC
PCB165	22.3 U	23.4 U	NC	57.8 U	57.3 U	NC	69.2	34.7 U	NC
PCB167	577	91.5	NC	1,350	252	NC	3,230	736	NC
PCB169	18.7	15.7 U	NC	68.3 J	38.4 U	NC	182 U	41.7 J	NC
PCB170	1,900	326	NC	5,540	1,080	NC	20,200	4,690	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
PCB171 & 173	697	113	NC	1,730	345	NC	6,000	1,510	NC
PCB172	492	73.5	NC	1,060	203	NC	3,430	781	NC
PCB174	1,850	326	NC	1,800	333	NC	2,560	570	NC
PCB175	116	29.1 U	NC	189	71.4 U	NC	503	113	NC
PCB176	229	40.9	NC	220	88.8 U	NC	246	64.9	NC
PCB177	1,580	263	NC	2,020	389	NC	3,200	779	NC
PCB178	795	132	NC	1,670	315	NC	3,990	956	NC
PCB179	978	163	NC	1,150	222	NC	1,970	513	NC
PCB180 & 193	6,800	1,070	NC	18,200	3,630	NC	59,700	14,000	NC
PCB181	31.3	26.5 U	NC	89.6	65 U	NC	254	61.3	NC
PCB182	17.2 U	18 U	NC	49.3	44.2 U	NC	102	26.8 U	NC
PCB183 & 185	2,350	380	NC	4,540	925	NC	14,200	3,500	NC
PCB184	20.6 U	21.6 U	NC	53.4 U	52.9 U	NC	51.4 U	32.1 U	NC
PCB186	29.8 U	31.3 U	NC	77.5 U	76.7 U	NC	74.5 U	46.5 U	NC
PCB187	5,750	935	NC	11,400	2,220	NC	21,300	4,900	NC
PCB188	24 U	25.1 U	NC	62.3 U	61.7 U	NC	59.9 U	37.4 U	NC
PCB189	120	18.6	NC	310	56.4	NC	1,100	246	NC
PCB190	291	21.3 U	NC	964	207	NC	2,670	612	NC
PCB191	91.4	25.1 U	NC	293	61.7 U	NC	1,040	226	NC
PCB192	16.6 U	17.4 U	NC	43.1 U	42.7 U	NC	41.5 U	25.9 U	NC
PCB194	962	156	NC	2,500	518	NC	9,710	2,510	NC
PCB195	28.2 U	68.7	NC	1,130	233	NC	4,050	1,090	NC
PCB196	406	85.1	NC	1,400	286	NC	5,190	1,330	NC
PCB197 & 200	155	41.1 U	NC	228	101 U	NC	583	144	NC
PCB198 & 199	31.7 U	252	NC	2,630	555	NC	6,290	1,510	NC
PCB201	194	33	NC	329	67.7	NC	776	189	NC
PCB202	354	56.8	NC	871	178	NC	1,880	477	NC
PCB203	629	125	NC	2,230	441	NC	6,680	1,660	NC
PCB204	23 U	24.1 U	NC	59.8 U	59.2 U	NC	57.5 U	35.9 U	NC
PCB205	57.4	24 U	NC	145	58.9 U	NC	579	140	NC
PCB206	394	26.9 U	NC	1,190	281	NC	2,480	627	NC
PCB207	45.3 U	47.5 U	NC	172	117 U	NC	369	95.9	NC
PCB208	156	48.4 U	NC	392	119 U	NC	497	115	NC
PCB209	205	46	NC	636	144	NC	605	163	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-03			EPA1-SB05W-04			EPA1-SB06E-02		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7620605.967	7620605.967	7620605.967	7622425.679	7622425.679	7622425.679	7625302.748	7625302.748	7625302.748
Y-coordinate	708796.5154	708796.5154	708796.5154	708300.1288	708300.1288	708300.1288	706147.4378	706147.4378	706147.4378
RiverMile	5.4	5.4	5.4	5.7	5.7	5.7	6.4	6.4	6.4
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	15:11	15:11	15:11	12:01	12:01	12:01	17:30	17:30	17:30
Sample Mass (g)	137.44	108.01	245.45	460.92	348.52	809.44	431.95	295.78	727.73
Monochlorobiphenyl homologs	17.5 UT	18.4 UT	NC	45.6 UT	45.1 UT	NC	43.9 UT	27.4 UT	NC
Dichlorobiphenyl homologs	748 T	265 T	NC	900 T	297 T	NC	1,750 T	665 T	NC
Trichlorobiphenyl homologs	6,490 T	1,040 T	NC	5,970 T	1,440 T	NC	6,820 T	2,100 T	NC
Tetrachlorobiphenyl homologs	32,000 T	6,220 T	NC	36,500 T	7,910 T	NC	50,400 T	14,800 T	NC
Pentachlorobiphenyl homologs	52,400 T	9,460 T	NC	86,100 T	16,800 T	NC	275,000 T	72,500 T	NC
Hexachlorobiphenyl homologs	53,200 T	10,200 T	NC	109,000 JT	21,600 T	NC	311,000 T	79,500 JT	NC
Heptachlorobiphenyl homologs	24,100 T	3,920 T	NC	51,300 T	10,100 T	NC	143,000 T	33,600 T	NC
Octachlorobiphenyl homologs	2,790 T	809 T	NC	11,500 T	2,360 T	NC	35,700 T	9,050 T	NC
Nonachlorobiphenyl homologs	573 T	48.4 UT	NC	1,750 T	399 T	NC	3,350 T	838 T	NC
Total PCB Congeners (RI Calc; ND=0)	172,000 JT	30,800 JT	110,000 JT	302,000 JT	58,500 JT	197,000 JT	827,000 JT	212,000 JT	577,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	173,000 JT	32,000 JT	111,000 JT	303,000 JT	61,100 JT	199,000 JT	828,000 JT	213,000 JT	578,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	1.03 JT	0.0825 JT	0.614 JT	3.18 JT	0.217 JT	1.9 JT	3.48 JT	2.1 JT	2.92 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	2.31 JT	1.66 JT	2.02 JT	6.49 JT	4.07 JT	5.45 JT	9.39 JT	4.09 JT	7.24 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	18.8 JT	5.08 JT	12.8 JT	20 JT	8.38 JT	15 JT	25.5 JT	7.28 JT	18.1 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.176 JT	0.0899 JT	0.138 JT	0.39 JT	0.216 JT	0.315 JT	0.79 JT	0.255 JT	0.573 JT
% Lipids	6.49	0.86	NC	12.1	2.07	NC	12.7	3.53	NC

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
PCB001	35.4 U	35.4 U	NC	32.1 U	35.7 U	NC	36.4 U	35 U	NC
PCB002	43.9 U	43.9 U	NC	39.7 U	44.3 U	NC	45.1 U	43.5 U	NC
PCB003	23.1 U	23.1 U	NC	20.9 U	23.3 U	NC	23.8 U	22.9 U	NC
PCB004	362	75.1	NC	227	72.4 U	NC	237	71.5	NC
PCB005	43.9 U	43.9 U	NC	39.7 U	44.3 U	NC	45.1 U	43.5 U	NC
PCB006	41 U	41 U	NC	37.2 U	41.4 U	NC	63.6	40.7 U	NC
PCB007	55.7 U	55.7 U	NC	50.4 U	56.2 U	NC	57.3 U	55.1 U	NC
PCB008	132	59.8	NC	85.5	57.9	NC	204	74.4	NC
PCB009	26.9 U	26.9 U	NC	24.4 U	27.1 U	NC	27.7 U	26.6 U	NC
PCB010	29.2 U	29.2 U	NC	26.5 U	29.5 U	NC	30.1 U	29 U	NC
PCB011	260	230 U	NC	209 U	232 U	NC	334	228 U	NC
PCB012 & 013	39.2 U	39.2 U	NC	35.5 U	39.5 U	NC	40.3 U	38.8 U	NC
PCB014	42.9 U	42.9 U	NC	38.9 U	43.3 U	NC	44.2 U	42.5 U	NC
PCB015	64.6 U	64.6 U	NC	58.5 U	65.2 U	NC	76	64 U	NC
PCB016	116	51.9 U	NC	77.8	52.4 U	NC	83.2	51.4 U	NC
PCB017	320	81.3	NC	273	73.3	NC	499	144	NC
PCB018 & 030	352	107	NC	257	89.3	NC	545	167	NC
PCB019	641	126	NC	560	110	NC	184	55.7	NC
PCB020 & 028	1,310	290	NC	871	205	NC	1,490	465	NC
PCB021 & 033	231	213 U	NC	193 U	215 U	NC	219 U	211 U	NC
PCB022	261	66.5	NC	149	47.6 U	NC	224	78.6	NC
PCB023	51.9 U	51.9 U	NC	47 U	52.4 U	NC	53.4 U	51.4 U	NC
PCB024	31.6 U	31.6 U	NC	28.6 U	31.9 U	NC	32.5 U	31.3 U	NC
PCB025	85.7	46.2 U	NC	65.8	46.7 U	NC	181	52.5	NC
PCB026 & 029	189	99.1 U	NC	143	100 U	NC	439	133	NC
PCB027	74.8	44.8 U	NC	68.8	45.2 U	NC	138	44.4 U	NC
PCB031	687	168	NC	426	118	NC	932	291	NC
PCB032	158	43.5	NC	137	39.7	NC	377	112	NC
PCB034	37.3 U	37.3 U	NC	33.8 U	37.6 U	NC	38.3 U	36.9 U	NC
PCB035	38.7 U	38.7 U	NC	35 U	39 U	NC	39.8 U	38.3 U	NC
PCB036	41 U	41 U	NC	37.2 U	41.4 U	NC	42.2 U	40.7 U	NC
PCB037	170	43.9	NC	134	31.9 U	NC	114	44.6	NC
PCB038	29.7 U	29.7 U	NC	26.9 U	30 U	NC	30.6 U	29.4 U	NC
PCB039	37.3 U	37.3 U	NC	33.8 U	37.6 U	NC	38.3 U	36.9 U	NC
PCB040 & 041 & 071	680	128	NC	533	112	NC	1,110	340	NC
PCB042	515	93.8	NC	310	61.6	NC	541	160	NC
PCB043 & 073	57.2	51.9 U	NC	55.5	52.4 U	NC	82.4	51.4 U	NC
PCB044 & 047 & 065	4,140	717	NC	4,190	756	NC	3,260	975	NC
PCB045 & 051	530	99.9	NC	490	94.6	NC	330	93.6	NC
PCB046	118 U	118 U	NC	107 U	119 U	NC	121 U	117 U	NC
PCB048	252	49	NC	174	36.4	NC	327	99.5	NC
PCB049 & 069	2,320	396	NC	1,940	343	NC	2,820	819	NC
PCB050 & 053	449	82.5	NC	430	78.5	NC	326	94.5	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
PCB052	3,730	658	NC	2,850	534	NC	4,350	1,220	NC
PCB054	111	33.5 U	NC	112	33.8 U	NC	34.5 U	33.2 U	NC
PCB055	35.4 U	35.4 U	NC	32.1 U	35.7 U	NC	36.4 U	35 U	NC
PCB056	579	109	NC	260	56.4	NC	512	163	NC
PCB057	29.7 U	29.7 U	NC	26.9 U	30 U	NC	30.6 U	29.4 U	NC
PCB058	31.6 U	31.6 U	NC	28.6 U	31.9 U	NC	32.5 U	31.3 U	NC
PCB059 & 062 & 075	354 U	354 U	NC	321 U	357 U	NC	364 U	350 U	NC
PCB060	552	98.8	NC	387	72.4	NC	711	211	NC
PCB061 & 070 & 074 & 076	4,420	758	NC	3,450	640	NC	4,790	1,410	NC
PCB063	181	30.2	NC	229	39.9	NC	197	58.2	NC
PCB064	1,020	183	NC	598	119 U	NC	1,270	382	NC
PCB066	3,360	572	NC	3,430	606	NC	3,350	983	NC
PCB067	73.1	28.3 U	NC	74.3	28.6 U	NC	47.4	28 U	NC
PCB068	94.3 U	94.3 U	NC	87.6	95.2 U	NC	97.1 U	93.5 U	NC
PCB072	66.7	21.2 U	NC	64	21.4 U	NC	71.4	21 U	NC
PCB073	51.9 U	51.9 U	NC	55.5 U	52.4 U	NC	53.4 U	51.4 U	NC
PCB077	198	43.4 U	NC	289	50.3	NC	149	44	NC
PCB078	21.7 U	21.7 U	NC	19.7 U	21.9 U	NC	22.3 U	21.5 U	NC
PCB079	40.1	36.8 U	NC	33.3 U	37.1 U	NC	37.9 U	36.4 U	NC
PCB080	34.9 U	34.9 U	NC	31.6 U	35.2 U	NC	35.9 U	34.6 U	NC
PCB081	42.5 U	42.5 U	NC	38.5 U	42.9 U	NC	43.7 U	42.1 U	NC
PCB082	420	71.9	NC	222	41.7	NC	355	106	NC
PCB083	308	62.7 U	NC	271	63.3 U	NC	241	71.3	NC
PCB084	957	164	NC	620	138 U	NC	806	234	NC
PCB085 & 117 & 116	1,750	288	NC	1,630	284	NC	1,850	573	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,150	708 U	NC	3,320	714 U	NC	3,800	1,110	NC
PCB088 & 091	1,060	177	NC	780	136	NC	750	218	NC
PCB089	27.4 U	27.4 U	NC	24.8 U	27.6 U	NC	40.3	27.1 U	NC
PCB090 & 101 & 113	9,060	1,470	NC	8,230	1,410	NC	6,840	2,010	NC
PCB092	1,820	298	NC	1,730	290	NC	1,340	377	NC
PCB093 & 098 & 100 & 102	782	542 U	NC	2,040	548 U	NC	558 U	537 U	NC
PCB094	118 U	118 U	NC	107 U	119 U	NC	121 U	117 U	NC
PCB095	4,110	707	NC	3,350	590	NC	2,810	830	NC
PCB096	52.8 U	52.8 U	NC	49	53.3 U	NC	54.4 U	52.3 U	NC
PCB099	6,590	1,040	NC	7,860	1,290	NC	5,350	1,400	NC
PCB103	227	43.4 U	NC	215	43.8 U	NC	63.7	43 U	NC
PCB104	70.3 U	70.3 U	NC	63.7 U	71 U	NC	72.3 U	69.6 U	NC
PCB105	3,420	573	NC	3,390	586	NC	3,940	1,120	NC
PCB106	69.8 U	69.8 U	NC	63.2 U	70.5 U	NC	71.8 U	69.2 U	NC
PCB107 & 124	228	51.4 U	NC	180	51.9 U	NC	232	67.8	NC
PCB109	933	153	NC	1,080	187	NC	660	207	NC
PCB110 & 115	6,440	1,120	NC	4,850	859	NC	6,420	1,900	NC
PCB111	34.9 U	34.9 U	NC	35.2	35.2 U	NC	35.9 U	34.6 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
PCB112	51.9 U	51.9 U	NC	47 U	52.4 U	NC	53.4 U	51.4 U	NC
PCB114	293	58 U	NC	396	62.6	NC	294	82.5	NC
PCB118	13,000	2,110	NC	15,800	2,650	NC	10,900	3,130	NC
PCB120	118 U	118 U	NC	114	119 U	NC	121 U	117 U	NC
PCB121	32.5 U	32.5 U	NC	59.3	32.9 U	NC	33.5 U	32.2 U	NC
PCB122	57.5	42.9 U	NC	38.9 U	43.3 U	NC	46.4	42.5 U	NC
PCB123	242	54.7 U	NC	291	55.2 U	NC	195	55.5	NC
PCB126	63.7 U	63.7 U	NC	57.7 U	64.3 U	NC	65.5 U	63.1 U	NC
PCB127	40.6 U	40.6 U	NC	36.8 U	41 U	NC	41.7 U	40.2 U	NC
PCB128 & 166	1,990	299	NC	2,250	359	NC	1,740	476	NC
PCB129 & 138 & 163	24,100	3,590	NC	36,000	5,510	NC	11,800	3,520	NC
PCB130	1,040	157	NC	1,030	158	NC	519	156	NC
PCB131	89.1	40.1 U	NC	64.5	40.5 U	NC	73.2	39.7 U	NC
PCB132	2,490	380	NC	1,830	295	NC	1,450	431	NC
PCB133	606	87.3	NC	922	137	NC	213	60.2	NC
PCB134 & 143	458	236 U	NC	384	238 U	NC	266	234 U	NC
PCB135 & 151	5,620	830	NC	6,870	1,080	NC	1,970	604	NC
PCB136	1,160	174	NC	1,230	202	NC	556	163	NC
PCB137	1,100	146	NC	1,500	233	NC	736	217	NC
PCB139 & 140	305	56.6 U	NC	387	59.8	NC	229	65.7	NC
PCB141	2,570	405	NC	4,390	656	NC	1,170	359	NC
PCB142	40.1 U	40.1 U	NC	36.3 U	40.5 U	NC	41.3 U	39.7 U	NC
PCB144	611	89.7	NC	669	101	NC	225	70.1 U	NC
PCB145	44.3 U	44.3 U	NC	40.2 U	44.8 U	NC	45.6 U	43.9 U	NC
PCB146	5,910	869	NC	8,690	1,320	NC	1,980	542	NC
PCB147 & 149	10,100	1,500	NC	7,100	1,130	NC	3,670	1,100	NC
PCB148	87	70.8 U	NC	91.5	71.4 U	NC	72.8 U	70.1 U	NC
PCB150	50.9 U	50.9 U	NC	46.2 U	51.4 U	NC	52.4 U	50.5 U	NC
PCB152	55.2 U	55.2 U	NC	50 U	55.7 U	NC	56.8 U	54.7 U	NC
PCB153 & 168	29,800	4,350	NC	52,800	8,030	NC	11,600	3,260	NC
PCB154	554	76.2	NC	902	132	NC	191	55.2	NC
PCB155	58 U	58 U	NC	75.1	58.6 U	NC	59.7 U	57.5 U	NC
PCB156 & 157	2,240	370	NC	3,880	629	NC	1,670	465	NC
PCB158	1,700	261	NC	2,910	444	NC	1,090	303	NC
PCB159	118 U	118 U	NC	107 U	119 U	NC	121 U	117 U	NC
PCB160	4.25 U	4.25 U	NC	3.85 U	4.29 U	NC	4.37 U	4.21 U	NC
PCB161	56.1 U	56.1 U	NC	50.9 U	56.7 U	NC	57.8 U	55.6 U	NC
PCB162	77.3	39.9 U	NC	90.5	40.2 U	NC	45.4	39.5 U	NC
PCB164	831	128	NC	1,040	161	NC	448	125	NC
PCB165	55.7 U	55.7 U	NC	64.8	56.2 U	NC	57.3 U	55.1 U	NC
PCB167	987	154	NC	1,380	226	NC	528	143	NC
PCB169	37.4 U	37.4 U	NC	56.4 U	37.7 U	NC	38.4 U	37 U	NC
PCB170	3,800	670	NC	11,400	1,910	NC	1,460	368	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
PCB171 & 173	1,290	205	NC	3,560	539	NC	481	127	NC
PCB172	800	126	NC	2,150	319	NC	280	71	NC
PCB174	2,370	382	NC	2,330	390	NC	561	149	NC
PCB175	200	69.3 U	NC	370	70 U	NC	71.4 U	68.7 U	NC
PCB176	278	86.3 U	NC	226	87.1 U	NC	88.8 U	85.5 U	NC
PCB177	2,400	388	NC	3,000	480	NC	622	168	NC
PCB178	1,420	222	NC	2,870	448	NC	461	126	NC
PCB179	1,120	176	NC	1,500	235	NC	410	117	NC
PCB180 & 193	13,300	2,330	NC	36,900	6,210	NC	4,390	1,120	NC
PCB181	63.2 U	63.2 U	NC	117	63.8 U	NC	65 U	62.6 U	NC
PCB182	42.9 U	42.9 U	NC	50.6	43.3 U	NC	44.2 U	42.5 U	NC
PCB183 & 185	3,950	604	NC	9,810	1,470	NC	1,180	315	NC
PCB184	51.4 U	51.4 U	NC	46.6 U	51.9 U	NC	52.9 U	50.9 U	NC
PCB186	74.5 U	74.5 U	NC	67.5 U	75.2 U	NC	76.7 U	73.8 U	NC
PCB187	10,600	1,680	NC	17,000	2,750	NC	3,010	806	NC
PCB188	59.9 U	59.9 U	NC	54.3 U	60.5 U	NC	61.7 U	59.3 U	NC
PCB189	213	34.1 U	NC	640	100	NC	82.5	33.8 U	NC
PCB190	482	123	NC	1,390	307	NC	146	57.6	NC
PCB191	220	59.9 U	NC	673	100	NC	65.9	59.3 U	NC
PCB192	41.5 U	41.5 U	NC	37.6 U	41.9 U	NC	42.7 U	41.1 U	NC
PCB194	1,690	270	NC	6,360	1,050	NC	582	175 U	NC
PCB195	819	127	NC	3,090	455	NC	257	69.9 U	NC
PCB196	920	164	NC	3,000	539	NC	278	74	NC
PCB197 & 200	208	97.9 U	NC	411	98.9 U	NC	101 U	97 U	NC
PCB198 & 199	1,790	344	NC	3,710	707	NC	631	174	NC
PCB201	338	48.1	NC	678	98.3	NC	83.7	39 U	NC
PCB202	563	84.9	NC	1,230	182	NC	251	74.4 U	NC
PCB203	1,260	215	NC	3,890	618	NC	470	134	NC
PCB204	57.5 U	57.5 U	NC	52.1 U	58 U	NC	59.2 U	57 U	NC
PCB205	98.7	57.2 U	NC	362	57.8 U	NC	58.9 U	56.7 U	NC
PCB206	532	91	NC	1,360	217	NC	260	71.9	NC
PCB207	113 U	113 U	NC	235	114 U	NC	117 U	112 U	NC
PCB208	193	115 U	NC	296	116 U	NC	119 U	114 U	NC
PCB209	286	53	NC	397	81.2	NC	164	51.6 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-08			EPA1-SB06E-09			EPA1-SB06E-10		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627751.005	7627751.005	7627751.005	7627261.88	7627261.88	7627261.88	7627239.777	7627239.777	7627239.777
Y-coordinate	704513.7004	704513.7004	704513.7004	704853.8424	704853.8424	704853.8424	704870.1191	704870.1191	704870.1191
RiverMile	6.9	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11
Sample Time	14:40	14:40	14:40	15:49	15:49	15:49	16:10	16:10	16:10
Sample Mass (g)	217.45	165.25	382.7	212.8	154.51	367.31	450.65	349.44	800.09
Monochlorobiphenyl homologs	43.9 UT	43.9 UT	NC	39.7 UT	44.3 UT	NC	45.1 UT	43.5 UT	NC
Dichlorobiphenyl homologs	835 T	331 T	NC	490 T	292 T	NC	944 T	340 T	NC
Trichlorobiphenyl homologs	4,660 T	1,220 T	NC	3,320 T	973 T	NC	5,390 T	1,760 T	NC
Tetrachlorobiphenyl homologs	23,600 T	4,440 T	NC	20,300 T	3,990 T	NC	24,700 T	7,500 T	NC
Pentachlorobiphenyl homologs	56,100 T	9,230 T	NC	56,700 T	9,500 T	NC	47,500 T	14,100 T	NC
Hexachlorobiphenyl homologs	94,600 T	14,300 T	NC	137,000 T	21,200 T	NC	42,400 T	12,500 T	NC
Heptachlorobiphenyl homologs	42,600 T	7,140 T	NC	94,000 T	15,400 T	NC	13,300 T	3,660 T	NC
Octachlorobiphenyl homologs	7,690 T	1,330 T	NC	22,700 T	3,730 T	NC	2,630 T	638 T	NC
Nonachlorobiphenyl homologs	782 T	205 T	NC	1,890 T	332 T	NC	378 T	185 T	NC
Total PCB Congeners (RI Calc; ND=0)	230,000 JT	35,400 JT	146,000 JT	335,000 JT	52,600 JT	217,000 JT	136,000 JT	38,200 JT	93,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	231,000 JT	38,300 JT	148,000 JT	337,000 JT	55,600 JT	218,000 JT	137,000 JT	40,700 JT	95,200 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.632 JT	0.0962 JT	0.4 JT	0.802 JT	0.133 JT	0.521 JT	0.543 JT	0.154 JT	0.373 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.38 JT	3.85 JT	4.15 JT	4.54 JT	3.92 JT	4.28 JT	4.4 JT	3.87 JT	4.17 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	16 JT	6.53 JT	11.9 JT	20.2 JT	8.05 JT	15.1 JT	13.6 JT	7.68 JT	11 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.293 JT	0.189 JT	0.248 JT	0.313 JT	0.199 JT	0.265 JT	0.279 JT	0.199 JT	0.244 JT
% Lipids	7.29	1.36	NC	6.9	1.23	NC	9.57	2.49	NC

Notes:

	All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).
J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
PCB001	34.1 U	36.4 U	NC	35.7 U	34.1 U	NC	36.8 U	37.1 U	NC
PCB002	42.3 U	45.1 U	NC	44.3 U	42.3 U	NC	45.6 U	46 U	NC
PCB003	22.3 U	23.8 U	NC	23.3 U	22.3 U	NC	24 U	24.3 U	NC
PCB004	863	151	NC	233 J	69.1 U	NC	598	105	NC
PCB005	42.3 U	45.1 U	NC	44.3 U	42.3 U	NC	45.6 U	46 U	NC
PCB006	39.5 U	42.2 U	NC	46.9	39.5 U	NC	184	43.1 U	NC
PCB007	53.6 U	57.3 U	NC	56.2 U	53.6 U	NC	57.8 U	58.4 U	NC
PCB008	151	70.4	NC	180	59.4	NC	502	95	NC
PCB009	25.9 U	27.7 U	NC	27.1 U	25.9 U	NC	37.1	28.2 U	NC
PCB010	89.5	30.1 U	NC	29.5 U	28.2 U	NC	30.4 U	30.7 U	NC
PCB011	222 U	237 U	NC	232 U	222 U	NC	333	242 U	NC
PCB012 & 013	37.7 U	40.3 U	NC	39.5 U	37.7 U	NC	40.7 U	41.1 U	NC
PCB014	41.4 U	44.2 U	NC	43.3 U	41.4 U	NC	44.6 U	45 U	NC
PCB015	62.3 U	66.5 U	NC	65.2 U	62.3 U	NC	178	67.8 U	NC
PCB016	163	56.7	NC	52.4	50 U	NC	420	83.7	NC
PCB017	588	131	NC	58.6	121	NC	1,400	233	NC
PCB018 & 030	495	139	NC	2.86	153 U	NC	1,950	316 U	NC
PCB019	2,100	365	NC	45.7	93.3	NC	679	110	NC
PCB020 & 028	1,600	353	NC	2,210	597	NC	14,200	2,480	NC
PCB021 & 033	269	219 U	NC	429	205 U	NC	809	223 U	NC
PCB022	338	84.3	NC	456	127	NC	1,490	261	NC
PCB023	50 U	53.4 U	NC	52.4 U	50 U	NC	53.9 U	54.5 U	NC
PCB024	30.5 U	32.5 U	NC	31.9 U	30.5 U	NC	32.8 U	33.2 U	NC
PCB025	131	47.6 U	NC	151	44.5 U	NC	340	59.9	NC
PCB026 & 029	262	102 U	NC	325	95.5 U	NC	943	163	NC
PCB027	166	46.1 U	NC	45.2	43.2 U	NC	374	58.4	NC
PCB031	941	223	NC	1,130	309	NC	3,400	587	NC
PCB032	248	64.1	NC	20.5	75.2	NC	1,740	290	NC
PCB034	35.9 U	38.3 U	NC	37.6 U	35.9 U	NC	38.7 U	39.1 U	NC
PCB035	37.3 U	39.8 U	NC	39 U	37.3 U	NC	40.2 U	40.6 U	NC
PCB036	39.5 U	42.2 U	NC	41.4 U	39.5 U	NC	42.6 U	43.1 U	NC
PCB037	182	41.6	NC	147	53	NC	660	107	NC
PCB038	28.6 U	30.6 U	NC	30 U	28.6 U	NC	44	31.2 U	NC
PCB039	35.9 U	38.3 U	NC	37.6 U	35.9 U	NC	55.2	39.1 U	NC
PCB040 & 041 & 071	807	155	NC	1,580	418	NC	21,000	3,780	NC
PCB042	616	116	NC	1,150	306	NC	16,000	2,800	NC
PCB043 & 073	99.7	53.4 U	NC	125	50 U	NC	1,610	270	NC
PCB044 & 047 & 065	5,520	983	NC	6,840	1,690	NC	79,700	13,200	NC
PCB045 & 051	842	150	NC	712	181	NC	4,380	741	NC
PCB046	114 U	121 U	NC	119 U	114 U	NC	978	171	NC
PCB048	317	61.9	NC	591	156	NC	7,420	1,280	NC
PCB049 & 069	2,970	524	NC	4,580	1,110	NC	58,600	9,550	NC
PCB050 & 053	561	97.4	NC	638	164	NC	3,730	623	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
PCB052	4,380	789	NC	7,110	1,750	NC	95,300	15,500	NC
PCB054	274	45.2	NC	75.7	32.3 U	NC	97.6	35.1 U	NC
PCB055	34.1 U	36.4 U	NC	35.7 U	34.1 U	NC	36.8 U	37.1 U	NC
PCB056	704	132	NC	1,150	277	NC	8,500	1,370	NC
PCB057	28.6 U	30.6 U	NC	30 U	28.6 U	NC	154	31.2 U	NC
PCB058	30.5 U	32.5 U	NC	31.9 U	30.5 U	NC	130	33.2 U	NC
PCB059 & 062 & 075	341 U	364 U	NC	411	341 U	NC	5,540	919	NC
PCB060	589	104	NC	1,260	303	NC	26,300	4,260	NC
PCB061 & 070 & 074 & 076	4,710	847	NC	7,320	1,780	NC	76,600	12,300	NC
PCB063	164	28.6 U	NC	351	81	NC	4,040	642	NC
PCB064	1,250	225	NC	2,260	561	NC	37,900	6,380	NC
PCB066	3,260	565	NC	6,640	1,630	NC	93,500	15,300	NC
PCB067	83.4	29.1 U	NC	119	28.9	NC	490	77.5	NC
PCB068	90.9 U	97.1 U	NC	104	90.9 U	NC	163	99 U	NC
PCB072	67.8	21.8 U	NC	127	29.7	NC	504	81.7	NC
PCB073	99.7 U	53.4 U	NC	52.4 U	50 U	NC	1,610	270	NC
PCB077	215	44.7 U	NC	263	62.4	NC	1,810	278	NC
PCB078	20.9 U	22.3 U	NC	21.9 U	20.9 U	NC	22.5 U	22.8 U	NC
PCB079	35.6	37.9 U	NC	67.6	35.5 U	NC	491	78.5	NC
PCB080	34.1 U	35.9 U	NC	35.2 U	33.6 U	NC	36.3 U	36.6 U	NC
PCB081	40.9 U	43.7 U	NC	43.1	40.9 U	NC	210	44.6 U	NC
PCB082	395	70.5	NC	898	212	NC	6,630	1,100	NC
PCB083	273	64.6 U	NC	595	118	NC	3,730	743	NC
PCB084	1,090	192	NC	1,640	395	NC	10,700	1,780	NC
PCB085 & 117 & 116	1,670	280	NC	3,470	801	NC	28,800	4,610	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,150	728 U	NC	7,870	1,850	NC	60,300	9,710	NC
PCB088 & 091	1,170	206	NC	2,070	487	NC	11,900	1,910	NC
PCB089	26.8	28.2 U	NC	57.8	26.4 U	NC	828	141	NC
PCB090 & 101 & 113	8,700	1,500	NC	17,100	3,990	NC	92,200	14,900	NC
PCB092	1,840	318	NC	3,490	812	NC	18,300	2,930	NC
PCB093 & 098 & 100 & 102	1,070	558 U	NC	1,100	523 U	NC	2,660	569 U	NC
PCB094	114 U	121 U	NC	119 U	114 U	NC	245	124 U	NC
PCB095	4,440	786	NC	7,590	1,820	NC	37,100	6,110	NC
PCB096	56.7	54.4 U	NC	79.8	50.9 U	NC	532	87.2	NC
PCB099	6,110	1,020	NC	10,900	2,650	NC	62,800	10,600	NC
PCB103	254	44.7 U	NC	324	75.8	NC	680	107	NC
PCB104	67.7 U	72.3 U	NC	71 U	67.7 U	NC	73 U	73.8 U	NC
PCB105	2,990	518	NC	6,770	1,550	NC	50,200	7,130	NC
PCB106	67.3 U	71.8 U	NC	70.5 U	67.3 U	NC	72.5 U	73.3 U	NC
PCB107 & 124	233	52.9 U	NC	435	97.5	NC	1,550	239	NC
PCB109	703	120	NC	1,400	340	NC	6,710	1,060	NC
PCB110 & 115	6,900	1,220	NC	12,700	2,980	NC	80,300	13,200	NC
PCB111	33.6 U	35.9 U	NC	38.7	33.6 U	NC	38.1	36.6 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
PCB112	50 U	53.4 U	NC	52.4 U	50 U	NC	53.9 U	54.5 U	NC
PCB114	225	59.7 U	NC	525	118	NC	3,740	552	NC
PCB118	10,700	1,850	NC	21,400	5,100	NC	106,000	15,800	NC
PCB120	114 U	121 U	NC	143	114 U	NC	190	124 U	NC
PCB121	31.4 U	33.5 U	NC	34.5	31.4 U	NC	33.8 U	34.2 U	NC
PCB122	53.2	44.2 U	NC	102	41.4 U	NC	273	68.9	NC
PCB123	237	56.3 U	NC	526	108	NC	2,460	424	NC
PCB126	61.4 U	65.5 U	NC	64.3 U	61.4 U	NC	142	66.8 U	NC
PCB127	39.1 U	41.7 U	NC	41 U	39.1 U	NC	94.7	42.6 U	NC
PCB128 & 166	1,910	293	NC	3,820	807	NC	8,590	1,140	NC
PCB129 & 138 & 163	20,400	3,030	NC	39,900	8,130	NC	65,400	8,830	NC
PCB130	781	113	NC	1,660	337	NC	3,440	504	NC
PCB131	81.8	41.3 U	NC	155	38.6 U	NC	412	63.1	NC
PCB132	2,330	359	NC	4,270	942	NC	9,070	1,420	NC
PCB133	477	69.8	NC	883	172	NC	936	140	NC
PCB134 & 143	404	243 U	NC	771	227 U	NC	1,950	289	NC
PCB135 & 151	5,340	793	NC	9,140	1,940	NC	14,900	2,410	NC
PCB136	1,160	180	NC	1,820	413	NC	3,830	622	NC
PCB137	783	141 U	NC	1,160	272	NC	3,300	535	NC
PCB139 & 140	297	58.3 U	NC	547	111	NC	1,270	193	NC
PCB141	2,720	407	NC	4,920	987	NC	10,800	1,550	NC
PCB142	38.6 U	41.3 U	NC	40.5 U	38.6 U	NC	41.7 U	42.1 U	NC
PCB144	532	79.6	NC	972	206	NC	1,960	313	NC
PCB145	42.7 U	45.6 U	NC	44.8 U	42.7 U	NC	46.1 U	46.5 U	NC
PCB146	4,330	631	NC	8,050	1,680	NC	9,850	1,490	NC
PCB147 & 149	9,040	1,370	NC	17,400	3,650	NC	24,200	3,750	NC
PCB148	78.8	72.8 U	NC	144	68.2 U	NC	79.1	74.3 U	NC
PCB150	49.1 U	52.4 U	NC	74.9	49.1 U	NC	52.9 U	53.5 U	NC
PCB152	53.2 U	56.8 U	NC	55.7 U	53.2 U	NC	61.4	57.9 U	NC
PCB153 & 168	25,000	3,630	NC	45,200	9,020	NC	53,000	7,870	NC
PCB154	534	78.2	NC	863	179	NC	705	111	NC
PCB155	55.9 U	59.7 U	NC	58.6 U	55.9 U	NC	60.3 U	60.9 U	NC
PCB156 & 157	1,940	315	NC	3,710	805	NC	7,580	1,130	NC
PCB158	1,640	242	NC	3,180	645	NC	5,930	785	NC
PCB159	114 U	121 U	NC	119 U	114 U	NC	123 U	124 U	NC
PCB160	4.09 U	4.37 U	NC	4.29 U	4.09 U	NC	4.41 U	4.46 U	NC
PCB161	54.1 U	57.8 U	NC	56.7 U	54.1 U	NC	58.3 U	58.9 U	NC
PCB162	62.9	41 U	NC	298	58	NC	207	41.8 U	NC
PCB164	838	130	NC	1,630	294	NC	3,320	467	NC
PCB165	53.6 U	57.3 U	NC	56.2 U	53.6 U	NC	57.8 U	58.4 U	NC
PCB167	774	126	NC	1,510	316	NC	2,100	317	NC
PCB169	36 U	38.4 U	NC	95.8 U	36 U	NC	66.1 U	39.2 U	NC
PCB170	4,010	715	NC	8,710	1,890	NC	6,410	935	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
PCB171 & 173	1,340	206	NC	2,760	597	NC	2,380	330	NC
PCB172	755	119	NC	1,730	362	NC	1,410	195	NC
PCB174	2,150	354	NC	4,850	1,010	NC	4,740	628	NC
PCB175	163	71.4 U	NC	361	71.3	NC	318	72.8 U	NC
PCB176	234	88.8 U	NC	600	114	NC	528	90.6 U	NC
PCB177	1,870	303	NC	4,570	939	NC	3,840	527	NC
PCB178	1,230	185	NC	2,590	500	NC	2,060	297	NC
PCB179	1,100	181	NC	2,330	469	NC	2,770	412	NC
PCB180 & 193	12,700	2,270	NC	25,500	5,550	NC	17,000	2,470	NC
PCB181	60.9 U	65 U	NC	115	60.9 U	NC	108 U	66.3 U	NC
PCB182	41.4 U	44.2 U	NC	65.4	41.4 U	NC	44.6 U	45 U	NC
PCB183 & 185	3,740	578	NC	7,960	1,620	NC	6,520	876	NC
PCB184	49.5 U	52.9 U	NC	51.9 U	49.5 U	NC	53.4 U	54 U	NC
PCB186	71.8 U	76.7 U	NC	75.2 U	71.8 U	NC	77.5 U	78.2 U	NC
PCB187	7,920	1,250	NC	15,700	3,130	NC	12,700	1,740	NC
PCB188	57.7 U	61.7 U	NC	60.5 U	57.7 U	NC	62.3 U	62.9 U	NC
PCB189	193	35.1 U	NC	412	78.9	NC	291	43.4	NC
PCB190	554	122	NC	1,390	349	NC	1,080	187	NC
PCB191	223	61.7 U	NC	440	88	NC	309	62.9 U	NC
PCB192	40 U	42.7 U	NC	41.9 U	40 U	NC	43.1 U	43.6 U	NC
PCB194	1,640	287	NC	3,980	920	NC	1,900	325	NC
PCB195	806	137	NC	1,830	394	NC	941	156	NC
PCB196	951	173	NC	2,130	469	NC	1,140	186	NC
PCB197 & 200	181	101 U	NC	453	94.6	NC	304	103 U	NC
PCB198 & 199	1,610	327	NC	4,230	973	NC	2,730	451	NC
PCB201	238	40.5 U	NC	555	113	NC	346	55	NC
PCB202	526	88.2	NC	1,270	259	NC	811	127	NC
PCB203	1,430	256	NC	3,200	714	NC	1,990	329	NC
PCB204	55.4 U	59.2 U	NC	58 U	55.4 U	NC	59.8 U	60.3 U	NC
PCB205	97.1	58.9 U	NC	233	55.1 U	NC	128	60 U	NC
PCB206	547	104	NC	1,430	341	NC	687	128	NC
PCB207	109 U	117 U	NC	202	109 U	NC	118 U	119 U	NC
PCB208	201	119 U	NC	510	112	NC	248	121 U	NC
PCB209	271	62	NC	661	169	NC	230	54.7 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-11			EPA1-SB06W-01			EPA1-SB06W-04		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7627178.523	7627178.523	7627178.523	7623259.739	7623259.739	7623259.739	7625793.951	7625793.951	7625793.951
Y-coordinate	704970.9609	704970.9609	704970.9609	706089.1385	706089.1385	706089.1385	704637.7654	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.1	6.1	6.1	6.6	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11	6-Oct-11
Sample Time	16:15	16:15	16:15	8:20	8:20	8:20	16:45	16:45	16:45
Sample Mass (g)	110.7	93.53	204.23	332.83	284.8	617.63	116.8	96.49	213.29
Monochlorobiphenyl homologs	42.3 UT	45.1 UT	NC	44.3 UT	42.3 UT	NC	45.6 UT	46 UT	NC
Dichlorobiphenyl homologs	1,280 T	423 T	NC	637 JT	283 T	NC	1,850 T	406 T	NC
Trichlorobiphenyl homologs	7,550 T	1,730 T	NC	5,140 T	1,740 T	NC	28,500 T	4,770 T	NC
Tetrachlorobiphenyl homologs	27,800 T	5,270 T	NC	43,600 T	10,900 T	NC	547,000 T	90,000 T	NC
Pentachlorobiphenyl homologs	53,500 T	9,170 T	NC	101,000 T	24,100 T	NC	589,000 T	93,700 T	NC
Hexachlorobiphenyl homologs	81,600 T	12,300 T	NC	152,000 T	31,300 T	NC	233,000 T	34,200 T	NC
Heptachlorobiphenyl homologs	38,300 T	6,520 T	NC	80,100 T	16,900 T	NC	62,500 T	8,870 T	NC
Octachlorobiphenyl homologs	7,480 T	1,370 T	NC	17,900 T	3,960 T	NC	10,300 T	1,710 T	NC
Nonachlorobiphenyl homologs	803 T	222 T	NC	2,140 T	508 T	NC	994 T	248 T	NC
Total PCB Congeners (RI Calc; ND=0)	217,000 JT	34,100 JT	134,000 JT	403,000 JT	87,800 JT	258,000 JT	1,470,000 JT	232,000 JT	912,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	219,000 JT	37,100 JT	136,000 JT	404,000 JT	89,900 JT	259,000 JT	1,470,000 JT	234,000 JT	913,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.533 JT	0.0843 JT	0.328 JT	1.08 JT	0.249 JT	0.699 JT	19.6 JT	0.79 JT	11.1 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.15 JT	3.95 JT	4.06 JT	5.74 JT	3.86 JT	4.87 JT	20.6 JT	4.72 JT	13.4 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	16.5 JT	6.7 JT	12 JT	22.1 JT	8.56 JT	15.8 JT	133 JT	20.5 JT	82.1 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.271 JT	0.192 JT	0.235 JT	0.385 JT	0.211 JT	0.305 JT	1.86 JT	0.334 JT	1.17 JT
% Lipids	7.04	1.04	NC	8.59	2.13	NC	9.44	1.12	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
PCB001	36.4 U	36.4 U	NC	35.4 U	21.4 U	NC	37.1 U	35 U	NC
PCB002	45.1 U	45.1 U	NC	43.9 U	26.6 U	NC	46 U	43.5 U	NC
PCB003	23.8 U	23.8 U	NC	23.1 U	14.4	NC	24.3 U	22.9 U	NC
PCB004	340	73.8 U	NC	236	45.6	NC	379	75.7	NC
PCB005	45.1 U	45.1 U	NC	43.9 U	26.6 U	NC	46 U	43.5 U	NC
PCB006	44	42.2 U	NC	41 U	24.9 U	NC	52.4	40.7 U	NC
PCB007	57.3 U	57.3 U	NC	55.7 U	33.7 U	NC	58.4 U	55.1 U	NC
PCB008	171	47.6 U	NC	147	50.3	NC	208	45.8 U	NC
PCB009	27.7 U	27.7 U	NC	26.9 U	16.3 U	NC	28.2 U	26.6 U	NC
PCB010	30.1 U	30.1 U	NC	29.2 U	17.7 U	NC	30.7 U	29 U	NC
PCB011	408	237 U	NC	230 U	139 U	NC	242 U	228 U	NC
PCB012 & 013	40.3 U	40.3 U	NC	39.2 U	23.7 U	NC	41.1 U	38.8 U	NC
PCB014	44.2 U	44.2 U	NC	42.9 U	26 U	NC	45 U	42.5 U	NC
PCB015	84.8	66.5 U	NC	68.2	39.1 U	NC	87.6	64 U	NC
PCB016	145	53.4 U	NC	158	49.6	NC	185	51.4 U	NC
PCB017	412	86.9	NC	452	92.7	NC	559	91.5	NC
PCB018 & 030	442	99.2 U	NC	472	106 U	NC	679	90.8	NC
PCB019	598	110	NC	466	78.6	NC	736	118	NC
PCB020 & 028	1,660	357	NC	1,850	323	NC	2,210	277	NC
PCB021 & 033	261	219 U	NC	250	129 U	NC	377	211 U	NC
PCB022	329	71.1	NC	396	75.8	NC	413	53	NC
PCB023	53.4 U	53.4 U	NC	51.9 U	31.4 U	NC	54.5 U	51.4 U	NC
PCB024	32.5 U	32.5 U	NC	31.6 U	19.1 U	NC	33.2 U	31.3 U	NC
PCB025	111	47.6 U	NC	140	28 U	NC	174	45.8 U	NC
PCB026 & 029	258	102 U	NC	309	60 U	NC	444	98.1 U	NC
PCB027	77.3	46.1 U	NC	81.2	27.1 U	NC	122	44.4 U	NC
PCB031	936	204	NC	1,080	203	NC	1,320	143	NC
PCB032	192	45.1	NC	208	46.8 U	NC	321	53.4	NC
PCB034	38.3 U	38.3 U	NC	37.3 U	22.6 U	NC	39.1 U	36.9 U	NC
PCB035	39.8 U	39.8 U	NC	38.7 U	23.4 U	NC	40.6 U	38.3 U	NC
PCB036	42.2 U	42.2 U	NC	41 U	24.9 U	NC	43.1 U	40.7 U	NC
PCB037	271	61.8	NC	189	34.9	NC	191	37.3	NC
PCB038	30.6 U	30.6 U	NC	29.7 U	18 U	NC	31.2 U	29.4 U	NC
PCB039	38.3 U	38.3 U	NC	37.3 U	22.6 U	NC	39.1 U	36.9 U	NC
PCB040 & 041 & 071	783	165	NC	913	138	NC	1,260	191	NC
PCB042	704	132	NC	892	122	NC	776	94.9	NC
PCB043 & 073	89.7	53.4 U	NC	3,610	31.4 U	NC	3,610	771	NC
PCB044 & 047 & 065	4,640	882	NC	6,250	858	NC	5,490	1,260	NC
PCB045 & 051	672	130	NC	957	148	NC	682	208	NC
PCB046	121 U	121 U	NC	118 U	71.4 U	NC	124 U	117 U	NC
PCB048	314	64.7	NC	357	57.4	NC	428	53.9	NC
PCB049 & 069	2,920	554	NC	3,940	560	NC	3,930	629	NC
PCB050 & 053	414	81.1	NC	547	81.9	NC	515	126	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
PCB052	4,760	930	NC	5,840	892	NC	5,790	866	NC
PCB054	95.1	34.5 U	NC	113	20.3 U	NC	116	33.2 U	NC
PCB055	36.4 U	36.4 U	NC	35.4 U	21.4 U	NC	37.1 U	35 U	NC
PCB056	668	134	NC	937	124	NC	799	86.3	NC
PCB057	30.6 U	30.6 U	NC	29.7 U	18 U	NC	31.2 U	29.4 U	NC
PCB058	32.5 U	32.5 U	NC	31.6 U	19.1 U	NC	33.2 U	31.3 U	NC
PCB059 & 062 & 075	364 U	364 U	NC	355	214 U	NC	371 U	350 U	NC
PCB060	669	130	NC	782	96.6	NC	894	93.8	NC
PCB061 & 070 & 074 & 076	5,370	1,050	NC	6,160	759	NC	6,290	803	NC
PCB063	210	40.6	NC	212	24.6	NC	272	35.1	NC
PCB064	1,310	262	NC	1,700	238	NC	1,760	188	NC
PCB066	3,920	777	NC	4,190	524	NC	5,010	641	NC
PCB067	78	29.1 U	NC	99.7	17.1 U	NC	85.2	28 U	NC
PCB068	97.1 U	97.1 U	NC	111	57.1 U	NC	123	93.5 U	NC
PCB072	71	21.8 U	NC	94.3	12.9 U	NC	112	21 U	NC
PCB073	89.7	53.4 U	NC	51.9 U	31.4 U	NC	54.5 U	51.4 U	NC
PCB077	294	59.3	NC	275	38.3	NC	246	43 U	NC
PCB078	22.3 U	22.3 U	NC	21.7 U	13.1 U	NC	22.8 U	21.5 U	NC
PCB079	60.6	37.9 U	NC	46.7	22.3 U	NC	127	36.4 U	NC
PCB080	35.9 U	35.9 U	NC	34.9 U	21.1 U	NC	36.6 U	34.6 U	NC
PCB081	43.7 U	43.7 U	NC	42.5 U	25.7 U	NC	44.6 U	42.1 U	NC
PCB082	428	86	NC	653	77.9	NC	424	82.7	NC
PCB083	313	64.6 U	NC	581	71.3	NC	317	62.1 U	NC
PCB084	1,200	241	NC	1,820	233	NC	1,040	216	NC
PCB085 & 117 & 116	1,780	350	NC	2,280	297	NC	2,300	399	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,340	866	NC	6,410	819	NC	4,520	940	NC
PCB088 & 091	1,200	228	NC	1,970	255	NC	1,180	245	NC
PCB089	29	28.2 U	NC	36.4	16.6 U	NC	38.2	27.1 U	NC
PCB090 & 101 & 113	9,220	1,820	NC	13,900	1,880	NC	9,790	2,480	NC
PCB092	1,870	358	NC	2,920	372	NC	2,170	518	NC
PCB093 & 098 & 100 & 102	586	558 U	NC	892	329 U	NC	721	537 U	NC
PCB094	121 U	121 U	NC	118 U	71.4 U	NC	124 U	117 U	NC
PCB095	4,730	947	NC	7,560	995	NC	4,820	1,110	NC
PCB096	54.4 U	54.4 U	NC	65.8	32 U	NC	58.7	52.3 U	NC
PCB099	6,530	1,280	NC	7,670	978	NC	7,880	1,690	NC
PCB103	204	44.7 U	NC	373	48.9	NC	207	67.8	NC
PCB104	72.3 U	72.3 U	NC	70.3 U	42.6 U	NC	73.8 U	69.6 U	NC
PCB105	3,520	690	NC	4,150	508	NC	4,050	723	NC
PCB106	71.8 U	71.8 U	NC	69.8 U	42.3 U	NC	73.3 U	69.2 U	NC
PCB107 & 124	266	52.9 U	NC	380	43.2	NC	275	50.9 U	NC
PCB109	859	150	NC	1,080	125	NC	1,090	221	NC
PCB110 & 115	7,190	1,470	NC	11,100	1,430	NC	8,060	1,610	NC
PCB111	35.9 U	35.9 U	NC	34.9 U	21.1 U	NC	36.6 U	34.6 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
PCB112	53.4 U	53.4 U	NC	51.9 U	31.4 U	NC	54.5 U	51.4 U	NC
PCB114	274	59.7 U	NC	287	43.1	NC	330	57.5 U	NC
PCB118	11,600	2,320	NC	14,000	1,720	NC	14,000	3,050	NC
PCB120	121 U	121 U	NC	125	71.4 U	NC	141	117 U	NC
PCB121	33.5 U	33.5 U	NC	32.5 U	19.7 U	NC	34.2 U	32.2 U	NC
PCB122	56.7	44.2 U	NC	82.2	42.3 U	NC	55.7	42.5 U	NC
PCB123	261	60	NC	326	33.3	NC	322	54.2 U	NC
PCB126	65.5 U	65.5 U	NC	63.7 U	38.6 U	NC	66.8 U	63.1 U	NC
PCB127	41.7 U	41.7 U	NC	40.6 U	24.6 U	NC	42.6 U	40.2 U	NC
PCB128 & 166	2,050	410	NC	2,940	313	NC	2,770	704	NC
PCB129 & 138 & 163	21,700	4,240	NC	33,300	3,640	NC	30,300	9,040	NC
PCB130	815	159	NC	1,650	166	NC	1,140	249	NC
PCB131	88.1	41.3 U	NC	175	24.3 U	NC	101	39.7 U	NC
PCB132	2,290	475	NC	4,840	512	NC	2,440	557	NC
PCB133	460	91.8	NC	750	72.6	NC	1,100	185	NC
PCB134 & 143	381	243 U	NC	879	143 U	NC	475	234 U	NC
PCB135 & 151	4,790	1,020	NC	9,790	1,080	NC	6,590	1,860	NC
PCB136	1,010	221	NC	2,200	259	NC	1,230	342	NC
PCB137	887	174	NC	1,220	119	NC	1,240	236	NC
PCB139 & 140	286	58.3 U	NC	460	44.9	NC	415	86.5	NC
PCB141	2,200	498	NC	4,440	438	NC	3,320	1,250	NC
PCB142	41.3 U	41.3 U	NC	40.1 U	24.3 U	NC	42.1 U	39.7 U	NC
PCB144	447	93	NC	1,060	102	NC	595	151	NC
PCB145	45.6 U	45.6 U	NC	44.3 U	26.9 U	NC	46.5 U	43.9 U	NC
PCB146	4,540	899	NC	7,830	783	NC	9,090	1,840	NC
PCB147 & 149	8,140	1,680	NC	20,000	2,130	NC	9,800	1,970	NC
PCB148	72.8 U	72.8 U	NC	123	42.9 U	NC	112	70.1 U	NC
PCB150	52.4 U	52.4 U	NC	81.8	30.9 U	NC	46.5 U	50.5 U	NC
PCB152	56.8 U	56.8 U	NC	55.2 U	33.4 U	NC	57.9 U	54.7 U	NC
PCB153 & 168	25,300	5,050	NC	39,100	3,910	NC	38,500	11,900	NC
PCB154	375	79.3	NC	726	75.7	NC	674	175	NC
PCB155	59.7 U	59.7 U	NC	58 U	35.1 U	NC	60.9 U	57.5 U	NC
PCB156 & 157	1,990	376	NC	2,490	292	NC	2,570	857	NC
PCB158	1,500	306	NC	2,380	255	NC	2,310	777	NC
PCB159	121 U	121 U	NC	118 U	71.4 U	NC	124 U	117 U	NC
PCB160	4.37 U	4.37 U	NC	4.25 U	2.57 U	NC	4.46 U	4.21 U	NC
PCB161	57.8 U	57.8 U	NC	56.1 U	34 U	NC	58.9 U	55.6 U	NC
PCB162	57.7	41 U	NC	70.7	24.1 U	NC	83.5	39.5 U	NC
PCB164	787	148	NC	1,470	155	NC	1,070	301	NC
PCB165	57.3 U	57.3 U	NC	55.7 U	33.7 U	NC	69.8	55.1 U	NC
PCB167	860	159	NC	1,170	138	NC	1,030	307	NC
PCB169	98.8 J	38.4 U	NC	80.9	24.4	NC	98 J	37 U	NC
PCB170	4,780	768	NC	5,320	645	NC	5,120	2,990	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
PCB171 & 173	1,430	248	NC	1,940	212	NC	1,780	919	NC
PCB172	928	158	NC	1,270	130	NC	1,190	489	NC
PCB174	2,180	402	NC	4,630	530	NC	2,370	608	NC
PCB175	161	71.4 U	NC	313	42 U	NC	239	80.1	NC
PCB176	215	88.8 U	NC	617	66.4	NC	285	85.5 U	NC
PCB177	2,140	391	NC	4,110	482	NC	2,840	672	NC
PCB178	1,340	253	NC	2,200	229	NC	2,700	607	NC
PCB179	1,090	211	NC	2,490	272	NC	1,270	379	NC
PCB180 & 193	16,200	2,670	NC	18,100	2,130	NC	25,400	8,890	NC
PCB181	65 U	65 U	NC	63.2 U	38.3 U	NC	78.7	62.6 U	NC
PCB182	44.2 U	44.2 U	NC	66.2	26 U	NC	81.2	62.6 U	NC
PCB183 & 185	4,410	778	NC	6,200	661	NC	5,820	42.5	NC
PCB184	52.9 U	52.9 U	NC	51.4 U	31.1 U	NC	54 U	50.9 U	NC
PCB186	76.7 U	76.7 U	NC	74.5 U	45.1 U	NC	78.2 U	73.8 U	NC
PCB187	11,300	2,140	NC	17,900	1,880	NC	22,200	3,920	NC
PCB188	61.7 U	61.7 U	NC	59.9 U	36.3 U	NC	124	59.3 U	NC
PCB189	207	36	NC	260	36.4	NC	287	133	NC
PCB190	735	154	NC	667	106	NC	669	354	NC
PCB191	241	61.7 U	NC	306	36.3 U	NC	324	145	NC
PCB192	42.7 U	42.7 U	NC	41.5 U	25.1 U	NC	43.6 U	41.1 U	NC
PCB194	2,410	395	NC	2,210	245	NC	6,080	1,410	NC
PCB195	1,060	171	NC	992	113	NC	1,820	584	NC
PCB196	1,250	213	NC	1,290	154	NC	3,460	740	NC
PCB197 & 200	222	101 U	NC	355	59.3 U	NC	391	97 U	NC
PCB198 & 199	2,540	483	NC	2,790	369	NC	7,460	1,000	NC
PCB201	289	56.8	NC	445	47.1	NC	1,040	120	NC
PCB202	781	143	NC	836	103	NC	1,630	246	NC
PCB203	2,260	362	NC	1,950	223	NC	3,200	855	NC
PCB204	59.2 U	59.2 U	NC	57.5 U	34.8 U	NC	60.3 U	57 U	NC
PCB205	129	58.9 U	NC	133	34.7 U	NC	204	72.9	NC
PCB206	1,060	194	NC	747	92.7	NC	6,770	344	NC
PCB207	171	117 U	NC	115	68.6 U	NC	1,170	112 U	NC
PCB208	335	119 U	NC	283	69.8 U	NC	2,740	114 U	NC
PCB209	533	120	NC	296	53.4	NC	3,000	93.6	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04			EPA1-SB07E-05			EPA1-SB07E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7630501.76	7631760.293	7631760.293	7631760.293	7631349.5	7631349.5	7631349.5
Y-coordinate	702199.7767	702199.7767	702199.7767	701577.0326	701577.0326	701577.0326	701694.068	701694.068	701694.068
RiverMile	7.6	7.6	7.6	7.9	7.9	7.9	7.9	7.9	7.9
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11
Sample Time	16:15	16:15	16:15	15:30	15:30	15:30	15:42	15:42	15:42
Sample Mass (g)	154.94	133.25	288.19	115.92	84.2	200.12	259.45	215.09	474.54
Monochlorobiphenyl homologs	45.1 UT	45.1 UT	NC	43.9 UT	25.1 T	NC	46 UT	43.5 UT	NC
Dichlorobiphenyl homologs	1,080 T	237 UT	NC	615 T	214 T	NC	877 T	293 T	NC
Trichlorobiphenyl homologs	5,760 T	1,290 T	NC	6,120 T	1,100 T	NC	7,800 T	1,160 T	NC
Tetrachlorobiphenyl homologs	28,500 T	5,850 T	NC	38,500 T	4,930 T	NC	38,600 T	6,490 T	NC
Pentachlorobiphenyl homologs	56,700 T	11,600 T	NC	78,800 T	10,300 T	NC	64,000 T	14,000 T	NC
Hexachlorobiphenyl homologs	81,300 JT	16,500 T	NC	139,000 T	14,700 T	NC	117,000 JT	33,200 T	NC
Heptachlorobiphenyl homologs	47,500 T	8,430 T	NC	66,500 T	7,480 T	NC	72,800 T	20,400 T	NC
Octachlorobiphenyl homologs	10,900 T	1,900 T	NC	11,000 T	1,300 T	NC	25,300 T	5,080 T	NC
Nonachlorobiphenyl homologs	1,570 T	312 T	NC	1,150 T	162 T	NC	10,700 T	457 T	NC
Total PCB Congeners (RI Calc; ND=0)	233,000 JT	43,600 JT	145,000 JT	342,000 JT	38,800 JT	214,000 JT	339,000 JT	78,800 JT	221,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	234,000 JT	46,300 JT	147,000 JT	342,000 JT	40,300 JT	215,000 JT	340,000 JT	81,200 JT	223,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	3.55 JT	0.115 JT	1.96 JT	3.13 JT	0.819 JT	2.16 JT	3.64 JT	0.152 JT	2.06 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	6.84 JT	3.97 JT	5.51 JT	6.33 JT	2.75 JT	4.82 JT	6.99 JT	3.87 JT	5.58 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	21 JT	8.58 JT	15.2 JT	20 JT	5.26 JT	13.8 JT	18.8 JT	6.55 JT	13.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.303 JT	0.2 JT	0.255 JT	0.315 JT	0.122 JT	0.234 JT	0.321 JT	0.197 JT	0.265 JT
% Lipids	8.92	1.72	NC	6.47	0.83	NC	12	1.57	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
PCB001	63.9	22.5 U	NC	20.8 U	22.5 U	NC	80	33.5 U	NC
PCB002	26.8 U	27.9 U	NC	25.8 U	27.9 U	NC	43.9 U	41.5 U	NC
PCB003	19.7	15.6	NC	18.4	14.7 U	NC	23.1 U	21.9 U	NC
PCB004	1,100	183	NC	359	47.1	NC	1,150	256	NC
PCB005	26.8 U	27.9 U	NC	25.8 U	27.9 U	NC	43.9 U	41.5 U	NC
PCB006	175	28.3	NC	117	26.1 U	NC	142	38.8 U	NC
PCB007	34 U	35.4 U	NC	32.8 U	35.4 U	NC	55.7 U	52.7 U	NC
PCB008	530	90.9	NC	496	84.4	NC	478	129	NC
PCB009	60.3	17.1 U	NC	28.9	17.1 U	NC	50.3	25.4 U	NC
PCB010	77.7	18.6 U	NC	20.2	18.6 U	NC	72.2	27.7 U	NC
PCB011	447	159	NC	234	149	NC	230	218 U	NC
PCB012 & 013	23.9 U	24.9 U	NC	23.1 U	24.9 U	NC	39.2 U	37.1 U	NC
PCB014	26.3 U	27.3 U	NC	25.3 U	27.3 U	NC	42.9 U	40.6 U	NC
PCB015	410	67.6	NC	139	41.1 U	NC	221	61.2 U	NC
PCB016	1,000	158	NC	653	96.1	NC	557	143	NC
PCB017	1,580	249	NC	1,530	206	NC	795	195	NC
PCB018 & 030	4,160	656	NC	2,010	261	NC	1,550	377	NC
PCB019	1,410	232	NC	494	66.2	NC	743	161	NC
PCB020 & 028	13,600	2,210	NC	6,590	893	NC	2,900	636	NC
PCB021 & 033	829	162	NC	1,870	289	NC	435	201 U	NC
PCB022	2,650	452	NC	1,570	221	NC	740	162	NC
PCB023	31.7 U	33 U	NC	30.6 U	33 U	NC	51.9 U	49.1 U	NC
PCB024	155	24.4	NC	34.4	20.1 U	NC	32.1	29.9 U	NC
PCB025	325	53.3	NC	420	53.9	NC	197	44	NC
PCB026 & 029	1,560	255	NC	1,000	135	NC	497	109	NC
PCB027	608	92.9	NC	225	31.6	NC	149	42.4 U	NC
PCB031	5,050	840	NC	4,260	579	NC	1,790	401	NC
PCB032	3,100	494	NC	918	122 U	NC	515	124	NC
PCB034	34.1	23.7 U	NC	40.4	23.7 U	NC	37.3 U	35.3 U	NC
PCB035	23.7 U	24.6 U	NC	22.8 U	24.6 U	NC	38.7 U	36.6 U	NC
PCB036	25.1 U	26.1 U	NC	24.2 U	26.1 U	NC	41 U	38.8 U	NC
PCB037	728	122	NC	537	92.8	NC	296	71	NC
PCB038	18.2 U	18.9 U	NC	17.5 U	18.9 U	NC	29.7 U	28.1 U	NC
PCB039	22.8 U	23.7 U	NC	21.9 U	23.7 U	NC	37.3 U	35.3 U	NC
PCB040 & 041 & 071	2,790	468	NC	3,670	496	NC	1,160	250	NC
PCB042	2,080	342	NC	2,630	332	NC	1,100	229	NC
PCB043 & 073	223	38.4	NC	244	33 U	NC	137	49.1 U	NC
PCB044 & 047 & 065	12,300	1,960	NC	11,500	1,460	NC	7,070	1,460	NC
PCB045 & 051	1,760	268	NC	1,660	208	NC	977	212	NC
PCB046	299	75 U	NC	356	75 U	NC	147	112 U	NC
PCB048	1,110	187	NC	1,480	190	NC	466	99	NC
PCB049 & 069	8,970	1,370	NC	8,190	1,010	NC	4,740	970	NC
PCB050 & 053	963	145	NC	1,110	136	NC	451	100	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
PCB052	17,900	2,710	NC	12,900	1,640	NC	7,360	1,530	NC
PCB054	116	21.3 U	NC	85.8	21.3 U	NC	86.1	31.7 U	NC
PCB055	21.6 U	22.5 U	NC	20.8 U	22.5 U	NC	35.4 U	33.5 U	NC
PCB056	1,900	327	NC	2,980	395	NC	1,210	248	NC
PCB057	34.4	18.9 U	NC	48.5	18.9 U	NC	29.7 U	28.1 U	NC
PCB058	24.6	20.1 U	NC	43.9	20.1 U	NC	31.6 U	29.9 U	NC
PCB059 & 062 & 075	800	225 U	NC	795	225 U	NC	418	335 U	NC
PCB060	2,110	337	NC	1,770	230	NC	931	187	NC
PCB061 & 070 & 074 & 076	15,500	2,460	NC	16,200	2,020	NC	8,160	1,640	NC
PCB063	477	77.1	NC	486	57.6	NC	271	54.4	NC
PCB064	4,660	729	NC	4,560	579	NC	2,130	445	NC
PCB066	10,900	1,700	NC	10,400	1,300	NC	5,170	1,030	NC
PCB067	194	32.9	NC	257	32.3	NC	132	26.8 U	NC
PCB068	107	60 U	NC	130	60 U	NC	100	89.3 U	NC
PCB072	138	22.8	NC	159	19.8	NC	114	22.3	NC
PCB073	31.7 U	33 U	NC	30.6 U	33 U	NC	51.9 U	0 U	NC
PCB077	507	77.8	NC	539	67.6	NC	327	66.3	NC
PCB078	13.3 U	13.8 U	NC	12.8 U	13.8 U	NC	21.7 U	20.5 U	NC
PCB079	112	26.8	NC	136	23.4 U	NC	93.5	34.8 U	NC
PCB080	21.3 U	22.2 U	NC	20.6 U	22.2 U	NC	34.9 U	33 U	NC
PCB081	54.9	27 U	NC	49.1	27 U	NC	42.5 U	40.2 U	NC
PCB082	1,230	200	NC	1,590	203	NC	761	149	NC
PCB083	948	225	NC	1,220	159	NC	561	113	NC
PCB084	3,210	547	NC	3,710	475	NC	2,140	440	NC
PCB085 & 117 & 116	6,710	976	NC	4,260	487	NC	2,970	528	NC
PCB086 & 087 & 097 & 108 & 119 & 125	14,200	2,260	NC	11,900	1,450	NC	7,940	1,530	NC
PCB088 & 091	3,170	517	NC	3,420	408	NC	2,130	422	NC
PCB089	89.5	17.4 U	NC	118	17.4 U	NC	42.2	25.9 U	NC
PCB090 & 101 & 113	30,000	4,630	NC	23,100	2,830	NC	16,100	3,080	NC
PCB092	6,370	994	NC	4,700	561	NC	3,330	640	NC
PCB093 & 098 & 100 & 102	1,190	345 U	NC	1,030	345 U	NC	914	513 U	NC
PCB094	91.2	75 U	NC	106	75 U	NC	118 U	112 U	NC
PCB095	14,300	2,340	NC	13,100	1,660	NC	7,900	1,600	NC
PCB096	114	33.6 U	NC	111	33.6 U	NC	71.9	50 U	NC
PCB099	19,300	3,150	NC	12,700	1,490	NC	9,890	1,860	NC
PCB103	414	66.2	NC	410	48.1	NC	372	72.1	NC
PCB104	43 U	44.7 U	NC	41.4 U	44.7 U	NC	70.3 U	66.5 U	NC
PCB105	12,800	1,830	NC	7,200	863	NC	5,640	1,060	NC
PCB106	42.7 U	44.4 U	NC	41.1 U	44.4 U	NC	69.8 U	66.1 U	NC
PCB107 & 124	815	120	NC	623	71.5	NC	464	89.7	NC
PCB109	2,460	323	NC	1,440	164	NC	1,380	251	NC
PCB110 & 115	23,700	3,760	NC	18,800	2,410	NC	13,100	2,620	NC
PCB111	33	22.2 U	NC	33.3	22.2 U	NC	34.9 U	33 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
PCB112	31.7 U	33 U	NC	30.6 U	33 U	NC	51.9 U	49.1 U	NC
PCB114	821	123	NC	474	59.2	NC	477	84.9	NC
PCB118	39,200	5,910	NC	21,900	2,730	NC	20,000	3,860	NC
PCB120	134	75 U	NC	122	75 U	NC	118 U	112 U	NC
PCB121	31.6	20.7 U	NC	23.9	20.7 U	NC	32.5 U	30.8 U	NC
PCB122	179	27.3 U	NC	151	27.3 U	NC	119	40.6 U	NC
PCB123	533	96.7	NC	432	56.2	NC	410	81.2	NC
PCB126	73.1	40.5 U	NC	47.4	40.5 U	NC	63.7 U	60.3 U	NC
PCB127	66.9	25.8 U	NC	23.9 U	25.8 U	NC	40.6 U	38.4 U	NC
PCB128 & 166	6,620	870	NC	3,840	397	NC	2,940	522	NC
PCB129 & 138 & 163	55,400	7,810	NC	38,000	4,030	NC	31,800	5,340	NC
PCB130	2,250	323	NC	1,990	204	NC	1,560	266	NC
PCB131	215	36.5	NC	265	27.3	NC	171	37.9 U	NC
PCB132	5,450	940	NC	7,210	809	NC	4,520	808	NC
PCB133	930	144	NC	804	82.7	NC	713	116	NC
PCB134 & 143	1,010	167	NC	1,090	150 U	NC	815	223 U	NC
PCB135 & 151	11,200	1,800	NC	10,900	1,240	NC	8,720	1,510	NC
PCB136	2,530	421	NC	2,600	293	NC	2,090	372	NC
PCB137	2,830	398	NC	1,590	174	NC	1,550	268	NC
PCB139 & 140	890	140	NC	627	65.6	NC	482	79	NC
PCB141	6,470	844	NC	5,460	560	NC	4,120	717	NC
PCB142	24.5 U	25.5 U	NC	23.6 U	25.5 U	NC	40.1 U	37.9 U	NC
PCB144	1,140	187	NC	1,350	148	NC	942	154	NC
PCB145	27.1 U	28.2 U	NC	26.1 U	28.2 U	NC	44.3 U	42 U	NC
PCB146	9,350	1,460	NC	7,880	810	NC	7,210	1,200	NC
PCB147 & 149	17,900	3,100	NC	24,000	2,700	NC	15,900	2,850	NC
PCB148	109	45 U	NC	129	45 U	NC	116	67 U	NC
PCB150	67.9	32.4 U	NC	84.1	32.4 U	NC	72	48.2 U	NC
PCB152	38.6	35.1 U	NC	32.5 U	35.1 U	NC	55.2 U	52.2 U	NC
PCB153 & 168	51,000	7,730	NC	40,000	4,200	NC	36,300	5,930	NC
PCB154	866	134	NC	772	80.9	NC	716	114	NC
PCB155	35.5 U	36.9 U	NC	34.2 U	36.9 U	NC	58 U	54.9 U	NC
PCB156 & 157	5,510	816	NC	3,060	355	NC	3,560	612	NC
PCB158	4,730	643	NC	3,010	316	NC	2,350	410	NC
PCB159	72.1 U	75 U	NC	69.4 U	75 U	NC	118 U	112 U	NC
PCB160	2.6 U	2.7 U	NC	2.5 U	2.7 U	NC	4.25 U	4.02 U	NC
PCB161	34.3 U	35.7 U	NC	33.1 U	35.7 U	NC	56.1 U	53.1 U	NC
PCB162	130	26.3	NC	93	25.4 U	NC	91.2	37.7 U	NC
PCB164	2,040	280	NC	1,700	166	NC	1,490	244	NC
PCB165	35.3	35.4 U	NC	32.8 U	35.4 U	NC	55.7 U	52.7 U	NC
PCB167	2,050	290	NC	1,310	148	NC	1,470	245	NC
PCB169	97.1 J	23.8 U	NC	86.4 J	23.8 U	NC	43.4 J	35.4 U	NC
PCB170	7,230	896	NC	4,430	571	NC	5,240	951	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
PCB171 & 173	2,360	334	NC	1,990	214	NC	1,580	281	NC
PCB172	1,460	200	NC	1,190	126	NC	1,140	184	NC
PCB174	3,590	508	NC	4,350	479	NC	3,830	706	NC
PCB175	285	44.1 U	NC	299	44.1 U	NC	278	65.6 U	NC
PCB176	432	70.4	NC	610	68.2	NC	440	84.3	NC
PCB177	3,480	488	NC	3,990	430	NC	3,320	590	NC
PCB178	2,130	311	NC	1,930	208	NC	1,860	306	NC
PCB179	1,920	333	NC	2,230	255	NC	1,860	341	NC
PCB180 & 193	21,700	2,860	NC	14,800	1,830	NC	17,400	3,010	NC
PCB181	127	40.2 U	NC	60.9	40.2 U	NC	71.1	59.8 U	NC
PCB182	63.7	27.3 U	NC	50.2	27.3 U	NC	45.8	40.6 U	NC
PCB183 & 185	6,390	922	NC	5,680	611	NC	5,060	881	NC
PCB184	31.4 U	32.7 U	NC	30.3 U	32.7 U	NC	51.4 U	48.7 U	NC
PCB186	45.6 U	47.4 U	NC	43.9 U	47.4 U	NC	74.5 U	70.5 U	NC
PCB187	15,600	2,230	NC	13,000	1,400	NC	13,500	2,220	NC
PCB188	36.6 U	38.1 U	NC	35.3 U	38.1 U	NC	59.9 U	56.7 U	NC
PCB189	322	47.4	NC	238	26.2	NC	297	44.9	NC
PCB190	719	115	NC	403	77.4	NC	693	161	NC
PCB191	365	43.2	NC	266	38.1 U	NC	289	56.7 U	NC
PCB192	25.4 U	26.4 U	NC	24.4 U	26.4 U	NC	41.5 U	39.3 U	NC
PCB194	2,860	388	NC	2,090	251	NC	2,510	392	NC
PCB195	1,250	178	NC	973	115	NC	1,080	171	NC
PCB196	1,560	229	NC	1,120	152	NC	1,430	235	NC
PCB197 & 200	297	62.3 U	NC	339	62.3 U	NC	318	92.7 U	NC
PCB198 & 199	2,990	480	NC	2,210	342	NC	2,830	548	NC
PCB201	384	64.5	NC	430	46.7	NC	429	70.3	NC
PCB202	1,030	151	NC	891	98.4	NC	815	138	NC
PCB203	2,520	342	NC	1,780	226	NC	1,950	328	NC
PCB204	35.2 U	36.6 U	NC	33.9 U	36.6 U	NC	57.5 U	54.4 U	NC
PCB205	159	36.4 U	NC	137	36.4 U	NC	130	54.2 U	NC
PCB206	996	183	NC	891	124	NC	827	152	NC
PCB207	151	72 U	NC	145	72 U	NC	134	107 U	NC
PCB208	329	73.3 U	NC	379	73.3 U	NC	276	109 U	NC
PCB209	442	89.1	NC	481	82	NC	374	77.8	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-01			EPA1-SB08W-05			EPA1-SB08W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7630437.208	7630437.208	7630437.208	7633514.593	7633514.593	7633514.593	7630400.532	7630400.532	7630400.532
Y-coordinate	699436.5357	699436.5357	699436.5357	696771.2835	696771.2835	696771.2835	699535.9693	699535.9693	699535.9693
RiverMile	8	8	8	8.8	8.8	8.8	8	8	8
Sample Date	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	11:33	11:33	11:33	10:00	10:00	10:00	16:50	16:50	16:50
Sample Mass (g)	381.98	293.4	675.38	106.82	88.4	195.22	205.65	131.12	336.77
Monochlorobiphenyl homologs	83.6 T	26.9 T	NC	28.8 T	27.9 UT	NC	91.6 T	41.5 UT	NC
Dichlorobiphenyl homologs	2,800 T	547 T	NC	1,390 T	332 T	NC	2,340 T	571 T	NC
Trichlorobiphenyl homologs	36,800 T	6,030 T	NC	22,200 T	3,030 T	NC	11,200 T	2,610 T	NC
Tetrachlorobiphenyl homologs	86,000 T	13,500 T	NC	82,400 T	10,400 T	NC	42,800 T	8,930 T	NC
Pentachlorobiphenyl homologs	182,000 T	28,400 T	NC	133,000 T	16,500 T	NC	97,000 T	19,000 T	NC
Hexachlorobiphenyl homologs	191,000 JT	28,700 T	NC	158,000 JT	17,000 T	NC	130,000 JT	22,100 T	NC
Heptachlorobiphenyl homologs	68,200 T	9,450 T	NC	55,500 T	6,410 T	NC	57,000 T	9,920 T	NC
Octachlorobiphenyl homologs	13,100 T	1,880 T	NC	9,970 T	1,280 T	NC	11,500 T	1,960 T	NC
Nonachlorobiphenyl homologs	1,480 T	256 T	NC	1,420 T	197 T	NC	1,240 T	260 T	NC
Total PCB Congeners (RI Calc; ND=0)	582,000 JT	87,900 JT	367,000 JT	464,000 JT	54,000 JT	278,000 JT	353,000 JT	63,500 JT	240,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	582,000 JT	88,900 JT	368,000 JT	464,000 JT	55,300 JT	279,000 JT	353,000 JT	65,500 JT	241,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	12.1 JT	0.281 JT	6.98 JT	8.44 JT	0.134 JT	4.68 JT	2.29 JT	0.186 JT	1.47 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	12.1 JT	2.67 JT	8.02 JT	8.44 JT	2.52 JT	5.76 JT	5.48 JT	3.74 JT	4.8 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	40.6 JT	7.62 JT	26.3 JT	38 JT	6.92 JT	23.9 JT	22.9 JT	8.58 JT	17.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.755 JT	0.162 JT	0.497 JT	0.493 JT	0.137 JT	0.332 JT	0.364 JT	0.198 JT	0.299 JT
% Lipids	11.3	1.7	NC	6.85	0.81	NC	7.89	1.37	NC

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
PCB001	20.6 U	21.4 U	NC	21 U	22.5 U	NC	37.5 U	36.1 U	NC
PCB002	25.6 U	26.6 U	NC	26.1 U	27.9 U	NC	46.5 U	44.7 U	NC
PCB003	13.5 U	14 U	NC	15	14.7 U	NC	24.5 U	23.6 U	NC
PCB004	232	54.2	NC	281	62	NC	164	73.1 U	NC
PCB005	25.6 U	26.6 U	NC	26.1 U	27.9 U	NC	46.5 U	44.7 U	NC
PCB006	34.4	24.9 U	NC	30.7	26.1 U	NC	43.5 U	41.8 U	NC
PCB007	32.5 U	33.7 U	NC	33.1 U	35.4 U	NC	59 U	56.7 U	NC
PCB008	108	57.6	NC	134	48.3	NC	130	75.5	NC
PCB009	15.7 U	16.3 U	NC	16 U	17.1 U	NC	28.5 U	27.4 U	NC
PCB010	17.1 U	17.7 U	NC	17.4 U	18.6 U	NC	31 U	29.8 U	NC
PCB011	199	139 U	NC	286	154	NC	244 U	235 U	NC
PCB012 & 013	22.8 U	23.7 U	NC	23.3 U	24.9 U	NC	41.5 U	39.9 U	NC
PCB014	25 U	26 U	NC	25.5 U	27.3 U	NC	45.5 U	43.8 U	NC
PCB015	83.5	39.1 U	NC	66.5	41.1 U	NC	68.5 U	65.9 U	NC
PCB016	124	53.1	NC	113	41.6	NC	117	56.3	NC
PCB017	557	134	NC	494	123	NC	408	91.5	NC
PCB018 & 030	407	119 U	NC	431	118 U	NC	365	117	NC
PCB019	320	62.2	NC	657	137	NC	342	51.7	NC
PCB020 & 028	1,230	290	NC	1,220	309	NC	1,450	323	NC
PCB021 & 033	277	129 U	NC	214	135 U	NC	225 U	217 U	NC
PCB022	257	70.6	NC	195	67.9	NC	293	85.6	NC
PCB023	30.3 U	31.4 U	NC	30.8 U	33 U	NC	55 U	52.9 U	NC
PCB024	18.4 U	19.1 U	NC	18.8 U	20.1 U	NC	33.5 U	32.2 U	NC
PCB025	111	28 U	NC	110	29.4 U	NC	126	47.1 U	NC
PCB026 & 029	254	60 U	NC	214	63 U	NC	281	101 U	NC
PCB027	106	27.1 U	NC	107	28.5 U	NC	80.9	45.7 U	NC
PCB031	742	191	NC	621	182	NC	882	213	NC
PCB032	209	53.9	NC	247	63.1 U	NC	183	52.8	NC
PCB034	21.7 U	22.6 U	NC	22.1 U	23.7 U	NC	39.5 U	38 U	NC
PCB035	22.6 U	23.4 U	NC	23 U	24.6 U	NC	41 U	39.4 U	NC
PCB036	23.9 U	24.9 U	NC	24.4 U	26.1 U	NC	43.5 U	41.8 U	NC
PCB037	171	36	NC	201	60.3	NC	146	39.4	NC
PCB038	17.3 U	18 U	NC	17.7 U	18.9 U	NC	31.5 U	30.3 U	NC
PCB039	21.7 U	22.6 U	NC	22.1 U	23.7 U	NC	39.5 U	38 U	NC
PCB040 & 041 & 071	1,150	261	NC	990	230	NC	696	119	NC
PCB042	649	130	NC	460	105	NC	597	93.5	NC
PCB043 & 073	60.5	31.4 U	NC	87	33 U	NC	85.4	52.9 U	NC
PCB044 & 047 & 065	6,270	1,250	NC	4,880	1,050	NC	4,380	608	NC
PCB045 & 051	543	110	NC	848	180	NC	584	88.6	NC
PCB046	86	71.4 U	NC	98.4	75 U	NC	125 U	120 U	NC
PCB048	411	94.3	NC	305	74.5	NC	264	47.2	NC
PCB049 & 069	4,420	849	NC	3,270	700	NC	2,820	375	NC
PCB050 & 053	468	92.5	NC	1,380	285	NC	397	63.5 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
PCB052	11,100	2,380	NC	6,380	1,400	NC	4,430	600	NC
PCB054	65.4	20.3 U	NC	189	39.4	NC	76.4	34.1 U	NC
PCB055	20.6 U	21.4 U	NC	21 U	22.5 U	NC	37.5 U	36.1 U	NC
PCB056	691	149	NC	352	91.7	NC	707	99.4	NC
PCB057	18.5	18 U	NC	19.4	18.9 U	NC	31.5 U	30.3 U	NC
PCB058	18.4 U	19.1 U	NC	18.8 U	20.1 U	NC	33.5 U	32.2 U	NC
PCB059 & 062 & 075	232	214 U	NC	210 U	225 U	NC	375 U	361 U	NC
PCB060	1,010	188	NC	476	108	NC	554	77.2	NC
PCB061 & 070 & 074 & 076	11,700	2,340	NC	3,950	868	NC	4,830	637	NC
PCB063	332	59.2	NC	189	39	NC	168	28.4 U	NC
PCB064	1,790	366	NC	923	206	NC	1,180	170	NC
PCB066	7,010	1,280	NC	3,490	755	NC	3,280	424	NC
PCB067	64.8	17.1 U	NC	76.9	18 U	NC	73.9	28.8 U	NC
PCB068	75.3	57.1 U	NC	118	60 U	NC	100 U	96.2 U	NC
PCB072	70.8	14.1	NC	85.7	18.3	NC	77.9	21.6 U	NC
PCB073	30.3 U	31.4 U	NC	30.8 U	33 U	NC	55 U	52.9 U	NC
PCB077	179	31.8	NC	176	40.6	NC	204	44.2 U	NC
PCB078	12.7 U	13.1 U	NC	12.9 U	13.8 U	NC	23 U	22.1 U	NC
PCB079	180	36.4	NC	51.8	23.4 U	NC	48.1	37.5 U	NC
PCB080	20.4 U	21.1 U	NC	20.7 U	22.2 U	NC	37 U	35.6 U	NC
PCB081	52.6	25.7 U	NC	25.2 U	27 U	NC	45 U	43.3 U	NC
PCB082	1,160	239	NC	302	66.7	NC	452	57.7	NC
PCB083	1,200	235	NC	555	93.7	NC	388	63.9 U	NC
PCB084	2,720	577	NC	1,160	249	NC	1,200	159	NC
PCB085 & 117 & 116	8,580	1,500	NC	1,890	367	NC	1,700	201	NC
PCB086 & 087 & 097 & 108 & 119 & 125	15,800	3,140	NC	5,150	1,090	NC	4,690	721 U	NC
PCB088 & 091	2,510	507	NC	1,460	300	NC	1,280	158	NC
PCB089	81.9	20.4	NC	44.2	17.4 U	NC	29 U	27.9 U	NC
PCB090 & 101 & 113	29,600	5,770	NC	20,400	4,150	NC	10,700	1,280	NC
PCB092	6,030	1,140	NC	3,300	661	NC	2,220	263	NC
PCB093 & 098 & 100 & 102	834	329 U	NC	1,120	345 U	NC	619	553 U	NC
PCB094	68.8 U	71.4 U	NC	138	75 U	NC	125 U	120 U	NC
PCB095	12,400	2,400	NC	8,560	1,780	NC	5,340	662	NC
PCB096	104	32 U	NC	174	36.3	NC	56 U	53.8 U	NC
PCB099	25,400	4,470	NC	7,960	1,640	NC	6,480	730	NC
PCB103	314	53.9	NC	430	83.9	NC	318	44.2 U	NC
PCB104	41 U	42.6 U	NC	41.8 U	44.7 U	NC	74.5 U	71.6 U	NC
PCB105	22,100	4,060	NC	3,850	770	NC	3,180	387	NC
PCB106	40.7 U	42.3 U	NC	41.5 U	44.4 U	NC	74 U	71.2 U	NC
PCB107 & 124	1,040	193	NC	255	53.8	NC	294	52.4 U	NC
PCB109	4,190	685	NC	1,210	235	NC	912	104	NC
PCB110 & 115	23,000	4,850	NC	9,640	2,060	NC	7,830	968	NC
PCB111	29.9	21.1 U	NC	99.7	22.2 U	NC	37 U	35.6 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
PCB112	30.3 U	31.4 U	NC	30.8 U	33 U	NC	55 U	52.9 U	NC
PCB114	1,970	336	NC	338	67.6	NC	223	59.1 U	NC
PCB118	74,900	12,700	NC	18,000	3,650	NC	12,200	1,370	NC
PCB120	109	71.4 U	NC	186	75 U	NC	125 U	120 U	NC
PCB121	28.2	19.7 U	NC	57.7	20.7 U	NC	34.5 U	33.2 U	NC
PCB122	213	36.7	NC	35.2	27.3 U	NC	68.5	43.8 U	NC
PCB123	1,060	190	NC	248	63.3	NC	261	55.8 U	NC
PCB126	55.9	38.6 U	NC	39.3	40.5 U	NC	67.5 U	64.9 U	NC
PCB127	180	31.7	NC	49.6	25.8 U	NC	43 U	41.3 U	NC
PCB128 & 166	10,000	1,510	NC	4,070	713	NC	2,160	224	NC
PCB129 & 138 & 163	81,500	11,700	NC	93,900	15,800	NC	29,600	3,130	NC
PCB130	3,510	495	NC	2,900	477	NC	1,460	156	NC
PCB131	298	51.2	NC	229	41.7	NC	118	40.9 U	NC
PCB132	5,310	913	NC	9,220	1,670	NC	3,510	386	NC
PCB133	1,250	169	NC	2,820	454	NC	1,290	124	NC
PCB134 & 143	1,290	218	NC	1,760	304	NC	603	240 U	NC
PCB135 & 151	10,900	1,640	NC	23,600	4,210	NC	8,690	934	NC
PCB136	2,710	464	NC	6,690	1,220	NC	1,610	177	NC
PCB137	6,880	906	NC	1,490	273	NC	1,050	139 U	NC
PCB139 & 140	1,330	195	NC	398	70.3	NC	344	57.7 U	NC
PCB141	7,980	1,220	NC	15,500	2,610	NC	4,140	438	NC
PCB142	23.4 U	24.3 U	NC	23.8 U	25.5 U	NC	42.5 U	40.9 U	NC
PCB144	1,400	209	NC	3,340	594	NC	840	88.7	NC
PCB145	32 U	26.9 U	NC	26.4 U	28.2 U	NC	47 U	45.2 U	NC
PCB146	13,400	1,830	NC	26,400	4,280	NC	11,400	1,110	NC
PCB147 & 149	16,300	2,480	NC	31,000	5,520	NC	16,400	1,730	NC
PCB148	90.8	42.9 U	NC	214	45 U	NC	197	72.1 U	NC
PCB150	58.4	30.9 U	NC	80.1	32.4 U	NC	84.5	51.9 U	NC
PCB152	42.7	33.4 U	NC	49.2	35.1 U	NC	58.5 U	56.3 U	NC
PCB153 & 168	78,800	10,600	NC	123,000	20,700	NC	36,700	3,690	NC
PCB154	823	111	NC	1,210	198	NC	994	98.5	NC
PCB155	33.9 U	35.1 U	NC	34.5 U	36.9 U	NC	61.5 U	59.1 U	NC
PCB156 & 157	13,400	2,030	NC	7,090	1,440	NC	2,270	257	NC
PCB158	7,880	1,140	NC	6,320	1,070	NC	2,030	208	NC
PCB159	68.8 U	71.4 U	NC	70.1 U	137	NC	125 U	120 U	NC
PCB160	2.48 U	2.57 U	NC	2.52 U	2.7 U	NC	4.5 U	4.33 U	NC
PCB161	32.8 U	34 U	NC	33.4 U	35.7 U	NC	59.5 U	57.2 U	NC
PCB162	330	46.8	NC	129 J	40	NC	54.6	40.6 U	NC
PCB164	2,130	354	NC	3,870	649	NC	1,370	145	NC
PCB165	49.5	33.7 U	NC	138	35.4 U	NC	59 U	56.7 U	NC
PCB167	4,070	609	NC	3,030	571	NC	996	111	NC
PCB169	160	22.6 U	NC	790 J	56.2 U	NC	84.8 J	38.1 U	NC
PCB170	10,600	1,790	NC	27,800	6,190	NC	5,540	651	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
PCB171 & 173	3,690	540	NC	9,270	1,740	NC	1,850	201	NC
PCB172	2,130	300	NC	6,530	1,210	NC	1,700	174	NC
PCB174	3,720	572	NC	17,500	3,270	NC	6,650	711	NC
PCB175	393	60	NC	1,630	280	NC	405	70.7 U	NC
PCB176	378	54.4	NC	1,720	309	NC	725	88 U	NC
PCB177	4,090	617	NC	20,700	3,810	NC	5,380	577	NC
PCB178	2,530	369	NC	7,960	1,420	NC	3,430	348	NC
PCB179	1,610	247	NC	7,740	1,520	NC	2,240	250	NC
PCB180 & 193	32,600	5,160	NC	94,500	21,200	NC	24,200	2,750	NC
PCB181	199	38.3 U	NC	185	40.2 U	NC	67 U	64.4 U	NC
PCB182	63.5	26 U	NC	200	36.6	NC	222	43.8 U	NC
PCB183 & 185	9,130	1,310	NC	29,000	5,230	NC	7,670	790	NC
PCB184	30 U	31.1 U	NC	30.6 U	32.7 U	NC	54.5 U	52.4 U	NC
PCB186	43.5 U	45.1 U	NC	44.3 U	47.4 U	NC	79 U	76 U	NC
PCB187	17,600	2,610	NC	68,100	11,900	NC	27,900	2,830	NC
PCB188	39.8	36.3 U	NC	113	38.1 U	NC	69.1	61.1 U	NC
PCB189	625	91.1	NC	1,810	320	NC	301	34.8 U	NC
PCB190	1,140	244	NC	3,680	834	NC	669	106	NC
PCB191	644	91.2	NC	2,010	363	NC	356	61.1 U	NC
PCB192	24.2 U	25.1 U	NC	24.7 U	26.4 U	NC	44 U	42.3 U	NC
PCB194	4,150	625	NC	18,300	3,670	NC	5,420	562	NC
PCB195	1,830	282	NC	8,140	1,570	NC	1,820	186	NC
PCB196	1,940	340	NC	8,620	2,060	NC	2,770	330	NC
PCB197 & 200	338	59.3 U	NC	1,650	304	NC	934	99.8 U	NC
PCB198 & 199	2,680	555	NC	12,600	3,100	NC	7,340	932	NC
PCB201	489	75.4	NC	3,020	522	NC	1,400	143	NC
PCB202	957	142	NC	2,900	554	NC	2,370	240	NC
PCB203	2,580	420	NC	8,880	1,880	NC	4,530	490	NC
PCB204	33.6 U	34.8 U	NC	34.2 U	36.6 U	NC	60.9 U	58.6 U	NC
PCB205	255	39.9	NC	1,010	188	NC	258	58.3 U	NC
PCB206	961	156	NC	3,080	609	NC	2,590	299	NC
PCB207	178	68.6 U	NC	622	121	NC	482	115 U	NC
PCB208	242	69.8 U	NC	639	127	NC	848	118 U	NC
PCB209	251	53.1	NC	302	71.8	NC	259	53.1 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB09E-05			EPA1-SB10E-04			EPA1-SB10E-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7639620.343	7639620.343	7639620.343	7641543.945	7641543.945	7641543.945	7640465.853	7640465.853	7640465.853
Y-coordinate	694926.9917	694926.9917	694926.9917	692043.6338	692043.6338	692043.6338	693421.9495	693421.9495	693421.9495
RiverMile	9.9	9.9	9.9	10.5	10.5	10.5	10.2	10.2	10.2
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11
Sample Time	14:13	14:13	14:13	12:57	12:57	12:57	13:50	13:50	13:50
Sample Mass (g)	197.46	141.64	339.1	142.25	110.29	252.54	48.64	40.99	89.63
Monochlorobiphenyl homologs	25.6 UT	26.6 UT	NC	25.5 T	27.9 UT	NC	46.5 UT	44.7 UT	NC
Dichlorobiphenyl homologs	673 T	230 T	NC	815 T	316 T	NC	502 T	312 T	NC
Trichlorobiphenyl homologs	4,800 T	1,110 T	NC	4,860 T	1,180 T	NC	4,860 T	1,300 T	NC
Tetrachlorobiphenyl homologs	48,700 T	9,880 T	NC	28,900 T	6,460 T	NC	25,800 T	3,860 T	NC
Pentachlorobiphenyl homologs	236,000 T	43,400 T	NC	86,700 T	17,800 T	NC	60,700 T	7,420 T	NC
Hexachlorobiphenyl homologs	272,000 T	39,000 T	NC	369,000 JT	63,200 T	NC	128,000 JT	13,500 T	NC
Heptachlorobiphenyl homologs	91,200 T	14,100 T	NC	300,000 T	59,700 T	NC	89,400 T	9,630 T	NC
Octachlorobiphenyl homologs	15,200 T	2,510 T	NC	65,100 T	13,800 T	NC	26,800 T	2,960 T	NC
Nonachlorobiphenyl homologs	1,380 T	225 T	NC	4,340 T	857 T	NC	3,920 T	416 T	NC
Total PCB Congeners (RI Calc; ND=0)	670,000 JT	109,000 JT	436,000 JT	861,000 JT	162,000 JT	556,000 JT	339,000 JT	36,400 JT	201,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	670,000 JT	111,000 JT	436,000 JT	861,000 JT	163,000 JT	556,000 JT	340,000 JT	39,500 JT	203,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	14 T	0.604 JT	8.39 JT	28.7 JT	0.211 JT	16.2 JT	3.15 JT	0.0638 JT	1.74 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	14 T	2.88 JT	9.33 JT	28.7 JT	3.08 JT	17.5 JT	6.53 JT	3.89 JT	5.32 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	24.5 T	5.59 JT	16.6 JT	16.1 JT	5.71 JT	11.6 JT	16.6 JT	6.62 JT	12 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.922 T	0.207 JT	0.623 JT	0.432 JT	0.148 JT	0.308 JT	0.302 JT	0.187 JT	0.249 JT
% Lipids	5.39	1.07	NC	8.72	1.57	NC	7.2	0.88	NC

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
PCB001	35.7 U	36.4 U	NC	143 U	75 U	NC	35.7 U	36.4 U	NC
PCB002	44.3 U	45.1 U	NC	177 U	93 U	NC	44.3 U	45.1 U	NC
PCB003	23.3 U	23.8 U	NC	93.3 U	49 U	NC	23.3 U	23.8 U	NC
PCB004	563	73.8	NC	394	152 U	NC	210	73.8 U	NC
PCB005	44.3 U	45.1 U	NC	177 U	93 U	NC	44.3 U	45.1 U	NC
PCB006	57	42.2 U	NC	166 U	87 U	NC	41.4 U	42.2 U	NC
PCB007	56.2 U	57.3 U	NC	225 U	118 U	NC	56.2 U	57.3 U	NC
PCB008	232	153	NC	187 U	98 U	NC	136	79.2	NC
PCB009	27.1 U	27.7 U	NC	109 U	57 U	NC	27.1 U	27.7 U	NC
PCB010	29.5 U	30.1 U	NC	118 U	62 U	NC	29.5 U	30.1 U	NC
PCB011	610	324	NC	930 U	488 U	NC	264	237 U	NC
PCB012 & 013	39.5 U	40.3 U	NC	158 U	83 U	NC	39.5 U	40.3 U	NC
PCB014	43.3 U	44.2 U	NC	173 U	91 U	NC	43.3 U	44.2 U	NC
PCB015	179	127	NC	261 U	137 U	NC	112	80.4	NC
PCB016	243	121	NC	210 U	110 U	NC	111	65.9	NC
PCB017	1,910	576	NC	1,070	247	NC	276	103	NC
PCB018 & 030	925	343	NC	413	109	NC	312	135 U	NC
PCB019	3,090	840	NC	1,620	336	NC	331	93.4	NC
PCB020 & 028	2,650	1,010	NC	1,520	372	NC	1,060	439	NC
PCB021 & 033	740	333	NC	859 U	451 U	NC	258	219 U	NC
PCB022	522	232	NC	190 U	100 U	NC	211	116	NC
PCB023	52.4 U	53.4 U	NC	210 U	110 U	NC	52.4 U	53.4 U	NC
PCB024	31.9 U	32.5 U	NC	128 U	67 U	NC	31.9 U	32.5 U	NC
PCB025	340	104	NC	187 U	98 U	NC	61.6	47.6 U	NC
PCB026 & 029	489	166	NC	400 U	210 U	NC	154	102 U	NC
PCB027	456	124	NC	291	95 U	NC	55.9	46.1 U	NC
PCB031	1,460	587	NC	465	194 U	NC	548	257	NC
PCB032	960	293	NC	416	99.8 U	NC	148	65.1	NC
PCB034	37.6 U	38.3 U	NC	150 U	79 U	NC	37.6 U	38.3 U	NC
PCB035	39 U	36.4 U	NC	156 U	82 U	NC	39 U	39.8 U	NC
PCB036	41.4 U	42.2 U	NC	166 U	87 U	NC	41.4 U	42.2 U	NC
PCB037	347	163	NC	209	67 U	NC	173	96.7	NC
PCB038	30 U	23.8 U	NC	120 U	63 U	NC	30 U	30.6 U	NC
PCB039	37.6 U	30.6 U	NC	150 U	79 U	NC	37.6 U	38.3 U	NC
PCB040 & 041 & 071	2,570	796	NC	1,950	420	NC	422	149	NC
PCB042	988	298	NC	564	124	NC	232	78.1	NC
PCB043 & 073	324	110	NC	623	136 U	NC	52.4 U	53.4 U	NC
PCB044 & 047 & 065	21,400	6,370	NC	19,900	3,980	NC	2,610	700	NC
PCB045 & 051	4,500	1,330	NC	3,070	650	NC	274	84.6	NC
PCB046	321	45.1 U	NC	476 U	250 U	NC	119 U	121 U	NC
PCB048	553	183	NC	432	97.3	NC	156	55.5	NC
PCB049 & 069	10,900	3,270	NC	8,800	1,760	NC	1,620	424	NC
PCB050 & 053	5,060	1,460	NC	4,400	927	NC	257	73.2	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
PCB052	15,900	4,900	NC	17,100	3,460	NC	2,990	789	NC
PCB054	1,050	293	NC	665	136	NC	58.9	34.5 U	NC
PCB055	35.7 U	36.4 U	NC	143 U	75 U	NC	35.7 U	36.4 U	NC
PCB056	703	233	NC	321	93 U	NC	216	74.5	NC
PCB057	34.3	30.6 U	NC	120 U	63 U	NC	30 U	30.6 U	NC
PCB058	42.4	32.5 U	NC	128 U	67 U	NC	31.9 U	32.5 U	NC
PCB059 & 062 & 075	710	364 U	NC	1,430 U	750 U	NC	357 U	364 U	NC
PCB060	777	249	NC	472	103	NC	436	121	NC
PCB061 & 070 & 074 & 076	6,650	2,060	NC	6,740	1,370	NC	3,290	850	NC
PCB063	276	81.1	NC	401	78.9	NC	138	34.5	NC
PCB064	1,620	499	NC	781	250 U	NC	565	172	NC
PCB066	4,600	1,440	NC	5,800	1,180	NC	2,590	657	NC
PCB067	199	54.9	NC	217	60 U	NC	34	29.1 U	NC
PCB068	186	97.1 U	NC	634	200 U	NC	95.2 U	97.1 U	NC
PCB072	163	49.4	NC	250	48.7	NC	46.1	21.8 U	NC
PCB073	52.4 U	53.4 U	NC	210 U	110 U	NC	52.4 U	53.4 U	NC
PCB077	216	67.2	NC	246	92 U	NC	117	44.7 U	NC
PCB078	21.9 U	22.3 U	NC	87.6 U	46 U	NC	21.9 U	22.3 U	NC
PCB079	74.8	37.9 U	NC	156	78 U	NC	37.1 U	37.9 U	NC
PCB080	35.2 U	35.9 U	NC	141 U	74 U	NC	35.2 U	35.9 U	NC
PCB081	42.9 U	43.7 U	NC	171 U	90 U	NC	42.9 U	43.7 U	NC
PCB082	566	165	NC	813	127	NC	153	41.3 U	NC
PCB083	1,040	221	NC	2,020	422	NC	192	74.5	NC
PCB084	2,200	654	NC	3,770	776	NC	402	141 U	NC
PCB085 & 117 & 116	3,620	977	NC	5,400	1,100	NC	2,250	547	NC
PCB086 & 087 & 097 & 108 & 119 & 125	12,300	3,420	NC	23,700	4,710	NC	2,960	728 U	NC
PCB088 & 091	3,960	1,130	NC	6,720	1,360	NC	457	118	NC
PCB089	65.8	28.2 U	NC	124	58 U	NC	27.6 U	28.2 U	NC
PCB090 & 101 & 113	56,600	15,400	NC	141,000	27,500	NC	7,400	1,790	NC
PCB092	9,470	2,600	NC	18,100	3,650	NC	1,750	412	NC
PCB093 & 098 & 100 & 102	4,870	1,330	NC	5,010	1,150 U	NC	548 U	558 U	NC
PCB094	437	125	NC	779	250 U	NC	119 U	121 U	NC
PCB095	25,100	7,210	NC	56,100	11,300	NC	2,990	747	NC
PCB096	714	187	NC	762	154	NC	53.3 U	54.4 U	NC
PCB099	19,100	4,820	NC	32,500	6,320	NC	7,510	1,710	NC
PCB103	1,600	434	NC	2,430	466	NC	106	44.7 U	NC
PCB104	129	72.3 U	NC	284 U	149 U	NC	71 U	72.3 U	NC
PCB105	6,540	2,060	NC	9,750	2,050	NC	5,100	1,210	NC
PCB106	70.5 U	71.8 U	NC	282 U	148 U	NC	70.5 U	71.8 U	NC
PCB107 & 124	444	124	NC	933	190	NC	200	52.9 U	NC
PCB109	1,730	473	NC	3,980	764	NC	971	227	NC
PCB110 & 115	24,100	6,700	NC	50,200	10,300	NC	5,060	1,250	NC
PCB111	89.8	35.9 U	NC	297	74 U	NC	35.2 U	35.9 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
PCB112	52.4 U	53.4 U	NC	210 U	110 U	NC	52.4 U	53.4 U	NC
PCB114	569	158	NC	1,000	189	NC	450	93.7	NC
PCB118	36,700	10,400	NC	78,900	16,700	NC	18,600	4,270	NC
PCB120	298	121 U	NC	697	250 U	NC	119 U	121 U	NC
PCB121	192	52	NC	233	69 U	NC	32.9 U	33.5 U	NC
PCB122	94.2	44.2 U	NC	173 U	91 U	NC	43.3 U	71.8 U	NC
PCB123	391	132	NC	744	146	NC	315	79.1	NC
PCB126	86.7 J	65.5 U	NC	257 U	135 U	NC	64.3 U	65.5 U	NC
PCB127	83.4	41.7 U	NC	164 U	86 U	NC	41 U	41.7 U	NC
PCB128 & 166	14,600	4,050	NC	25,300	5,250	NC	3,490	824	NC
PCB129 & 138 & 163	133,000 J	79,600	NC	740,000	146,000	NC	39,800	8,810	NC
PCB130	5,720	1,540	NC	18,600	3,760	NC	812	181	NC
PCB131	515	148	NC	1,750	362	NC	40.5 U	41.3 U	NC
PCB132	20,400	5,830	NC	76,100	15,800	NC	1,170	274	NC
PCB133	4,660	1,200	NC	12,100	2,410	NC	752	164	NC
PCB134 & 143	4,480	1,180	NC	14,500	3,070	NC	266	243 U	NC
PCB135 & 151	90,900	21,600	NC	209,000	41,900	NC	6,290	1,440	NC
PCB136	20,200	4,900	NC	52,300	10,900	NC	854	200	NC
PCB137	2,740	553	NC	5,410	1,110	NC	1,400	263	NC
PCB139 & 140	1,190	298	NC	1,620	326	NC	463	106	NC
PCB141	57,800	16,500	NC	134,000	26,300	NC	3,830	871	NC
PCB142	40.5 U	41.3 U	NC	162 U	85 U	NC	40.5 U	41.3 U	NC
PCB144	9,980	2,380	NC	29,500	6,080	NC	425	93.3	NC
PCB145	44.8 U	45.6 U	NC	179 U	94 U	NC	44.8 U	45.6 U	NC
PCB146	52,000	13,300	NC	151,000	29,700	NC	7,460	1,660	NC
PCB147 & 149	69,500	18,400	NC	287,000	56,700	NC	4,910	1,130	NC
PCB148	380	90.3	NC	550	150 U	NC	71.4 U	72.8 U	NC
PCB150	268	60.7	NC	479	108 U	NC	51.4 U	52.4 U	NC
PCB152	299	71.7	NC	348	117 U	NC	55.7 U	56.8 U	NC
PCB153 & 168	184,000 J	105,000	NC	948,000	188,000	NC	48,500	11,100	NC
PCB154	3,180	706	NC	3,900	762	NC	553	123	NC
PCB155	93.9	59.7 U	NC	234 U	123 U	NC	58.6 U	59.7 U	NC
PCB156 & 157	22,700	6,430	NC	65,800	12,700	NC	4,210	965	NC
PCB158	25,700	6,920	NC	52,200	10,300	NC	3,310	735	NC
PCB159	521	121 U	NC	476 U	250 U	NC	119 U	121 U	NC
PCB160	4.29 U	4.37 U	NC	17.1 U	9 U	NC	4.29 U	4.37 U	NC
PCB161	56.7 U	57.8 U	NC	227 U	119 U	NC	56.7 U	57.8 U	NC
PCB162	375	189	NC	661	146	NC	92.6	41 U	NC
PCB164	11,400	3,280	NC	34,100	6,980	NC	1,090	266	NC
PCB165	274	69.2	NC	630	129	NC	56.2 U	57.3 U	NC
PCB167	7,520	1,990	NC	24,800	4,700	NC	1,430	308	NC
PCB169	990 J	322 J	NC	318 J	79.2 U	NC	109 J	38.4 U	NC
PCB170	125,000	35,600	NC	372,000	64,500	NC	11,300	2,510	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
PCB171 & 173	40,500	10,800	NC	97,900	18,400	NC	3,170	713	NC
PCB172	24,000	6,380	NC	70,500	12,600	NC	2,140	465	NC
PCB174	44,900	11,400	NC	224,000	43,100	NC	1,910	432	NC
PCB175	4,950	1,190	NC	17,200	3,230	NC	270	71.4 U	NC
PCB176	4,630	1,180	NC	21,700	4,370	NC	157	88.8 U	NC
PCB177	40,100	10,900	NC	203,000	38,600	NC	2,600	573	NC
PCB178	29,800	7,440	NC	81,900	15,500	NC	2,510	546	NC
PCB179	29,700	7,550	NC	93,200	18,300	NC	1,120	257	NC
PCB180 & 193	196,000 J	105,000	NC	1,150,000	217,000	NC	36,100	8,220	NC
PCB181	505	133	NC	1,480	264	NC	91.1	65 U	NC
PCB182	325	74.1	NC	173 U	91 U	NC	43.3 U	44.2 U	NC
PCB183 & 185	108,000	29,500	NC	312,000	57,600	NC	8,960	1,950	NC
PCB184	55.5	52.9 U	NC	208 U	109 U	NC	51.9 U	52.9 U	NC
PCB186	75.2 U	76.7 U	NC	301 U	158 U	NC	75.2 U	76.7 U	NC
PCB187	102,000 J	43,100	NC	602,000	122,000	NC	19,500	4,270	NC
PCB188	179	61.7 U	NC	639	127 U	NC	60.5 U	61.7 U	NC
PCB189	6,890	1,720	NC	17,600	3,210	NC	612	131	NC
PCB190	19,100	7,360	NC	60,200	12,700	NC	2,010	568	NC
PCB191	7,210	1,820	NC	19,600	3,470	NC	599	131	NC
PCB192	41.9 U	42.7 U	NC	168 U	88 U	NC	41.9 U	42.7 U	NC
PCB194	76,800	22,500	NC	168,000	28,900	NC	6,450	1,410	NC
PCB195	32,000	9,180	NC	76,700	13,400	NC	2,800	611	NC
PCB196	40,800	11,200	NC	87,600	17,000	NC	3,240	685	NC
PCB197 & 200	5,430	1,450	NC	20,300	3,700	NC	394	101 U	NC
PCB198 & 199	56,900	16,800	NC	190,000	34,000	NC	5,520	1,210	NC
PCB201	7,510	1,940	NC	26,700	4,970	NC	537	111	NC
PCB202	12,500	3,370	NC	27,400	5,000	NC	1,370	297	NC
PCB203	49,600	13,300	NC	87,000	15,700	NC	4,860	1,050	NC
PCB204	58 U	59.2 U	NC	232 U	122 U	NC	58 U	59.2 U	NC
PCB205	4,980	1,300	NC	9,290	1,610	NC	399	82.2	NC
PCB206	14,500	4,450	NC	26,600	4,820	NC	1,830	390	NC
PCB207	2,170	629	NC	4,830	918	NC	283	117 U	NC
PCB208	2,060	596	NC	4,600	888	NC	368	119 U	NC
PCB209	512	174	NC	519	116	NC	422	102	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-07			EPA1-SB11E-08			EPA1-SB11E-09		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643279.643	7643279.643	7643279.643	7644062.93	7644062.93	7644062.93	7643687.406	7643687.406	7643687.406
Y-coordinate	690016.3478	690016.3478	690016.3478	689439.2818	689439.2818	689439.2818	689713.2152	689713.2152	689713.2152
RiverMile	11	11	11	11.2	11.2	11.2	11.1	11.1	11.1
Sample Date	19-Sep-11	19-Sep-11	19-Sep-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11
Sample Time	7:05	7:05	7:05	12:00	12:00	12:00	12:36	12:36	12:36
Sample Mass (g)	574.32	470.73	1045.05	220.34	160.94	381.28	439.93	341.94	781.87
Monochlorobiphenyl homologs	44.3 UT	45.1 UT	NC	177 UT	93 UT	NC	44.3 UT	45.1 UT	NC
Dichlorobiphenyl homologs	1,670 T	728 T	NC	1,280 T	488 UT	NC	771 T	365 T	NC
Trichlorobiphenyl homologs	14,200 T	4,950 T	NC	7,200 T	1,920 T	NC	3,770 T	1,580 T	NC
Tetrachlorobiphenyl homologs	79,900 T	24,100 T	NC	74,800 T	15,500 T	NC	16,500 T	4,740 T	NC
Pentachlorobiphenyl homologs	213,000 JT	59,000 T	NC	446,000 T	89,400 T	NC	57,400 T	13,600 T	NC
Hexachlorobiphenyl homologs	745,000 JT	297,000 JT	NC	2,890,000 JT	574,000 T	NC	131,000 JT	29,900 T	NC
Heptachlorobiphenyl homologs	784,000 JT	281,000 T	NC	3,350,000 T	635,000 T	NC	93,100 T	21,000 T	NC
Octachlorobiphenyl homologs	287,000 T	81,000 T	NC	693,000 T	124,000 T	NC	25,600 T	5,510 T	NC
Nonachlorobiphenyl homologs	18,700 T	5,680 T	NC	36,000 T	6,630 T	NC	2,480 T	508 T	NC
Total PCB Congeners (RI Calc; ND=0)	2,140,000 JT	753,000 JT	1,520,000 JT	7,490,000 JT	1,440,000 JT	4,940,000 JT	330,000 JT	74,400 JT	218,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	2,140,000 JT	754,000 JT	1,520,000 JT	7,490,000 JT	1,450,000 JT	4,940,000 JT	332,000 JT	77,300 JT	220,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	40.8 JT	10.4 JT	27.1 JT	15.5 JT	1.19 JT	9.47 JT	4.2 JT	0.212 JT	2.46 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	40.8 JT	13.6 JT	28.6 JT	28.4 JT	9.15 JT	20.3 JT	7.42 JT	4.07 JT	5.96 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	26.1 JT	10.1 JT	18.9 JT	42.9 JT	15.3 JT	31.3 JT	12.5 JT	6.87 JT	10 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.922 JT	0.312 JT	0.647 JT	1.72 JT	0.565 JT	1.23 JT	0.342 JT	0.213 JT	0.286 JT
% Lipids	12.5	3.71	NC	5.21	0.44	NC	9.12	1.9	NC

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
PCB001	32.9 U	36.8 U	NC	21.8 U	22.3 U	NC	36.4 U	36.1 U	NC
PCB002	40.8 U	45.6 U	NC	27.1 U	27.6 U	NC	45.1 U	44.7 U	NC
PCB003	21.5 U	24 U	NC	17.1	14.6 U	NC	23.8 U	23.6 U	NC
PCB004	118	74.5 U	NC	641	114	NC	125	73.1 U	NC
PCB005	40.8 U	45.6 U	NC	27.1 U	27.6 U	NC	45.1 U	44.7 U	NC
PCB006	38.2 U	42.6 U	NC	225	40.9	NC	42.2 U	41.8 U	NC
PCB007	51.8 U	57.8 U	NC	34.4 U	35 U	NC	57.3 U	56.7 U	NC
PCB008	49.8	48 U	NC	668	143	NC	142	79.7	NC
PCB009	25 U	27.9 U	NC	41.3	16.9 U	NC	27.7 U	27.4 U	NC
PCB010	27.2 U	30.4 U	NC	23.5	18.4 U	NC	30.1 U	29.8 U	NC
PCB011	214 U	239 U	NC	192	151	NC	394	235 U	NC
PCB012 & 013	36.4 U	40.7 U	NC	24.2 U	24.7 U	NC	40.3 U	39.9 U	NC
PCB014	39.9 U	44.6 U	NC	26.5 U	27 U	NC	44.2 U	43.8 U	NC
PCB015	60.1 U	67.2 U	NC	136	42.2	NC	91.3	85.9	NC
PCB016	48.2 U	53.9 U	NC	519	113	NC	113	71.8	NC
PCB017	225	60.3 U	NC	1,560	276	NC	274	102	NC
PCB018 & 030	160	43.8	NC	1,830	330	NC	374	147 U	NC
PCB019	308	52.4	NC	1,180	189	NC	100	46.2 U	NC
PCB020 & 028	589	138	NC	3,830	706	NC	1,320	509	NC
PCB021 & 033	198 U	221 U	NC	1,000	209	NC	274	217 U	NC
PCB022	87.8	49 U	NC	792	151	NC	256	141	NC
PCB023	48.2 U	53.9 U	NC	32 U	32.7 U	NC	53.4 U	52.9 U	NC
PCB024	29.4 U	32.8 U	NC	29	19.9 U	NC	32.5 U	32.2 U	NC
PCB025	45.4	48 U	NC	415	71.6	NC	79.4	47.1 U	NC
PCB026 & 029	101	103 U	NC	769	134	NC	216	101 U	NC
PCB027	44.7	46.6 U	NC	343	61.1	NC	52.4	45.7 U	NC
PCB031	249	95.1 U	NC	2,640	491	NC	679	299	NC
PCB032	103	25	NC	932	168 U	NC	153	68.4	NC
PCB034	34.6 U	38.7 U	NC	23 U	23.5 U	NC	38.3 U	38 U	NC
PCB035	36 U	40.2 U	NC	23.9 U	24.4 U	NC	39.8 U	39.4 U	NC
PCB036	38.2 U	42.6 U	NC	25.3 U	25.8 U	NC	42.2 U	41.8 U	NC
PCB037	67.6	32.8 U	NC	351	71.7	NC	177	113	NC
PCB038	27.6 U	30.9 U	NC	18.3 U	18.7 U	NC	30.6 U	30.3 U	NC
PCB039	34.6 U	38.7 U	NC	23 U	23.5 U	NC	38.3 U	38 U	NC
PCB040 & 041 & 071	444	89.8	NC	2,280	381	NC	678	198	NC
PCB042	254	49.3	NC	1,060	182	NC	588	146	NC
PCB043 & 073	49.8	53.9 U	NC	293	52.4	NC	55.7	52.9 U	NC
PCB044 & 047 & 065	4,310	680	NC	15,300	2,430	NC	7,610	1,670	NC
PCB045 & 051	525	88.2	NC	3,670	586	NC	261	74.8	NC
PCB046	110 U	123 U	NC	263	74.3 U	NC	121 U	120 U	NC
PCB048	147	29.6	NC	581	100	NC	305	78.8	NC
PCB049 & 069	2,310	365	NC	9,800	1,570	NC	2,990	656	NC
PCB050 & 053	499	80.2	NC	3,220	501	NC	227	63.5 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
PCB052	3,660	589	NC	9,680	1,650	NC	4,520	1,050	NC
PCB054	92.9	34.8 U	NC	392	63.9	NC	34.5 U	34.1 U	NC
PCB055	32.9 U	36.8 U	NC	21.8 U	22.3 U	NC	36.4 U	36.1 U	NC
PCB056	167	45.6 U	NC	952	170	NC	554	149	NC
PCB057	27.6 U	30.9 U	NC	22.4	18.7 U	NC	30.6 U	30.3 U	NC
PCB058	29.4 U	32.8 U	NC	24.2	19.9 U	NC	32.5 U	32.2 U	NC
PCB059 & 062 & 075	329 U	368 U	NC	441	223 U	NC	364 U	361 U	NC
PCB060	377	65.8	NC	573	100	NC	728	171	NC
PCB061 & 070 & 074 & 076	2,780	476	NC	6,500	1,080	NC	5,330	1,250	NC
PCB063	177	28.9 U	NC	208	33.6	NC	248	51.9	NC
PCB064	537	123 U	NC	1,690	291	NC	1,200	291	NC
PCB066	2,910	459	NC	4,130	676	NC	3,900	884	NC
PCB067	46.3	29.4 U	NC	151	26.3	NC	80.7	28.8 U	NC
PCB068	96.5	98 U	NC	249	59.4 U	NC	97.1 U	96.2 U	NC
PCB072	74.9	22.1 U	NC	154	25.8	NC	87.1	21.6 U	NC
PCB073	48.2 U	53.9 U	NC	32 U	21.1 U	NC	53.4 U	52.9 U	NC
PCB077	118	45.1 U	NC	248	40.7	NC	232	53.1	NC
PCB078	20.2 U	22.5 U	NC	13.4 U	13.7 U	NC	22.3 U	22.1 U	NC
PCB079	35.6	38.2 U	NC	84.3	23.2 U	NC	55.3	37.5 U	NC
PCB080	32.5 U	36.3 U	NC	21.6 U	22 U	NC	35.9 U	35.6 U	NC
PCB081	39.5 U	44.1 U	NC	26.2 U	26.7 U	NC	43.7 U	43.3 U	NC
PCB082	246	41.7 U	NC	690	111	NC	430	97.3	NC
PCB083	316	65.2 U	NC	786	86.7	NC	342	63.9 U	NC
PCB084	673	142 U	NC	1,890	288	NC	940	210	NC
PCB085 & 117 & 116	2,210	337	NC	2,040	338	NC	3,350	663	NC
PCB086 & 087 & 097 & 108 & 119 & 125	4,790	770	NC	7,130	1,130	NC	5,480	1,170	NC
PCB088 & 091	1,140	175	NC	4,910	742	NC	982	207	NC
PCB089	25.4 U	28.4 U	NC	55.6	17.2 U	NC	28.2 U	27.9 U	NC
PCB090 & 101 & 113	18,200	2,790	NC	24,600	3,880	NC	11,900	2,410	NC
PCB092	3,140	455	NC	5,020	768	NC	2,530	512	NC
PCB093 & 098 & 100 & 102	973	564 U	NC	2,720	409	NC	1,790	553 U	NC
PCB094	110 U	123 U	NC	250	74.3 U	NC	121 U	120 U	NC
PCB095	6,710	1,030	NC	13,300	1,990	NC	4,730	1,030	NC
PCB096	120	54.9 U	NC	326	49.7	NC	54.4 U	53.8 U	NC
PCB099	9,780	1,340	NC	12,000	1,880	NC	11,900	2,180	NC
PCB103	379	54.9	NC	1,390	199	NC	125	44.2 U	NC
PCB104	65.4 U	73 U	NC	55.6	44.3 U	NC	72.3 U	71.6 U	NC
PCB105	4,550	732	NC	3,140	503	NC	6,840	1,520	NC
PCB106	64.9 U	72.5 U	NC	43.1 U	44 U	NC	71.8 U	71.2 U	NC
PCB107 & 124	257	53.4 U	NC	307	46.8	NC	312	67.6	NC
PCB109	1,250	213	NC	1,330	203	NC	1,310	303	NC
PCB110 & 115	8,280	1,400	NC	11,400	1,840	NC	9,150	1,920	NC
PCB111	44.4	36.3 U	NC	108	22 U	NC	35.9 U	35.6 U	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
PCB112	48.2 U	53.9 U	NC	32 U	32.7 U	NC	53.4 U	52.9 U	NC
PCB114	425	67.5	NC	199	36.6	NC	696	138	NC
PCB118	22,200	3,600	NC	12,100	1,950	NC	26,500	5,440	NC
PCB120	144	123 U	NC	345	74.3 U	NC	121 U	120 U	NC
PCB121	51.9	33.8 U	NC	104	20.5 U	NC	54.5	33.2 U	NC
PCB122	48.4	44.6 U	NC	71.1	27 U	NC	71.8 U	43.8 U	NC
PCB123	345	56.9 U	NC	162	35.4	NC	542	87.9	NC
PCB126	59.2 U	66.2 U	NC	39.3 U	40.1 U	NC	65.5 U	64.9 U	NC
PCB127	45	42.2 U	NC	30.3	25.5 U	NC	68.4	41.3 U	NC
PCB128 & 166	4,520	690	NC	3,550	478	NC	4,540	909	NC
PCB129 & 138 & 163	103,000	14,900	NC	60,000	8,750	NC	44,400	8,830	NC
PCB130	2,800	402	NC	2,560	376	NC	1,120	211	NC
PCB131	171	41.7 U	NC	241	34.8	NC	96.2	40.9 U	NC
PCB132	5,860	893	NC	9,390	1,360	NC	2,190	437	NC
PCB133	1,830	251	NC	2,290	371	NC	918	166	NC
PCB134 & 143	1,490	245 U	NC	1,550	225	NC	427	240 U	NC
PCB135 & 151	22,900	3,310	NC	22,500	3,380	NC	7,650	1,330	NC
PCB136	5,010	709	NC	5,010	708	NC	1,310	227	NC
PCB137	1,830	255	NC	1,010	138	NC	2,310	431	NC
PCB139 & 140	524	74	NC	637	92.7	NC	636	112	NC
PCB141	15,200	2,150	NC	9,610	1,360	NC	3,920	856	NC
PCB142	37.3 U	41.7 U	NC	24.8 U	25.2 U	NC	41.3 U	40.9 U	NC
PCB144	3,050	435	NC	2,450	340	NC	574	99.4	NC
PCB145	41.2 U	46.1 U	NC	27.4 U	27.9 U	NC	45.6 U	45.2 U	NC
PCB146	22,500	3,100	NC	20,000	3,300	NC	8,210	1,490	NC
PCB147 & 149	24,700	3,570	NC	43,700	6,400	NC	7,640	1,460	NC
PCB148	122	73.5 U	NC	446	69.2	NC	72.8 U	72.1 U	NC
PCB150	65.9	52.9 U	NC	318	46.7	NC	52.4 U	51.9 U	NC
PCB152	62.3	57.4 U	NC	83.1	34.8 U	NC	56.8 U	56.3 U	NC
PCB153 & 168	143,000 J	20,600	NC	74,400	11,300	NC	58,300	11,000	NC
PCB154	900	121	NC	2,440	366	NC	837	136	NC
PCB155	53.9 U	60.3 U	NC	35.8 U	36.5 U	NC	59.7 U	59.1 U	NC
PCB156 & 157	9,930	1,420	NC	2,770	453	NC	5,980	1,220	NC
PCB158	7,240	1,060	NC	4,060	576	NC	4,140	810	NC
PCB159	649	123 U	NC	72.8 U	74.3 U	NC	121 U	120 U	NC
PCB160	3.95 U	4.41 U	NC	2.62 U	2.67 U	NC	4.37 U	4.33 U	NC
PCB161	52.2 U	58.3 U	NC	34.7 U	35.3 U	NC	57.8 U	57.2 U	NC
PCB162	203	41.4 U	NC	221	25.1 U	NC	135	49.2	NC
PCB164	4,000	625	NC	2,440	371	NC	1,090	223	NC
PCB165	101	57.8 U	NC	130	35 U	NC	61.8	56.7 U	NC
PCB167	3,830	518	NC	1,640	246	NC	1,790	345	NC
PCB169	314	38.8 U	NC	227 J	49.1 J	NC	93.7 J	38.1 U	NC
PCB170	39,200	5,500	NC	14,100	2,700	NC	9,550	2,220	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
PCB171 & 173	10,400	1,420	NC	5,090	789	NC	3,010	639	NC
PCB172	7,460	971	NC	3,530	607	NC	1,920	394	NC
PCB174	17,300	2,460	NC	13,000	2,140	NC	1,830	362	NC
PCB175	1,720	227	NC	796	131	NC	294	70.7 U	NC
PCB176	1,420	189	NC	1,630	246	NC	226	88 U	NC
PCB177	17,600	2,340	NC	14,300	2,560	NC	2,150	447	NC
PCB178	9,050	1,230	NC	5,790	1,010	NC	2,650	496	NC
PCB179	6,990	990	NC	5,340	848	NC	1,410	271	NC
PCB180 & 193	132,000	18,000	NC	46,600	9,260	NC	35,900	8,030	NC
PCB181	212	65.7 U	NC	80.6	39.8 U	NC	117	64.4 U	NC
PCB182	99.8	44.6 U	NC	168	33	NC	65.5	43.8 U	NC
PCB183 & 185	33,900	4,460	NC	14,600	2,420	NC	8,430	1,810	NC
PCB184	47.8 U	53.4 U	NC	31.7 U	32.4 U	NC	52.9 U	52.4 U	NC
PCB186	69.3 U	77.5 U	NC	46 U	46.9 U	NC	76.7 U	76 U	NC
PCB187	69,700	9,720	NC	38,900	7,100	NC	16,700	3,180	NC
PCB188	75.8	62.3 U	NC	121	37.7 U	NC	61.7 U	61.1 U	NC
PCB189	2,170	263	NC	671	119	NC	655	128	NC
PCB190	5,500	903	NC	1,620	393	NC	1,430	462	NC
PCB191	2,420	301	NC	846	140	NC	615	120	NC
PCB192	38.6 U	43.1 U	NC	25.6 U	26.1 U	NC	42.7 U	42.3 U	NC
PCB194	20,100	2,670	NC	7,750	1,660	NC	5,770	1,310	NC
PCB195	9,700	1,200	NC	3,470	715	NC	2,300	512	NC
PCB196	11,800	1,460	NC	3,830	958	NC	3,020	680	NC
PCB197 & 200	1,830	225	NC	1,000	209	NC	412	99.8 U	NC
PCB198 & 199	17,700	2,320	NC	6,640	1,970	NC	4,130	991	NC
PCB201	2,730	345	NC	1,190	256	NC	573	109	NC
PCB202	3,590	435	NC	1,970	405	NC	1,500	308	NC
PCB203	12,300	1,560	NC	5,090	1,110	NC	4,360	927	NC
PCB204	53.5 U	59.8 U	NC	35.5 U	36.2 U	NC	59.2 U	58.6 U	NC
PCB205	1,160	137	NC	447	89	NC	322	66.4	NC
PCB206	3,510	482	NC	1,510	327	NC	1,890	427	NC
PCB207	637	118 U	NC	232	71.3 U	NC	323	115 U	NC
PCB208	673	120 U	NC	392	79.4	NC	443	118 U	NC
PCB209	429	69.3	NC	191	46.8	NC	584	150	NC

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-10			EPA1-SB11W-05			EPA1-SB11W-06		
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)
X-coordinate	7643305.445	7643305.445	7643305.445	7645552.14	7645552.14	7645552.14	7645637.354	7645637.354	7645637.354
Y-coordinate	689983.1343	689983.1343	689983.1343	686305.2547	686305.2547	686305.2547	686200.0404	686200.0404	686200.0404
RiverMile	11.1	11.1	11.1	11.9	11.9	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11	16-Sep-11
Sample Time	13:30	13:30	13:30	8:22	8:22	8:22	7:14	7:14	7:14
Sample Mass (g)	377.44	265.84	643.28	105.36	89.88	195.24	753.89	579.31	1333.2
Monochlorobiphenyl homologs	40.8 UT	45.6 UT	NC	28 T	27.6 UT	NC	45.1 UT	44.7 UT	NC
Dichlorobiphenyl homologs	350 T	239 UT	NC	1,930 T	509 T	NC	802 T	369 T	NC
Trichlorobiphenyl homologs	2,170 T	685 T	NC	16,200 T	2,930 T	NC	4,140 T	1,680 T	NC
Tetrachlorobiphenyl homologs	19,900 T	3,560 T	NC	62,000 T	10,200 T	NC	30,000 T	7,210 T	NC
Pentachlorobiphenyl homologs	86,400 T	13,700 T	NC	106,000 T	16,700 T	NC	90,300 T	18,600 T	NC
Hexachlorobiphenyl homologs	386,000 JT	55,500 T	NC	274,000 JT	40,900 JT	NC	159,000 JT	30,700 T	NC
Heptachlorobiphenyl homologs	357,000 T	49,100 T	NC	167,000 T	30,600 T	NC	87,000 T	18,700 T	NC
Octachlorobiphenyl homologs	80,900 T	10,400 T	NC	31,400 T	7,370 T	NC	22,400 T	4,950 T	NC
Nonachlorobiphenyl homologs	4,820 T	601 T	NC	2,130 T	442 T	NC	2,660 T	544 T	NC
Total PCB Congeners (RI Calc; ND=0)	937,000 JT	131,000 JT	604,000 JT	661,000 JT	109,000 JT	407,000 JT	395,000 JT	80,500 JT	259,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	938,000 JT	134,000 JT	606,000 JT	661,000 JT	110,000 JT	407,000 JT	396,000 JT	83,000 JT	260,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	10.7 JT	0.198 JT	6.38 JT	7.46 JT	1.58 JT	4.75 JT	4.12 JT	0.272 JT	2.45 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	13.7 JT	4.1 JT	9.73 JT	9.42 JT	3.59 JT	6.74 JT	7.41 JT	4.09 JT	5.97 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	12.9 JT	6.93 JT	10.4 JT	16.7 JT	5.55 JT	11.5 JT	18.8 JT	8.43 JT	14.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.403 JT	0.213 JT	0.324 JT	0.244 JT	0.13 JT	0.192 JT	0.418 JT	0.224 JT	0.333 JT
% Lipids	5.79	0.88	NC	7.2	0.81	NC	11.6	2.68	NC

Notes:

	All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).
J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
PCB001	36.4 U	37.1 U	NC	35 U	36.1 U	NC	0.0597 U	0.0579 U	0.0559 U	0.0569 U
PCB002	45.1 U	46 U	NC	43.5 U	44.7 U	NC	0.12 U	0.117 U	0.113 U	0.115 U
PCB003	23.8 U	24.3 U	NC	22.9 U	23.6 U	NC	0.0638 U	0.062 U	0.0598 U	0.0609 U
PCB004	127	75.2 U	NC	71 U	73.1 U	NC	0.0797	0.0301 U	0.029 U	0.0339 J
PCB005	45.1 U	46 U	NC	43.5 U	44.7 U	NC	0.105 U	0.102 U	0.0982 U	0.0999 U
PCB006	42.2 U	43.1 U	NC	40.7 U	41.8 U	NC	0.114 U	0.11 U	0.107 U	0.108 U
PCB007	57.3 U	58.4 U	NC	55.1 U	56.7 U	NC	0.125 U	0.121 U	0.117 U	0.119 U
PCB008	123	48.5 U	NC	45.8 U	47.1 U	NC	0.128 U	0.125 U	0.12 U	0.122 U
PCB009	27.7 U	28.2 U	NC	26.6 U	27.4 U	NC	0.137 U	0.133 U	0.129 U	0.131 U
PCB010	30.1 U	30.7 U	NC	29 U	29.8 U	NC	0.204 U	0.198 U	0.191 U	0.194 U
PCB011	237 U	242 U	NC	228 U	235 U	NC	0.417 U	0.244 U	0.255 U	0.322 U
PCB012 & 013	40.3 U	41.1 U	NC	38.8 U	39.9 U	NC	0.172 U	0.167 U	0.161 U	0.164 U
PCB014	44.2 U	45 U	NC	42.5 U	43.8 U	NC	0.0482 U	0.0468 U	0.0452 U	0.046 U
PCB015	66.5 U	67.8 U	NC	64 U	65.9 U	NC	0.0566 U	0.0219 J	0.0198 J	0.0253 U
PCB016	162	54.5 U	NC	51.4 U	52.9 U	NC	0.22 U	0.214 U	0.207 U	0.21 U
PCB017	696	84.9	NC	811	195	NC	0.184 U	0.179 U	0.172 U	0.175 U
PCB018 & 030	501	65.6	NC	222	68.3 U	NC	0.416 U	0.404 U	0.39 U	0.397 U
PCB019	309	47.5 U	NC	470	104	NC	0.0499 U	0.0484 U	0.0468 U	0.0476 U
PCB020 & 028	1,910	228	NC	1,580	369	NC	0.147	0.0959 U	0.0926 U	0.0942 U
PCB021 & 033	274	223 U	NC	250	217 U	NC	0.145 U	0.141 U	0.136 U	0.139 U
PCB022	390	55.3	NC	168	50.6	NC	0.0613	0.0341 U	0.0329 U	0.0335 U
PCB023	53.4 U	54.5 U	NC	51.4 U	52.9 U	NC	0.103 U	0.0999 U	0.0965 U	0.0981 U
PCB024	32.5 U	33.2 U	NC	31.3 U	32.2 U	NC	0.176 U	0.171 U	0.165 U	0.168 U
PCB025	188	48.5 U	NC	228	48.5	NC	0.058 U	0.0563 U	0.0544 U	0.0553 U
PCB026 & 029	373	104 U	NC	257	101 U	NC	0.166 U	0.161 U	0.156 U	0.158 U
PCB027	109	47 U	NC	212	49.9	NC	0.169 U	0.164 U	0.159 U	0.162 U
PCB031	1,220	152	NC	613	160	NC	0.13	0.0531 U	0.0513 U	0.0548
PCB032	274	36.1	NC	692	160	NC	0.166 U	0.161 U	0.156 U	0.158 U
PCB034	38.3 U	39.1 U	NC	36.9 U	38 U	NC	0.0788 U	0.0765 U	0.0739 U	0.0751 U
PCB035	39.8 U	40.6 U	NC	38.3 U	39.4 U	NC	0.133 U	0.129 U	0.124 U	0.126 U
PCB036	42.2 U	43.1 U	NC	40.7 U	41.8 U	NC	0.0773 U	0.0751 U	0.0725 U	0.0738 U
PCB037	188	35.1	NC	38.4	32.2 U	NC	0.034	0.0268 U	0.0259 U	0.0264 U
PCB038	30.6 U	31.2 U	NC	29.4 U	30.3 U	NC	0.0917 U	0.089 U	0.0859 U	0.0874 U
PCB039	38.3 U	39.1 U	NC	36.9 U	38 U	NC	0.0811 U	0.0787 U	0.076 U	0.0773 U
PCB040 & 041 & 071	1,410	172	NC	2,190	522	NC	0.322 U	0.313 U	0.302 U	0.307 U
PCB042	827	94.3	NC	1,300	282	NC	0.187 U	0.182 U	0.176 U	0.179 U
PCB043 & 073	137	54.5 U	NC	435	98.1	NC	0.349 U	0.339 U	0.327 U	0.333 U
PCB044 & 047 & 065	6,580	706	NC	19,200	3,990	NC	0.399 U	0.388 U	0.374 U	0.381 U
PCB045 & 051	1,210	134	NC	3,590	779	NC	0.618 U	0.599 U	0.579 U	0.589 U
PCB046	139	124 U	NC	139	120 U	NC	0.329 U	0.319 U	0.308 U	0.313 U
PCB048	517	57.8	NC	564	125	NC	0.179 U	0.174 U	0.168 U	0.171 U
PCB049 & 069	4,370	446	NC	9,600	2,000	NC	0.337 U	0.327 U	0.316 U	0.321 U
PCB050 & 053	1,330	145	NC	4,050	874	NC	0.684 U	0.664 U	0.641 U	0.652 U

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
PCB052	7,950	856	NC	9,360	2,000	NC	0.243 U	0.236 U	0.228 U	0.232 U
PCB054	84.1	35.1 U	NC	833	173	NC	0.0503 U	0.0488 U	0.0472 U	0.048 U
PCB055	36.4 U	37.1 U	NC	35 U	36.1 U	NC	0.154 U	0.149 U	0.144 U	0.147 U
PCB056	845	102	NC	958	214	NC	0.129 U	0.125 U	0.121 U	0.123 U
PCB057	30.6 U	31.2 U	NC	32.8	30.3 U	NC	0.0495 U	0.048 U	0.0464 U	0.0472 U
PCB058	32.5 U	33.2 U	NC	39.4	32.2 U	NC	0.0618 U	0.0599 U	0.0579 U	0.0589 U
PCB059 & 062 & 075	364 U	371 U	NC	713	361 U	NC	0.322 U	0.313 U	0.302 U	0.307 U
PCB060	666	75.6	NC	2,380	506	NC	0.155 U	0.151 U	0.145 U	0.148 U
PCB061 & 070 & 074 & 076	6,240	654	NC	10,300	2,150	NC	0.297 U	0.289 U	0.279 U	0.284 U
PCB063	180	29.2 U	NC	657	130	NC	0.0773 U	0.0751 U	0.0725 U	0.0738 U
PCB064	1,520	170	NC	2,360	517	NC	0.119 U	0.116 U	0.112 U	0.114 U
PCB066	3,730	399	NC	10,800	2,280	NC	0.124 U	0.12 U	0.116 U	0.118 U
PCB067	113	29.7 U	NC	184	38.3	NC	0.0969 U	0.0941 U	0.0908 U	0.0924 U
PCB068	97.1 U	99 U	NC	226	96.2 U	NC	0.0688 U	0.0668 U	0.0645 U	0.0656 U
PCB072	89.3	22.3 U	NC	181	37.1	NC	0.0561 U	0.0545 U	0.0526 U	0.0535 U
PCB073	0 U	54.5 U	NC	51.4 U	52.9 U	NC	0.349 U	0 U	0 U	0 U
PCB077	233	45.5 U	NC	225	48.3	NC	0.0713 U	0.0692 U	0.0668 U	0.068 U
PCB078	22.3 U	22.8 U	NC	21.5 U	22.1 U	NC	0.174 U	0.169 U	0.164 U	0.166 U
PCB079	67.8	38.6 U	NC	91	37.5 U	NC	0.214 U	0.208 U	0.201 U	0.204 U
PCB080	35.9 U	36.6 U	NC	34.6 U	35.6 U	NC	0.154 U	0.15 U	0.144 U	0.147 U
PCB081	43.7 U	44.6 U	NC	42.1 U	43.3 U	NC	0.0684 U	0.0664 U	0.0641 U	0.0652 U
PCB082	710	78.5	NC	966	210	NC	0.0738 U	0.0717 U	0.0692 U	0.0704 U
PCB083	677	81.1	NC	632	135	NC	0.139 U	0.135 U	0.131 U	0.133 U
PCB084	2,220	243	NC	1,500	335	NC	0.0794 U	0.0771 U	0.0744 U	0.0757 U
PCB085 & 117 & 116	2,450	239	NC	5,470	1,110	NC	0.115 U	0.112 U	0.108 U	0.11 U
PCB086 & 087 & 097 & 108 & 119 & 125	8,860	911	NC	8,890	1,900	NC	0.14 U	0.136 U	0.131 U	0.133 U
PCB088 & 091	2,240	233	NC	4,090	845	NC	0.193 U	0.188 U	0.181 U	0.184 U
PCB089	115	28.7 U	NC	53.1	27.9 U	NC	0.095 U	0.0922 U	0.0891 U	0.0906 U
PCB090 & 101 & 113	29,500	2,870	NC	24,100	4,980	NC	1.07 U	1.04 U	1.01 U	1.02 U
PCB092	4,320	440	NC	4,100	844	NC	0.125 U	0.121 U	0.117 U	0.119 U
PCB093 & 098 & 100 & 102	1,490	569 U	NC	2,890	572	NC	0.532 U	0.517 U	0.499 U	0.508 U
PCB094	268	124 U	NC	389	120 U	NC	0.135 U	0.131 U	0.126 U	0.129 U
PCB095	15,700	1,620	NC	9,830	2,090	NC	0.642 U	0.624 U	0.602 U	0.613 U
PCB096	171	55.4 U	NC	384	78.3	NC	0.245 U	0.238 U	0.23 U	0.234 U
PCB099	8,810	851	NC	18,700	3,750	NC	0.229 U	0.222 U	0.214 U	0.218 U
PCB103	387	45.5 U	NC	858	167	NC	0.116 U	0.112 U	0.108 U	0.11 U
PCB104	72.3 U	73.8 U	NC	70.3	71.6 U	NC	0.115 U	0.111 U	0.107 U	0.109 U
PCB105	4,660	479	NC	10,400	2,300	NC	0.0736 U	0.0715 U	0.069 U	0.0702 U
PCB106	71.8 U	73.3 U	NC	69.2 U	71.2 U	NC	0.17 U	0.165 U	0.16 U	0.162 U
PCB107 & 124	397	54 U	NC	522	107	NC	1.13 U	1.1 U	1.06 U	1.08 U
PCB109	1,080	103	NC	2,290	504	NC	0.141 U	0.137 U	0.132 U	0.134 U
PCB110 & 115	17,600	1,860	NC	13,600	2,920	NC	0.401 U	0.39 U	0.376 U	0.383 U
PCB111	35.9 U	36.6 U	NC	72.8	35.6 U	NC	0.115 U	0.111 U	0.107 U	0.109 U

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
PCB112	53.4 U	54.5 U	NC	51.4 U	52.9 U	NC	0.111 U	0.108 U	0.104 U	0.106 U
PCB114	287	60.9 U	NC	1,070	222	NC	0.0563 U	0.0547 U	0.0528 U	0.0537 U
PCB118	16,700	1,710	NC	43,200	8,760	NC	0.32 U	0.311 U	0.3 U	0.305 U
PCB120	121 U	124 U	NC	233	120 U	NC	0.074 U	0.0719 U	0.0694 U	0.0706 U
PCB121	33.5 U	34.2 U	NC	98.6	33.2 U	NC	0.0424 U	0.0412 U	0.0398 U	0.0404 U
PCB122	89.2	45 U	NC	118	43.8 U	NC	0.047 U	0.0456 U	0.044 U	0.0448 U
PCB123	221	57.4 U	NC	1,010	173	NC	0.241 U	0.234 U	0.226 U	0.23 U
PCB126	65.5 U	66.8 U	NC	85.9 J	64.9 U	NC	0.0451 U	0.0438 U	0.0423 U	0.043 U
PCB127	41.7 U	42.6 U	NC	80	41.3 U	NC	0.0765 U	0.0743 U	0.0717 U	0.073 U
PCB128 & 166	5,470	499	NC	6,290	1,290	NC	0.216 U	0.21 U	0.203 U	0.206 U
PCB129 & 138 & 163	83,400	7,030	NC	282,000 J	28,000	NC	1.92 U	1.86 U	1.8 U	1.83 U
PCB130	2,820	240	NC	3,850	810	NC	1.32 U	1.28 U	1.24 U	1.26 U
PCB131	445	42.1 U	NC	254	50.7	NC	0.125 U	0.122 U	0.118 U	0.12 U
PCB132	18,700	1,650	NC	4,430	951	NC	0.432 U	0.42 U	0.405 U	0.412 U
PCB133	1,070	90.2	NC	2,380	495	NC	0.115 U	0.112 U	0.108 U	0.11 U
PCB134 & 143	2,810	250	NC	1,560	348	NC	0.134 U	0.13 U	0.126 U	0.128 U
PCB135 & 151	33,700	2,780	NC	16,900	3,390	NC	0.62 U	0.601 U	0.581 U	0.591 U
PCB136	10,400	871	NC	3,020	610	NC	0.177 U	0.172 U	0.166 U	0.169 U
PCB137	1,430	144 U	NC	3,290	547	NC	0.279 U	0.27 U	0.261 U	0.266 U
PCB139 & 140	466	59.4 U	NC	772	164	NC	0.125 U	0.121 U	0.117 U	0.119 U
PCB141	19,800	1,750	NC	12,400	2,700	NC	0.426 U	0.414 U	0.4 U	0.406 U
PCB142	41.3 U	42.1 U	NC	39.7 U	40.9 U	NC	0.062 U	0.0601 U	0.0581 U	0.0591 U
PCB144	4,870	398	NC	3,270	659	NC	0.171 U	0.166 U	0.16 U	0.163 U
PCB145	45.6 U	46.5 U	NC	43.9 U	45.2 U	NC	0.0509 U	0.0494 U	0.0477 U	0.0486 U
PCB146	13,000	1,070	NC	30,000	6,380	NC	0.351 U	0.341 U	0.329 U	0.335 U
PCB147 & 149	62,300	5,420	NC	33,500	7,210	NC	1.48 U	1.44 U	1.39 U	1.41 U
PCB148	92.2	74.3 U	NC	175	72.1 U	NC	0.103 U	0.1 U	0.0969 U	0.0985 U
PCB150	82.7	53.5 U	NC	170	51.9 U	NC	0.0524 U	0.0509 U	0.0491 U	0.05 U
PCB152	69.6	57.9 U	NC	100	56.3 U	NC	0.0692 U	0.0672 U	0.0649 U	0.066 U
PCB153 & 168	92,300	7,800	NC	383,000 J	37,900	NC	2.49 U	2.42 U	2.33 U	2.37 U
PCB154	634	55.3	NC	1,230	245	NC	0.118 U	0.115 U	0.111 U	0.113 U
PCB155	59.7 U	60.9 U	NC	61.6	59.1 U	NC	0.0518 U	0.0503 U	0.0485 U	0.0494 U
PCB156 & 157	5,110	505	NC	14,100	3,020	NC	0.233 U	0.226 U	0.218 U	0.222 U
PCB158	7,390	640	NC	8,540	1,820	NC	0.235 U	0.228 U	0.22 U	0.224 U
PCB159	1,000	124 U	NC	62 U	120 U	NC	0.102 U	0.0993 U	0.0959 U	0.0976 U
PCB160	4.37 U	4.46 U	NC	4.21 U	4.33 U	NC	2.02 U	1.96 U	1.89 U	1.93 U
PCB161	57.8 U	58.9 U	NC	55.6 U	57.2 U	NC	0.106 U	0.103 U	0.0994 U	0.101 U
PCB162	109	41.8 U	NC	1,390	62.4	NC	0.069 U	0.067 U	0.0647 U	0.0658 U
PCB164	4,730	418	NC	4,940	1,210	NC	0.264 U	0.256 U	0.248 U	0.252 U
PCB165	57.3 U	58.4 U	NC	143	56.7 U	NC	0.0919 U	0.0892 U	0.0861 U	0.0876 U
PCB167	1,970	182	NC	5,730	1,230	NC	0.104 U	0.101 U	0.0978 U	0.0995 U
PCB169	0 J	39.2 U	NC	350 J	94.2 J	NC	0.0414 U	0.0402 U	0.0388 U	0.0395 U
PCB170	22,800	2,440	NC	40,400	9,810	NC	0.539 U	0.523 U	0.505 U	0.514 U

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
PCB171 & 173	9,370	884	NC	8,470	1,840	NC	0.207 U	0.201 U	0.194 U	0.197 U
PCB172	4,800	444	NC	8,400	1,990	NC	0.0988 U	0.0959 U	0.0926 U	0.0942 U
PCB174	27,000	2,510	NC	21,800	5,340	NC	0.389 U	0.377 U	0.364 U	0.371 U
PCB175	1,300	118	NC	2,050	480	NC	0.0399 U	0.0388 U	0.0374 U	0.0381 U
PCB176	3,340	311	NC	1,140	262	NC	0.0821 U	0.0797 U	0.077 U	0.0783 U
PCB177	16,200	1,530	NC	23,100	5,200	NC	0.25 U	0.242 U	0.234 U	0.238 U
PCB178	6,250	588	NC	10,700	2,550	NC	0.0724 U	0.0702 U	0.0678 U	0.069 U
PCB179	12,000	1,130	NC	2,940	651	NC	0.148 U	0.144 U	0.139 U	0.141 U
PCB180 & 193	59,900	6,470	NC	447,000 J	40,500	NC	1.16 U	1.12 U	1.09 U	1.1 U
PCB181	103	66.3 U	NC	289	65.5	NC	0.0426 U	0.0414 U	0.04 U	0.0406 U
PCB182	44.2 U	45 U	NC	165	43.8 U	NC	0.0306 U	0.0297 U	0.0286 U	0.0291 U
PCB183 & 185	22,900	2,160	NC	34,900	8,280	NC	0.455 U	0.442 U	0.427 U	0.434 U
PCB184	52.9 U	54 U	NC	50.9 U	52.4 U	NC	0.0545 U	0.0529 U	0.0511 U	0.0519 U
PCB186	76.7 U	78.2 U	NC	73.8 U	76 U	NC	0.0522 U	0.0507 U	0.0489 U	0.0498 U
PCB187	37,800	3,550	NC	96,100	22,700	NC	0.491 U	0.476 U	0.46 U	0.468 U
PCB188	61.7 U	62.9 U	NC	107	61.1 U	NC	0.052 U	0.0505 U	0.0487 U	0.0496 U
PCB189	970	85.8	NC	2,740	655	NC	0.0665 U	0.0646 U	0.0624 U	0.0634 U
PCB190	2,580	321	NC	5,590	1,830	NC	0.134 U	0.13 U	0.125 U	0.127 U
PCB191	1,230	109	NC	2,860	652	NC	0.0489 U	0.0474 U	0.0458 U	0.0466 U
PCB192	42.7 U	43.6 U	NC	41.1 U	42.3 U	NC	0.0647 U	0.0628 U	0.0606 U	0.0617 U
PCB194	11,000	1,110	NC	23,400	6,770	NC	0.149 U	0.145 U	0.14 U	0.142 U
PCB195	5,080	489	NC	9,240	2,560	NC	0.113 U	0.109 U	0.106 U	0.107 U
PCB196	5,570	610	NC	13,700	4,040	NC	0.184 U	0.178 U	0.172 U	0.175 U
PCB197 & 200	1,750	176	NC	1,650	467	NC	0.191 U	0.185 U	0.179 U	0.182 U
PCB198 & 199	8,850	1,080	NC	20,700	6,690	NC	0.279 U	0.27 U	0.261 U	0.266 U
PCB201	1,710	161	NC	3,240	904	NC	0.158 U	0.154 U	0.149 U	0.151 U
PCB202	2,430	239	NC	3,970	1,120	NC	0.0973 U	0.0945 U	0.0912 U	0.0928 U
PCB203	7,600	760	NC	9,750	2,810	NC	0.144 U	0.14 U	0.135 U	0.137 U
PCB204	52.9 U	60.3 U	NC	57 U	58.6 U	NC	0.089 U	0.0864 U	0.0834 U	0.0849 U
PCB205	702	63.5	NC	988	269	NC	0.0688 U	0.0668 U	0.0645 U	0.0656 U
PCB206	2,100	237	NC	3,430	1,140	NC	0.0551 U	0.0535 U	0.0516 U	0.0525 U
PCB207	312	119 U	NC	751	249	NC	0.0509 U	0.0494 U	0.0477 U	0.0486 U
PCB208	433	121 U	NC	886	280	NC	0.0913 U	0.0886 U	0.0856 U	0.087 U
PCB209	192	54.7 U	NC	757	272	NC	0.151 U	0.146 U	0.141 U	0.144 U

Table 4. Analytical Results Including Summation Groups
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07			EPA1-SB11W-08			NA	NA	NA	NA
Tissue	body without fillet	fillet	whole body (calculated)	body without fillet	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7643703.153	7642440.545	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	688248.8439	689464.813	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11.4	11	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	9:20	10:12	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	61.58	44.48	106.06	467.17	210.21	677.38	NA	NA	NA	NA
Monochlorobiphenyl homologs	45.1 UT	46 UT	NC	43.5 UT	44.7 UT	NC	0.12 UT	0.117 UT	0.113 UT	0.115 UT
Dichlorobiphenyl homologs	452 T	242 UT	NC	228 UT	235 UT	NC	0.608 T	0.442 JT	0.435 JT	0.485 JT
Trichlorobiphenyl homologs	6,660 T	991 T	NC	5,630 T	1,440 T	NC	1.37 T	0.404 UT	0.39 UT	1.09 T
Tetrachlorobiphenyl homologs	38,500 T	4,520 T	NC	80,500 T	17,200 T	NC	0.684 UT	0.664 UT	0.641 UT	0.652 UT
Pentachlorobiphenyl homologs	119,000 T	12,400 T	NC	156,000 JT	32,300 T	NC	1.13 UT	1.1 UT	1.06 UT	1.08 UT
Hexachlorobiphenyl homologs	374,000 JT	32,000 T	NC	824,000 JT	99,400 JT	NC	2.49 UT	2.42 UT	2.33 UT	2.37 UT
Heptachlorobiphenyl homologs	229,000 T	22,800 T	NC	709,000 JT	103,000 T	NC	1.16 UT	1.12 UT	1.09 UT	1.1 UT
Octachlorobiphenyl homologs	44,700 T	4,690 T	NC	86,600 T	25,600 T	NC	0.279 UT	0.27 UT	0.261 UT	0.266 UT
Nonachlorobiphenyl homologs	2,850 T	357 T	NC	5,070 T	1,670 T	NC	0.0913 UT	0.0886 UT	0.0856 UT	0.087 UT
Total PCB Congeners (RI Calc; ND=0)	814,000 JT	75,600 JT	505,000 JT	1,870,000 JT	279,000 JT	1,370,000 JT	0.452 JT	0.0219 JT	0.0198 JT	0.0887 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	815,000 JT	78,100 JT	506,000 JT	1,870,000 JT	281,000 JT	1,370,000 JT	17.4 JT	16.3 JT	15.8 JT	16.1 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.921 JT	0.0889 JT	0.572 JT	21.5 JT	3.32 JT	15.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.2 JT	4.03 JT	4.13 JT	21.5 JT	6.57 JT	16.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	18.3 JT	6.85 JT	13.5 JT	25.4 JT	8.58 JT	20.2 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.348 JT	0.197 JT	0.284 JT	0.871 JT	0.264 JT	0.683 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
% Lipids	7.36	0.86	NC	1.65	0.35	NC	NA	NA	NA	NA

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on pages 51 to 55 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
NC	Not calculated
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole BodyOnly, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB04E-02		EPA1-SB04E-06		EPA1-SB05E-02		EPA1-SB05E-03		EPA1-SB05E-04	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7618740.363	7618740.363	7618995.081	7618995.081	7621025.952	7621025.952	7621611.18	7621611.18	7622425.679	7622425.679
Y-coordinate	714962.802	714962.802	714296.5253	714296.5253	710385.5935	710385.5935	709354.4934	709354.4934	708300.1288	708300.1288
RiverMile	4.2	4.2	4.3	4.3	5.2	5.2	5.4	5.4	5.7	5.7
Sample Date	29-Sep-11	29-Sep-11	29-Sep-11	29-Sep-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	6-Oct-11	6-Oct-11
Sample Time	18:34	18:34	17:10	17:10	9:54	9:54	9:32	9:32	18:10	18:10
Sample Mass (g)	148.75	347.2	171.54	356.38	226.9	479.12	155.69	353.73	235.07	513.76
Total PCB Congeners (RI Calc; ND=0)	62,300 JT	235,000 JT	119,000 JT	412,000 JT	53,300 JT	245,000 JT	106,000 JT	400,000 JT	55,000 JT	218,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	63,500 JT	235,000 JT	120,000 JT	413,000 JT	54,400 JT	246,000 JT	106,000 JT	400,000 JT	57,300 JT	220,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.179 JT	4.49 JT	0.412 JT	5.76 JT	0.162 JT	0.697 JT	0.263 JT	8.92 JT	0.132 JT	0.576 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	2.45 JT	5.46 JT	2.77 JT	6.9 JT	1.75 JT	3.5 JT	2.25 JT	9.79 JT	3.85 JT	4.35 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.99 JT	27.5 JT	13.8 JT	46.2 JT	4.59 JT	13.2 JT	11.1 JT	17.1 JT	7.87 JT	23.2 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.142 JT	0.321 JT	0.193 JT	0.564 JT	0.103 JT	0.258 JT	0.162 JT	0.35 JT	0.195 JT	0.294 JT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole BodyOnly, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB05W-02		EPA1-SB05W-03		EPA1-SB05W-04		EPA1-SB06E-02		EPA1-SB06E-08	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7620011.504	7620011.504	7620605.967	7620605.967	7622425.679	7622425.679	7625302.748	7625302.748	7627751.005	7627751.005
Y-coordinate	709612.5127	709612.5127	708796.5154	708796.5154	708300.1288	708300.1288	706147.4378	706147.4378	704513.7004	704513.7004
RiverMile	5.2	5.2	5.4	5.4	5.7	5.7	6.4	6.4	6.9	6.9
Sample Date	2-Oct-11	2-Oct-11	28-Sep-11	28-Sep-11	22-Sep-11	22-Sep-11	3-Oct-11	3-Oct-11	8-Oct-11	8-Oct-11
Sample Time	12:50	12:50	15:11	15:11	12:01	12:01	17:30	17:30	14:40	14:40
Sample Mass (g)	346.59	763.5	108.01	245.45	348.52	809.44	295.78	727.73	165.25	382.7
Total PCB Congeners (RI Calc; ND=0)	142,000 JT	344,000 JT	30,800 JT	110,000 JT	58,500 JT	197,000 JT	212,000 JT	577,000 JT	35,400 JT	146,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	142,000 JT	344,000 JT	32,000 JT	111,000 JT	61,100 JT	199,000 JT	213,000 JT	578,000 JT	38,300 JT	148,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	1.65 JT	7.56 JT	0.0825 JT	0.614 JT	0.217 JT	1.9 JT	2.1 JT	2.92 JT	0.0962 JT	0.4 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.62 JT	8.45 JT	1.66 JT	2.02 JT	4.07 JT	5.45 JT	4.09 JT	7.24 JT	3.85 JT	4.15 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	11.4 JT	25.6 JT	5.08 JT	12.8 JT	8.38 JT	15 JT	7.28 JT	18.1 JT	6.53 JT	11.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.206 JT	0.479 JT	0.0899 JT	0.138 JT	0.216 JT	0.315 JT	0.255 JT	0.573 JT	0.189 JT	0.248 JT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole BodyOnly, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB06E-09		EPA1-SB06E-10		EPA1-SB06E-11		EPA1-SB06W-01		EPA1-SB06W-04	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7627261.88	7627261.88	7627239.777	7627239.777	7627178.523	7627178.523	7623259.739	7623259.739	7625793.951	7625793.951
Y-coordinate	704853.8424	704853.8424	704870.1191	704870.1191	704970.9609	704970.9609	706089.1385	706089.1385	704637.7654	704637.7654
RiverMile	6.8	6.8	6.8	6.8	6.8	6.8	6.1	6.1	6.6	6.6
Sample Date	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	7-Oct-11	7-Oct-11	6-Oct-11	6-Oct-11
Sample Time	15:49	15:49	16:10	16:10	16:15	16:15	8:20	8:20	16:45	16:45
Sample Mass (g)	154.51	367.31	349.44	800.09	93.53	204.23	284.8	617.63	96.49	213.29
Total PCB Congeners (RI Calc; ND=0)	52,600 JT	217,000 JT	38,200 JT	93,000 JT	34,100 JT	134,000 JT	87,800 JT	258,000 JT	232,000 JT	912,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	55,600 JT	218,000 JT	40,700 JT	95,200 JT	37,100 JT	136,000 JT	89,900 JT	259,000 JT	234,000 JT	913,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.133 JT	0.521 JT	0.154 JT	0.373 JT	0.0843 JT	0.328 JT	0.249 JT	0.699 JT	0.79 JT	11.1 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.92 JT	4.28 JT	3.87 JT	4.17 JT	3.95 JT	4.06 JT	3.86 JT	4.87 JT	4.72 JT	13.4 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.05 JT	15.1 JT	7.68 JT	11 JT	6.7 JT	12 JT	8.56 JT	15.8 JT	20.5 JT	82.1 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.199 JT	0.265 JT	0.199 JT	0.244 JT	0.192 JT	0.235 JT	0.211 JT	0.305 JT	0.334 JT	1.17 JT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole BodyOnly, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB07E-04		EPA1-SB07E-05		EPA1-SB07E-06		EPA1-SB08W-01		EPA1-SB08W-05	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7630501.76	7630501.76	7631760.293	7631760.293	7631349.5	7631349.5	7630437.208	7630437.208	7633514.593	7633514.593
Y-coordinate	702199.7767	702199.7767	701577.0326	701577.0326	701694.068	701694.068	699436.5357	699436.5357	696771.2835	696771.2835
RiverMile	7.6	7.6	7.9	7.9	7.9	7.9	8	8	8.8	8.8
Sample Date	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	3-Oct-11	27-Sep-11	27-Sep-11	27-Sep-11	27-Sep-11
Sample Time	16:15	16:15	15:30	15:30	15:42	15:42	11:33	11:33	10:00	10:00
Sample Mass (g)	133.25	288.19	84.2	200.12	215.09	474.54	293.4	675.38	88.4	195.22
Total PCB Congeners (RI Calc; ND=0)	43,600 JT	145,000 JT	38,800 JT	214,000 JT	78,800 JT	221,000 JT	87,900 JT	367,000 JT	54,000 JT	278,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	46,300 JT	147,000 JT	40,300 JT	215,000 JT	81,200 JT	223,000 JT	88,900 JT	368,000 JT	55,300 JT	279,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.115 JT	1.96 JT	0.819 JT	2.16 JT	0.152 JT	2.06 JT	0.281 JT	6.98 JT	0.134 JT	4.68 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.97 JT	5.51 JT	2.75 JT	4.82 JT	3.87 JT	5.58 JT	2.67 JT	8.02 JT	2.52 JT	5.76 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.58 JT	15.2 JT	5.26 JT	13.8 JT	6.55 JT	13.3 JT	7.62 JT	26.3 JT	6.92 JT	23.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.2 JT	0.255 JT	0.122 JT	0.234 JT	0.197 JT	0.265 JT	0.162 JT	0.497 JT	0.137 JT	0.332 JT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole BodyOnly, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB08W-06		EPA1-SB09E-05		EPA1-SB10E-04		EPA1-SB10E-06		EPA1-SB11E-07	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7630400.532	7630400.532	7639620.343	7639620.343	7641543.945	7641543.945	7640465.853	7640465.853	7643279.643	7643279.643
Y-coordinate	699535.9693	699535.9693	694926.9917	694926.9917	692043.6338	692043.6338	693421.9495	693421.9495	690016.3478	690016.3478
RiverMile	8	8	9.9	9.9	10.5	10.5	10.2	10.2	11	11
Sample Date	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	19-Sep-11	19-Sep-11
Sample Time	16:50	16:50	14:13	14:13	12:57	12:57	13:50	13:50	7:05	7:05
Sample Mass (g)	131.12	336.77	141.64	339.1	110.29	252.54	40.99	89.63	470.73	1045.05
Total PCB Congeners (RI Calc; ND=0)	63,500 JT	240,000 JT	109,000 JT	436,000 JT	162,000 JT	556,000 JT	36,400 JT	201,000 JT	753,000 JT	1,520,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	65,500 JT	241,000 JT	111,000 JT	436,000 JT	163,000 JT	556,000 JT	39,500 JT	203,000 JT	754,000 JT	1,520,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.186 JT	1.47 JT	0.604 JT	8.39 JT	0.211 JT	16.2 JT	0.0638 JT	1.74 JT	10.4 JT	27.1 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	3.74 JT	4.8 JT	2.88 JT	9.33 JT	3.08 JT	17.5 JT	3.89 JT	5.32 JT	13.6 JT	28.6 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	8.58 JT	17.3 JT	5.59 JT	16.6 JT	5.71 JT	11.6 JT	6.62 JT	12 JT	10.1 JT	18.9 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.198 JT	0.299 JT	0.207 JT	0.623 JT	0.148 JT	0.308 JT	0.187 JT	0.249 JT	0.312 JT	0.647 JT

Notes:

All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole BodyOnly, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11E-08		EPA1-SB11E-09		EPA1-SB11E-10		EPA1-SB11W-05		EPA1-SB11W-06	
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)	fillet	whole body (calculated)
X-coordinate	7644062.93	7644062.93	7643687.406	7643687.406	7643305.445	7643305.445	7645552.14	7645552.14	7645637.354	7645637.354
Y-coordinate	689439.2818	689439.2818	689713.2152	689713.2152	689983.1343	689983.1343	686305.2547	686305.2547	686200.0404	686200.0404
RiverMile	11.2	11.2	11.1	11.1	11.1	11.1	11.9	11.9	11.9	11.9
Sample Date	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	7-Oct-11	28-Sep-11	28-Sep-11	16-Sep-11	16-Sep-11
Sample Time	12:00	12:00	12:36	12:36	13:30	13:30	8:22	8:22	7:14	7:14
Sample Mass (g)	160.94	381.28	341.94	781.87	265.84	643.28	89.88	195.24	579.31	1333.2
Total PCB Congeners (RI Calc; ND=0)	1,440,000 JT	4,940,000 JT	74,400 JT	218,000 JT	131,000 JT	604,000 JT	109,000 JT	407,000 JT	80,500 JT	259,000 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	1,450,000 JT	4,940,000 JT	77,300 JT	220,000 JT	134,000 JT	606,000 JT	110,000 JT	407,000 JT	83,000 JT	260,000 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	1.19 JT	9.47 JT	0.212 JT	2.46 JT	0.198 JT	6.38 JT	1.58 JT	4.75 JT	0.272 JT	2.45 JT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	9.15 JT	20.3 JT	4.07 JT	5.96 JT	4.1 JT	9.73 JT	3.59 JT	6.74 JT	4.09 JT	5.97 JT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	15.3 JT	31.3 JT	6.87 JT	10 JT	6.93 JT	10.4 JT	5.55 JT	11.5 JT	8.43 JT	14.3 JT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.565 JT	1.23 JT	0.213 JT	0.286 JT	0.213 JT	0.324 JT	0.13 JT	0.192 JT	0.224 JT	0.333 JT

Notes: All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/L).

J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Table 5. Analytical Results for Fillet and Whole BodyOnly, Summation Groups Only
Portland Harbor Sample Receipt, Analysis, and Results Report

LocationID	EPA1-SB11W-07		EPA1-SB11W-08		NA	NA	NA	NA
Tissue	fillet	whole body (calculated)	fillet	whole body (calculated)	MEL Proof Blank	MEL Rinsate Blank 1	MEL Rinsate Blank 2	MEL Rinsate Blank 3
X-coordinate	7643703.153	7643703.153	7642440.545	7642440.545	NA	NA	NA	NA
Y-coordinate	688248.8439	688248.8439	689464.813	689464.813	NA	NA	NA	NA
RiverMile	11.4	11.4	11	11	NA	NA	NA	NA
Sample Date	28-Sep-11	28-Sep-11	28-Sep-11	28-Sep-11	23-Nov-11	30-Nov-11	8-Dec-11	8-Dec-11
Sample Time	9:20	9:20	10:12	10:12	10:10	15:45	14:30	14:45
Sample Mass (g)	44.48	106.06	210.21	677.38	NA	NA	NA	NA
Total PCB Congeners (RI Calc; ND=0)	75,600 JT	505,000 JT	279,000 JT	1,370,000 JT	0.452 JT	0.0219 JT	0.0198 JT	0.0887 JT
Total PCB Congeners (RA Calc; ND=0.5 RDL)	78,100 JT	506,000 JT	281,000 JT	1,370,000 JT	17.4 JT	16.3 JT	15.8 JT	16.1 JT
Dioxin-like PCB Congener TCDD toxicity equivalent (ND = 0)	0.0889 JT	0.572 JT	3.32 JT	15.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 2005 (Mammalian) (Calculated U = 1	4.03 JT	4.13 JT	6.57 JT	16.8 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Avian) (Calculated U = 1/2)	6.85 JT	13.5 JT	8.58 JT	20.2 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT
LWG RA Total PCB Congener TEQ 1998 (Fish) (Calculated U = 1/2)	0.197 JT	0.284 JT	0.264 JT	0.683 JT	0.32 UT	0.311 UT	0.3 UT	0.305 UT

Notes:

	All concentrations are in units of ng/kg (except for the proof and rinsate blanks on page 7 of the table, which are in units of ng/l
J	Concentration or total is estimated.
LWG	Lower Willamette Group
NA	Not applicable
ND	Nondetect
PCB	Polychlorinated biphenyl
RA	Risk assessment
RI	Remedial investigation
T	Concentration is calculated from laboratory-reported data.
TCDD	Tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
U	Result is not-detected; value reported is the reporting limit.

Appendix A

Chain of Custody Forms

Chain of Custody Forms

From: GSI Water Solutions Inc.

To: USEPA CLP LAB (KAP Technologies)

Contract # EPW11031

USEPA CLP Organics COC (LAB COPY)

DateShipped: 9/29/2011
CarrierName: FedEx
AirbillNo: 797567418237

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 1

SDG: JEAC5

No: 10-092811-121518-0001

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAC5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB06E-01	09/12/2011 08:00	S-4346.01	
JEAC6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB06E-03	09/12/2011 09:40		~~.02~~
JEAC7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB06E-05	09/12/2011 10:50		~~.03~~
JEAC8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB07E-02	09/12/2011 12:58		~~.04~~
JEAC9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08E-04	09/12/2011 15:05	S-4346.05	
JEAD0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-05	09/13/2011 07:10		.06
JEAD1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-04	09/13/2011 07:20		~~.07~~
JEAD2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-03	09/13/2011 07:40		~~.08~~
JEAD3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-02	09/13/2011 08:03	S-4346.09	
JEAD4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11E-06	09/13/2011 08:25		~~.10~~
JEAD5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB10E-03	09/13/2011 09:42		~~.11~~
JEAD6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB10E-01	09/13/2011 11:11		~~.12~~
JEAD7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB09E-04	09/13/2011 12:13		~~.13~~
			41764	JEAC5				
			S-4346	NLH 9/30/11				

NLH 10/6/11

Sample(s) to be used for Lab QC: JEAC5 - Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.
Refer to Modified Analysis #'s 2188.0 & 2189.0
Case will include further shipment to follow in approximately 1.5 weeks.

Temp: 4.1°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-FedEx Ship	Eric Carroll	9-29-11									
									Vishnu Davlapur	9/30/11	10:30

Contract # EPW11031

USEPA CLP Organics COC (LAB COPY)

DateShipped: 9/29/2011
CarrierName: FedEx
AirbillNo: 797567418362

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 2

SDG: JEAC5

No: 10-092811-124152-0002

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAD8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-01	09/14/2011 08:29	S-4346	.14
JEAD9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB04E-10	09/14/2011 09:22		.15
JEAE0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB04E-08	09/14/2011 10:22		~~.16~~
JEAE1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB03E-04	09/15/2011 07:24	S-4346	.17
JEAE2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB02E-04	09/15/2011 10:11		.18
JEAE3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SBMC-01	09/15/2011 19:15		~~.19~~
JEAE4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SBMC-04	09/15/2011 19:25	S-4346	.20
JEAE5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SBMC-03	09/15/2011 19:50		
JEAE6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB11W-04	09/16/2011 08:35		
JEAE7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB04W-02	09/16/2011 13:56		
JEAE8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06E-06	09/16/2011 14:25	S-4347	.04
JEAE9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB03W-05	09/16/2011 14:25		
JEAF0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB03W-03	09/16/2011 15:30	S-4347	.06

41764 JEAC5
S-4346 NLH 9/30/11

NLH 10/6/11

Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.
Refer to Modified Analysis #'s 2188.0 & 2189.0
Case will include further shipment to follow in approximately 1.5 weeks.

Temp: 3.9°

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-Fed Ex Ship	Erin Carroll	9/29/11									
									Aurelio Tee	9/30/11	10:30

Contract # EPW11031

USEPA CLP Organics COC (LAB COPY)

DateShipped: 9/29/2011
CarrierName: FedEx
AirbillNo: 797567418340

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

SDG: JEAE5 C NLH 10/6/11

No: 10-092811-124318-0003

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAF1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB03W-01	09/16/2011 16:05	~~S-4347~~	~~07~~
JEAF2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB02W-05	09/16/2011 16:25	S-4347	08
JEAF3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB02W-02	09/16/2011 17:00		~~09~~
JEAF4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB11E-01	09/19/2011 07:10		~~10~~
JEAF5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB09W-03	09/19/2011 09:25		~~11~~
JEAF6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB08E-01	09/19/2011 18:20		~~12~~
JEAF7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB03E-05	09/20/2011 07:52		~~13~~
JEAF8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB06W-05	09/20/2011 15:10		~~14~~
JEAF9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SBSIL-01	09/21/2011 07:05		~~15~~
JEAG0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB06E-04	09/21/2011 11:42		~~16~~
JEAG1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB06W-02	09/21/2011 12:00		~~17~~
JEAG2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	3 (Wet ice) (1)	EPA1-SB02E-01	09/22/2011 08:28		~~18~~
				41764	JEAC5			
				S-4346	NLH 9/30/11			

NLH 10/6/11

Sample(s) to be used for Lab QC: JEAF4 - Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Case will include further shipment to follow in approximately 1.5 weeks.

Temp: 3.8°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-Fed EX Ship	Eric Cundall	9/29/2011									
									[signature]	9/30/11	10:30

4

Contract # EPW11031

USEPA CLP Organics COC (LAB COPY)

DateShipped: 9/29/2011
CarrierName: FedEx
AirbillNo: 797567418237

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 4

SDG: JEAE5 C NLH 10/6/11

No: 10-092811-124337-0004

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAG3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB03E-08	09/22/2011 15:50	S-4347	.19
JEAG4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB07E-01	09/22/2011 18:00		~~.20~~
JEAG5	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-03	09/23/2011 16:35	S-4348	.01
JEAG6	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-02	09/23/2011 18:20		.02
JEAG7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-01	09/26/2011 16:33		.03
JEAG8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-04	09/26/2011 16:45		
JEAG9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB15E-05	09/26/2011 16:55		
JEAH0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB17W-01	09/26/2011 17:25	S-4348	.06
JEAH1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB17W-02	09/26/2011 18:26		.07
JEAH2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB17W-03	09/26/2011 18:40	S-4348	.08
JEAH3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB16W-01	09/26/2011 19:08		
JEAH4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	4 (Wet ice) (1)	EPA1-SB16W-02	09/26/2011 19:15	S-4348	.09

NLH 10/6/11

41764 JEAE5
S-4347 NLH 9/30/11

Sample(s) to be used for Lab QC: JEAG9 - Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.
Refer to Modified Analysis #'s 2188.0 & 2189.0
Case will include further shipment to follow in approximately 1.5 weeks.

Temp: 4.0°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-Fed Ex Shipping	Erin Cannell	9/29/2011									
									Angelica Sloe	9/30/11	10:30

EPW11031

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/11/2011
CarrierName: FedEx
AirbillNo: 795277079238

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 1

No: 10-101011-100930-0005

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAH5	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08W-05	09/27/2011 10:00		
JEAH6	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08W-01	09/27/2011 11:33		
JEAH7	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11W-05	09/28/2011 08:22		
JEAH8	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB10E-04	09/28/2011 12:57		
JEAH9	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB09E-05	09/28/2011 14:13		
JEAJ0	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB05W-03	09/28/2011 15:11		
JEAJ1	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB04E-06	09/29/2011 17:10		
JEAJ2	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB04E-02	09/29/2011 18:34		
JEAJ3	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB05W-02	10/02/2011 12:50		

Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.
Refer to Modified Analysis #'s 2188.0 & 2189.0

Temp: 0°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1-FedEx Shipment	Eric Cernoll										
									[illegible]	10/12/11	11:15

EPW 11031

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/11/2011
CarrierName: FedEx
AirbillNo: 795277079249

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 2

No: 10-101011-102249-0006

Lab: KAP Technologies Inc.
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAJ4	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-03	10/03/2011 09:32		
JEAJ5	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-02	10/03/2011 09:54		
JEAJ6	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-05	10/03/2011 15:30		
JEAJ7	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-06	10/03/2011 15:42		
JEAJ8	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-04	10/03/2011 16:15		
JEAJ9	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06E-02	10/03/2011 17:30		
JEAK0	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06W-04	10/06/2011 16:45		
JEAK1	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-04	10/06/2011 18:10		
JEAK2	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06W-01	10/07/2011 08:20		

Sample(s) to be used for Lab QC: JEAJ4 - Special Instructions: All samples to be homogenized, split into two aliquots: one analyzed by KAP and one transshipped to Pace Analytical.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Temp. 0.5°C

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
1. Fed Ex Shipping	Eric Cornwell	10/11/2011	TO Fed Ex		12:00						
									Aundre Roe	10/12/11	11:15

GSI Water Solutions, Inc.

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Date: 10/11/2011

Lab submittal:

Project Name: Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study
Project Number: 0110.037.
Project Manager: Kevin Parrett
Company/Address:
55 SW Yamhill Street
Portland, OR
Phone: (503) 239-8799
Fax: (503) 239-8940

Analysis Requested*

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix	Number of Containers	REMARKS
SB10E-06	9/29/2011	13:50	USACE	Fish	1	11422500
SB11W-07	9/29/2011	9:20	USACE	Fish	1	2501
SB06E-11	10/9/2011	16:15	USACE	Fish	1	2502
SB08W-06	10/8/2011	16:50	USACE	Fish	1	2503
SB11E-08	10/8/2011	12:00	USACE	Fish	1	2504
SB06E-08	10/9/2011	14:40	USACE	Fish	1	2505
SB06E-09	10/9/2011	15:49	USACE	Fish	1	2506

Relinquished By	Received By
Erin Carroll	JAMHA F. WILLIAMS
Signature: Erin Carroll	Signature
Printed Name: GSI Water Solutions	Printed Name: ERDC - EERT
Firm	Firm
10/11/11 9:30	13 OCT. 2011 1347
Date/Time	Date/Time

Relinquished By	Received By
Signature	Signature
Printed Name	Printed Name: Karen Norton
Firm	Firm: Tecklan
Date/Time	Date/Time: 10/18/11 1210

10/11/20118:52 AM

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day
___ Standard (10 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results

Requested Report Date _____

REPORT REQUIREMENTS

___ I. Routine Report
___ II. Report (includes DUP, MS MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ RWQCB (MDLs/PQLs/TRACE#)

INVOICE INFORMATION

P.O. # _____
Bill to: Same as above

SAMPLE RECEIPT

Shipping VIA: _____
Shipping #: _____
Condition: _____
Lab No: _____

Special Instructions/Comments:

*Age determination by scales and otoliths. Gut content inspection. Removal of fillet. Weigh fillet and carcass and place in separate containers. Transship fillet and carcass to EPA CLP KAP for homogenization and analysis of Pesticides and SVOCs. KAP will transship to PACE for PCB congener analysis. Contact Jennifer Crawford (EPA R10 - 206-553-6261) for coordination of shipping to KAP. Contact Karl Gustavson (USACE - 703-603-8753) for information on age/gut/fillet.

GSI Water Solutions, Inc.

GSI Water Solutions, Inc.

CHAIN OF CUSTODY / LABORATORY ANALYSIS REQUEST FORM

Date: 10/11/2011

Lab submittal:

Project Name: Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study
Project Number: 0110.037.
Project Manager: Kevin Parrett
Company/Address:
55 SW Yamhill Street
Portland, OR
Phone: (503) 239-8799
Fax: (503) 239-8940

Analysis Requested*

Sample I.D.	Date	Time	LAB I.D.	Sample Matrix	Number of Containers	REMARKS
SB11E-10	10/8/2011	13:30	USACE	Fish	1	11422507
SB06E-10	10/9/2011	16:10	USACE	Fish	1	2508
SB05W-04	9/23/2011	12:01	USACE	Fish	1	2509
SB11W-08	9/29/2011	10:12	USACE	Fish	1	2510
SB11E-07	9/20/2011	7:05	USACE	Fish	1	2511
SB11E-09	10/8/2011	12:36	USACE	Fish	1	2512
SB11W-06	9/17/2011	7:14	USACE	Fish	1	2513

Relinquished By	Received By
Erin Carroll	
Signature: Erin Carroll	Signature: JAMMA F. WILLIAMS
Printed Name: GSI Water Solutions	Printed Name: ERDC - EERT
Firm: 10/11/11 9:30	Firm: 12 OCT. 2011 1400
Date/Time	Date/Time

Relinquished By	Received By
Signature	Signature
Printed Name	Printed Name: Karen Norton
Firm	Firm: TechLaw
Date/Time	Date/Time: 10/18/11 1210

10/11/20118:52 AM

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day
___ Standard (10 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results

Requested Report Date _____

REPORT REQUIREMENTS

___ I. Routine Report
___ II. Report (includes DUP, MS MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ RWQCB (MDLs/PQLs/TRACE#)

INVOICE INFORMATION

P.O. # _____
Bill to: Same as above

SAMPLE RECEIPT

Shipping VIA: _____
Shipping #: _____
Condition: _____
Lab No: _____

Special Instructions/Comments:

*Age determination by scales and otoliths . Gut content inspection. Removal of fillet. Weigh fillet and carcass and place in separate containers. Transship fillet and carcass to EPA CLP KAP for homogenization and analysis of Pesticides and SVOCs. KAP will transship to PACE for PCB congener analysis. Contact Jennifer Crawford (EPA R10 - 206-553-6261) for coordination of shipping to KAP. Contact Karl Gustavson (USACE - 703-603-8753) for information on age/gut/fillet.

GSI Water Solutions, Inc.

Chain of Custody Forms

From: USEPA CLP LAB (KAP Technologies)

To: USEPA Region 10 Laboratory (Manchester Environmental Laboratory [MEL])

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797638422199

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 1

No: 10-101811-134333-0007

Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAH5	SOIL/ EC	FISH	SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08W-05	09/27/2011 10:00		11422514
JEAH6	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB08W-01	09/27/2011 11:33		2515
JEAH7	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB11W-05	09/28/2011 08:22		2516
JEAH8	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB10E-04	09/28/2011 12:57		2517
JEAH9	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB09E-05	09/28/2011 14:13		2518
JEAJ0	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB05W-03	09/28/2011 15:11		2519
JEAJ1	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB04E-06	09/29/2011 17:10		2520
JEAJ2	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB04E-02	09/29/2011 18:34		2521
JEAJ3	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	1 (Wet ice) (1)	EPA1-SB05W-02	10/02/2011 12:50		2522

Special Instructions: This cooler is 1 of 2, and contains fish samples submitted to KAP on 10/12/11. These samples were mistakenly filleted instead of homogenized.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	K Nuston	10/21/11	9:15						

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797638422339

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 2

No: 10-101811-140924-0008

Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAJ4	SOIL/ EC	Fish	SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-03	10/03/2011 09:32		1142523
JEAJ5	SOIL/ EC		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-02	10/03/2011 09:54		2524
JEAJ6	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-05	10/03/2011 15:30		2525
JEAJ7	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-06	10/03/2011 15:42		2526
JEAJ8	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB07E-04	10/03/2011 16:15		2527
JEAJ9	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06E-02	10/03/2011 17:30		2528
JEAK0	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06W-04	10/06/2011 16:45		2529
JEAK1	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB05E-04	10/06/2011 18:10		2530
JEAK2	SOIL/ KP		SVOAS/PEST/SVOAs by SIM(21)	2 (Wet ice) (1)	EPA1-SB06W-01	10/07/2011 08:20		2531

Sample(s) to be used for Lab QC: JEAJ4 - Special Instructions: This cooler is 2 of 2, and contains fish samples submitted to KAP on 10/12/11. These samples were mistakenly filleted instead of homogenized.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	[illegible]	10/21/11	9:15						

USEPA CLP Organics COC (LAB COPY)
DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009
Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAC5	SOIL/ Fish		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB06E-01	09/12/2011 08:00		11422532
JEAC6	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1,N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB06E-03	09/12/2011 09:40		2533
JEAC7	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB06E-05	09/12/2011 10:50		2534
JEAC8	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1,N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB07E-02	09/12/2011 12:58		2535
JEAC9	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1,N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB08E-04	09/12/2011 15:05		2536
JEAD0	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB11E-05	09/13/2011 07:10		2537
JEAD1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB11E-04	09/13/2011 07:20		2538
JEAD2	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1,N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB11E-03	09/13/2011 07:40		2539
JEAD3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 1 (Wet ice) (2)	EPA1-SB11E-02	09/13/2011 08:03		2540
JEAD4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1,N2 1 (Wet ice) (2)	EPA1-SB11E-06	09/13/2011 08:25		2541
JEAD5	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1,N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB10E-03	09/13/2011 09:42		2542
JEAD6	SOIL/	MS/MSD	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1,N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB10E-01	09/13/2011 11:11		2543
JEAD7	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	N1,N2 1 (Wet ice), A (Wet ice) (3)	EPA1-SB09E-04	09/13/2011 12:13		2544
JEAD8	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 2 (Wet ice) (2)	EPA1-SB05E-01	09/14/2011 08:29		2545

Sample(s) to be used for Lab QC: JEAC5 - Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11	K Nuestor	10/21/11	10:10						
		16:00									

USEPA CLP Organics COC (LAB COPY)
DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009
Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAD9	SOIL/	Fish	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB04E-10	09/14/2011 09:22	1142	2546
JEAE0	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB04E-08	09/14/2011 10:22		2547
JEAE1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 2 (Wet ice) (2)	EPA1-SB03E-04	09/15/2011 07:24		2548
JEAE2	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB02E-04	09/15/2011 10:11		2549
JEAE3	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SBMC-01	09/15/2011 19:15		2550
JEAE4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 2 (Wet ice) (2)	EPA1-SBMC-04	09/15/2011 19:25		2551
JEAE5	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SBMC-03	09/15/2011 19:50		2552
JEAE6	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB11W-04	09/16/2011 08:35		2553
JEAE7	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB04W-02	09/16/2011 13:56		2554
JEAE8	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB06E-06	09/16/2011 14:25		2555
JEAE9	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 2 (Wet ice) (2)	EPA1-SB03W-05	09/16/2011 14:25		2556
JEAF0	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	2 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB03W-03	09/16/2011 15:30		2557
JEAF1	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB03W-01	09/16/2011 16:05		2558

Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	KNorton	10/21/11	10:10						

USEPA CLP Organics COC (LAB COPY)
DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009
Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAF2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 3 (Wet ice) (2)	EPA1-SB02W-05	09/16/2011 16:25	1142	2558
JEAF3	SOIL/ fish		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB02W-02	09/16/2011 17:00	1142	2559
JEAF4	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB11E-01	09/19/2011 07:10		2560
JEAF5	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB09W-03	09/19/2011 09:25		2561
JEAF6	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB08E-01	09/19/2011 18:20		2562
JEAF7	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB03E-05	09/20/2011 07:52		2563
JEAF8	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB06W-05	09/20/2011 15:10		2564
JEAF9	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SBSIL-01	09/21/2011 07:05		2565
JEAG0	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB06E-04	09/21/2011 11:42		2566
JEAG1	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB06W-02	09/21/2011 12:00		2567
JEAG2	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	3 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB02E-01	09/22/2011 08:28		2568
JEAG3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB03E-08	09/22/2011 15:50		2569
JEAG4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB07E-01	09/22/2011 18:00		2570

Sample(s) to be used for Lab QC: JEAF4 - Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	KNorton	10/21/11	10:10						

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009

Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEAG5	SOIL/	Fish	SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB15E-03	09/23/2011 16:35	1142	2571
JEAG6	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB15E-02	09/23/2011 18:20		2572
JEAG7	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB15E-01	09/26/2011 16:33		2573
JEAG8	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB15E-04	09/26/2011 16:45		2574
JEAG9	SOIL/	MS/MSD	SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB15E-05	09/26/2011 16:55		2575
JEAH0	SOIL/		SVOAs/Pest/SVOAs by SIM(21), Archival extra volume	4 (Wet ice), A (Wet ice) (3) N1, N2	EPA1-SB17W-01	09/26/2011 17:25		2576
JEAH1	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB17W-02	09/26/2011 18:26		2577
JEAH2	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB17W-03	09/26/2011 18:40		2578
JEAH3	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB16W-01	09/26/2011 19:08		2579
JEAH4	SOIL/		SVOAs/Pest/SVOAs by SIM(21)	N1 4 (Wet ice) (2)	EPA1-SB16W-02	09/26/2011 19:15		2580
JEB05	/		SVOAs/Pest/SVOAs by SIM(21)	A (Wet ice) (1)	Rinstae on KAP Prep logbook page 2: JEB05	09/30/2011 00:00		2581
JEB06	/		SVOAs/Pest/SVOAs by SIM(21)	A (Wet ice) (1)	Rinsate on KAP Prep logbook page 4: JEB06	09/30/2011 00:00		2582

RINSATES NOT RECEIVED

Sample(s) to be used for Lab QC: JEAG9 - Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization.

Refer to Modified Analysis #'s 2188.0 & 2189.0

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	K Norton	10/21/11	10:10						

USEPA CLP Organics COC (LAB COPY)

DateShipped: 10/19/2011
CarrierName: FedEx
AirbillNo: 797639807266

CHAIN OF CUSTODY RECORD

Case #: 41764
Cooler #: 3

No: 10-101811-170652-0009

Lab: EPA Region 10 Laboratory (MEL)
Lab Contact: Karen Norton
Lab Phone: 360-871-8760

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
JEB07	/		SVOAs/Pest/SVOAs by SIM(21)	A (Wet ice) (1)	Rinsate on KAP Prep logbook page 5: JEB07	09/30/2011 00:00	114225834	
			* RINSATES NOT RECEIVED					

Special Instructions: This cooler contains the extra sample volume for 32 samples following homogenization and extraction of the PEST, SVOA, and PCB congeners/lipids sample fractions. This cooler also contains the PEST and SVOA sample volume extractions for 50 samples, as well as 3 rinsate samples collected during homogenization. Refer to Modified Analysis #'s 2188.0 & 2189.0	**Shipment for Case Complete? Y** **Samples Transferred From Chain of Custody #**
Analysis Key	

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Nicole Hogue	10/19/11 16:00	K Norton	10/21/11	10:10						

Chain of Custody Forms

From: USEPA Region 10 Laboratory (MEL)

To: USEPA Headquarters Laboratory (Pace Analytical Services [Pace])

#1

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-078	SFP-013A		
Account Code	**EPA Project Manager/phone number**	**Check all that apply**	
TR2B/108T	Younus Burhan 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
Scott Unze 612 607-6383

DM

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W Samples frozen prior to shipment

☒ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis - All remaining sample material will be returned to Region 10 after analysis

EPA Sample number (Yr Wk Sequence)	Sampling Date & Time (Yr Mo Day Time)	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)		
11462600	110928 1350	70										SB10E-06/11422500 ERDC				X																
01																X																
02	110928 0920	70										SB11W-07/11422501 ERDC				X																
03																X																
04	110108 1615	70										SB06E-11/11422502 ERDC				X																
05																X																
06	110107 1650	70										SB08W-06/11422503 ERDC				X																
07																X																
10	110108 1440	70										SB06E-08/11422505 ERDC				X																
11																X																
12	110108 1549	70										SB06E-09/11422506 ERDC				X																
13																X																
14	110107 1330	70										SB11E-10/11422507 ERDC				X																
15																X																
16	110108 1610	70										SB06E-10/11422508 ERDC				X																
17																X																

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by **Mobile Lab** for Field Analysis (Signature)	Date	Time
Shipped by (Signature)	Date	Time	Received for **lab** by (Signature)	Date	Time
[signature]	1/17/12	10:00			

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#2

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-078	SFP-013A		
Account Code	**EPA Project Manager/phone number**	**Check all that apply**	
TR2B/108T	Vaunus Burton 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis, MN 55414
PM: Scott Unze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:
A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab
[2] $Na_2S_2O_3$ if required by plan.
W - Sample frozen prior to shipment
☐ Check here if the cooler is iced
④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits
Retain all sample material for return

Sampler's comments for the laboratory:
PCB Congener Analysis – All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
11	46	261	18	11	09	22	1201	70									SB05W-04/11422509 ERDC				X																	
			19																		X																	
			20	11	09	28	1012	70									SB11W-08/11422510 ERDC				X																	
			21																		X																	
			22	11	09	19	0705	70									SB11E-07/11422511 ERDC				X																	
			23																		X																	
			24	11	10	07	1236	70									SB11E-09/11422512 ERDC				X																	
			25																		X																	
			26	11	09	16	0714	70									SB11W-06/11422513 ERDC				X																	
			27																		X																	
			28	11	09	27	1000	70									SB08W-05/11422514/JEAH5				X																	
			29																		X																	
			30	11	09	27	1133	70									SB08W-01/11422515/JEAH6				X																	
			31																		X																	
			32	11	09	28	0822	70									SB11W-05/11422516/JEAH7				X																	
			33																		X																	

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by **Mobile Lab** for Field Analysis (Signature)	Date	Time
Shipped by (Signature) [signature]	Date 1/17/12	Time 10:00	Received for **lab** by (Signature)	Date	Time

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#3

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
P.0107745 EP-W-07-078	SPP-013A		

Account Code	EPA Project Manager/phone number	Check all that apply
TR2B/ 108T	Younus Burhan 703 990-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). *Mark* (R) *after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
PM Scott Lunze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid², then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

²$Na_2S_2O_3$ if required by plan.

Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis – All remaining sample material will be returned to Region 10 after analysis

EPA Sample number (Yr Wk Sequence)	Sampling Date & Time (Yr Mo Day Time)	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB (Congener)	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)		
11 46 34	11 09 28 1257	70										SB10E-04/11422517/JEAH8				X																
35	" " " "															X																
36	11 09 28 1413	70										SB09E-05/11422518/JEAH9				X																
37																X																
40	11 09 29 1710	70										SB04E-06/11422520/JEAJ1				X																
41																X																
42	11 09 29 1834	70										SB04E-02/11422521/JEAJ2				X																
43																X																
44	11 10 02 1250	70										SB05W-02/11422522/JEAJ3				X																
45																X																
46	11 10 03 0932	70										SB05E-03/11422523/JEAJ4				X																
47																X																
50	11 10 03 1530	70										SB07E-05/11422525/JEAJ6				X																
51																X																
52	11 10 03 1542	70										SB07E06/11422526/JEAJ7				X																
53																X																

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by **Mobile Lab** for Field Analysis (Signature)	Date	Time
Shipped by (Signature)	Date	Time	Received for **lab** by (Signature)	Date	Time
[signature]	1/17/12	10:00			

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy;
Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#4

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-078	SFP-013A		

Account Code	EPA Project Manager/phone number	Check all that apply
TR~~08~~/ 108T	Younus Burhan 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
P.O. Scott Unze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se.	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis — All remaining sample material will be returned to Region 10 after analysis

EPA Sample number (Yr Wk Sequence)	Sampling Date & Time (Yr Mo Day Time)	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2-NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
114624 54	110 03 1615	70										SB07E-04/11422527/JEAJ8				X																	
55																X																	
56	110 03 1730	70										SB06E-02/11422528/JEAJ9				X																	
57																X																	
58	110 06 1645	70										SB06W-04/11422529/JEAK0				X																	
59																X																	
60	110 06 1810	70										SB05E-04/11422530/JEAK1				X																	
61																X																	
62	110 07 0820	70										SB06W-01/11422531/JEAK2				X																	
63																X																	

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by **Mobile Lab** for Field Analysis (Signature)	Date	Time
Shipped by (Signature)	Date	Time	Received for **lab** by (Signature)	Date	Time
[signature]	1/17/12	10:00			

360 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Project Name: P01077045 Primary Contract # EP-W-07-078	Project Code: SPP-013A	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
Account Code: TR2B/108T	EPA Project Manager/phone number: Younus Burhan (703) 390-0657	Check all that apply: ☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis, MN 55414
P.O. Scott Wnze (612) 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W - _____

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits

Sampler's comments for the laboratory:

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB (Congener)	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)	
11	46	2664	11	11	23	1010	10										MEL Proof Blank - Body + Fillet				X															
		2665	11	11	30	1545	10										MEL Rinsate Blank - 1130B				X															
		2666	11	12	08	1445	10										MEL Rinsate Blank - 1208F				X															
		2667	11	12	08	1430	10										MEL Rinsate Blank - 1208B				X															

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature) K Noll (360) 871-8760	Date 1/17/12	Time 10:00	Received for lab by (Signature)	Date	Time

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

Report No....10180867_1668C

Sample Custody & Analysis Required Form

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Revision 1

Primary Contract #: 10180867

Project Name	PO 107745 EPW-07-078
Project Code	SFP-013A
Method of Shipment/carrier	
Airbill Number (if known prior to sealing):	
Account Code	TR2B/108T
EPA Project Manager/phone number	Yvonne Buchan 703 308-0657
Check all that apply	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
Sech Wize 612 607-6333

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits
Retain all sample material for return

Sampler's comments for the laboratory:
PCB Congener Analysis - All remaining sample material will be returned to Region 10 after analysis

W Samples frozen prior to shipment
☑ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
1	1	46	2	6	00	11	09	28	1350	70							SB10E-02/11422500 ERDC				X																	001
					01																																	
					02	11	09	28	0920	70							SB11W-03/11422501 ERDC				X																	002
					03																																	003
					04	11	10	08	1615	70							SB12E-11/11422502 ERDC				X																	004
					05																																	005
					06	11	10	07	1650	70							SB08W-04/11422503 ERDC				X																	006
					07																																	007
					10	11	10	08	1440	70							SB06E-05/11422505 ERDC				X																	008
					11																																	009
					12	11	10	08	1549	70							SB04E-04/11422506 ERDC				X																	010
					13																																	011
					14	11	10	07	1350	70							SB11E-10/11422507 ERDC				X																	012
					15																																	013
					16	11	10	08	1610	70							SB12E-10/11422508 ERDC				X																	014
					17																																	015
																					X																	016

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature)	Date 11/11/12	Time 10:20	Received for lab by (Signature)	Date	Time

(360) 871-8700

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Revision 1

Primary Contract # 10180829

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
10107745 EP-W-07-078	SFP-0134		

Account Code	EPA Project Manager/phone number
TR2B/ 10ST	Yaunes Burhan 503 390-0657

Check all that apply: ☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis, MN 55414
Scott Urze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W - Sample frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits
Return all sample material for return

Sampler's comments for the laboratory:
PCB Congener Analysis — All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	VOA	BNA	Pest	PCB Congener	PAH	CLP	Selected	Mercury	E. Coli	F. Coliform	T. Coliform	TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses				
11	46	261	8	11	09	22	1201	70									SB05W-04/11422509 ERDC				X																		001
			19																		X																		
			20	11	09	28	1012	70									SB11W-08/11422510 ERDC				X																		002
			21																		X																		
			22	11	09	19	0705	70									SB11E-07/11422511 ERDC				X																		003
			23																		X																		
			24	11	10	07	1236	70									SB11E-07/11422512 ERDC				X																		004
			25																		X																		
			26	11	09	16	0714	70									SB11W-06/11422513 ERDC				X																		005
			27																		X																		
			28	11	09	27	1020	70									SB08W-03/11422514/JEAH5				X																		006
			29																		X																		
			30	11	09	27	1135	70									SB08W-01/11422515/JEAH6				X																		007
			31																		X																		
			32	11	09	28	0822	70									SB11W-05/11422516/JEAH7				X																		008
			33																		X																		

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
			[illegible] / Pace	11/15/12	09:26
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature) [illegible]	Date 11/7/12	Time 1000	Received for lab by (Signature)	Date	Time

(360) 871-8720

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:
T=0.0

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

Report No.. 10180829_1668C
Dist:

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Primary Contract # 10180830

Sample Custody & Analysis Required Form

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

10160830

Revision 1

Project Name: D0107745 EP-W-01-018	Project Code: SFP-013A	Method of Shipment/carrier:	Airbill Number (if known prior to sealing):
Account Code: TR2B1 108T	EPA Project Manager/phone number: Volunie Fulham 703 370-0657	Check all that apply: ☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
Scott Lunze 612 607-6353

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:
A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab
[2] $Na_2S_2O_3$ if required by plan.

W - Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits
Return all sample material for return

Sampler's comments for the laboratory:
PCB Congener Analysis - All remaining sample material will be returned to Region 10 after analysis

EPA Sample number (Yr Wk Sequence)	Sampling Date & Time (Yr Mo Day Time)	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB (congener)	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E Coli	F Coliform	T Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)		
11 46 34	11 09 28 1257	70										SB10E-04/11422517/JEAH8				X																01
35																X																02
36	11 09 28 1413	70										SB07E-05/11422518/JEAH9				X																03
37																X																04
40	11 09 29 1710	70										SB04E-04/11422520/JEAJ1				X																05
41																X																06
42	11 09 29 1834	70										SB04E-02/11422521/JEAJ2				X																07
43																X																08
44	11 10 02 1250	70										SB03W-02/11422522/JEAJ3				X																09
45																X																10
46	11 10 03 0932	70										SB05E-03/11422523/JEAJ4				X																11
47																X																12
50	11 10 03 1530	70										SB07E-03/11422525/JEAJ6				X																13
51																X																14
52	11 10 03 1542	70										SB07E-04/11422526/JEAJ7				X																15
53																X																16

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time T=0.0°C
Shipped by (Signature) FINAL (360) 311-8160	Date 1/17/12	Time 10:00	Received for lab by (Signature) [illegible] / Pace	Date 1-18-12	Time 0920

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

Report No. 10180830_1668C

Page 7 of 1529

#4

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

Project Name: PO 107745 EP-W-07-073	Project Code: SFP-013A	Method of Shipment/carrier: 101808326	Airbill Number (if known prior to sealing):
Account Code: TR08/108T	EPA Project Manager/phone number: Yaunus Burton 703 310-0657	Check all that apply: ☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
Scott Unze 612 607-6353

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
~~40~~ Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:
A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab
[2] $Na_2S_2O_3$ if required by plan.

W Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits
Return all sample material for return

Sampler's comments for the laboratory:
PCB Congener Analysis — All remaining sample material will be returned to Region 10 after analysis

EPA Sample number (Yr Wk Sequence)	Sampling Date & Time (Yr Mo Day Time)	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
11 46 2 4 54	11 10 03 16 15	70										SB07E-04/11422527/JEA58				X																	
55																																	
56	11 10 03 17 30	70										SB06E-03/11422528/JEA57				X																	
57																																	
58	11 10 04 16 45	70										SB00W-04/11422529/JEA60				X																	
59																																	
60	11 10 04 18 10	70										SP00E-04/11422530/JEA61				X																	
61																																	
62	11 10 07 08 20	70										SB00W-01/11422531/JEA62				X																	
63																																	

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
			[illegible] Pace	1/18/12	920
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature) [illegible]	Date 1/17/12	Time 10:00	Received for lab by (Signature) [illegible]	Date	Time

360-891-8766

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

Custody Seals Intact: ☑ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

Report No. 10180826_1668C Revision 1 Page 7 of 1106

Region 10, 1200 Sixth Avenue, Seattle, WA 98101

112 8

Sample Custody & Analysis Required Form

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Revision 1

Project Name	10077045 Primary Contract # EP-W-07-078
Project Code	SFP-0134
Method of Shipment/carrier	
Airbill Number (if known prior to sealing):	1-18-10180867 10180870
Account Code	TR2B1 108T
EPA Project Manager/phone number	Younus Burhan (703) 390-0657
Check all that apply	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis, MN 55414
Scott Wize (612) 607-6333

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W - _____

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits

Sampler's comments for the laboratory:

EPA Sample number (Yr Wk Sequence)	Sampling Date & Time (Yr Mo Day Time)	Matrix ①	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB (Wipe)	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E. Coli	T. Coliform	F. Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
11 46 2664	11 11 23 1010	10				MEL Proof Blank - Body + Fillet				X																	01
2665	11 11 30 1545	10				MEL Rinsate Blank 1130B				X																	02
2666	11 12 08 1445	10				MEL Rinsate Blank 1208F				X																	03
2667	11 12 08 1430	10				MEL Rinsate Blank 1208B				X																	04

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
			[signature]	11/8/12	9:20
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature) [signature] (360) 871-8700	Date 11/7/12	Time 10:00	Received for lab by (Signature)	Date	Time

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:

FR 0°C

Custody Seals Intact: ☐ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

Report No. 10180870_1668C

Page 7 of 487

Chain of Custody Forms

From: USEPA Headquarters Laboratory (Pace)

To: USEPA Region 10 Laboratory (MEL)

#1

EPA EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #: 10180867

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
PO 107745 EP-W-07-078	SFP-013A		
Account Code	**EPA Project Manager/phone number**	**Check all that apply**	
TR28/108T	Yaunes Burhan 703 390-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). *Mark* (R) *after name of principal recorder.*

Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
Scott Unze 612 607-6383

DM

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ *if required by plan.*

W Samples frozen prior to shipment

☒ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*

Retain all sample material for return

Sampler's comments for the laboratory:

PCB Congener Analysis - All remaining sample material will be returned to Region 10 after analysis

EPA Sample number Yr	Wk	Sequence	Sampling Date & Time Yr	Mo	Day	Time	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse) VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse) CLP	Selected	Mercury	Micro (see reverse) E Coli	F. Coliform	T. Coliform	General Chemistry (see reverse) TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)			
1	1	46 2600	11	09	28	1350	70										SB10E-06/11422500 ERDC				X																		001
		01																			X																		002
		02	11	09	28	0920	70										SB11W-07/11422501 ERDC				X																		003
		03																			X																		004
		04	11	10	08	1615	70										SB06E-11/11422502 ERDC				X																		005
		05																			X																		006
		06	11	10	07	1650	70										SB08W-06/11422503 ERDC				X																		007
		07																			X																		008
		10	11	10	08	1440	70										SB06E-08/11422505 ERDC				X																		009
		11																			X																		010
		12	11	10	08	1549	70										SB06E-09/11422506 ERDC				X																		011
		13																			X																		012
		14	11	10	07	1330	70										SB11E-10/11422507 ERDC				X																		013
		15																			X																		014
		16	11	10	08	1610	70										SB06E-10/11422508 ERDC				X																		015
		17																			X																		016

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by **Mobile Lab** for Field Analysis (Signature)	Date	Time
Shipped by (Signature) [signature]	Date 11/17/12	Time 10:00	Received for lab by (Signature) [signature]	Date 7/18/12	Time 1230

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab: Good

Custody Seals Intact: ☐ yes ☐ no ☒ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#2

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

Form Effective Date: July 2005

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Revision 1

Primary Contract # 10180829

Project Name: PO 107745 EP-W-07-078	Project Code: SFP-013A
Account Code: TR2B/108T	EPA Project Manager/phone number: Vaunus Burton 703 390-0657
Method of Shipment/carrier:	Airbill Number (if known prior to sealing):
Check all that apply: ☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elmo St SE
Minneapolis, MN 55414
PM: Scott Lenze 612 607-6383

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:
A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab
[2] $Na_2S_2O_3$ if required by plan.
W - Sample frozen prior to shipment
☐ Check here if the cooler is iced
④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits
Retain all sample material for return

Sampler's comments for the laboratory:
PCB Congener Analysis – All remaining sample material will be returned to Region 10 after analysis

EPA Sample number (Yr Wk Sequence)	Sampling Date & Time (Yr Mo Day Time)	Matrix ①	#C ② P ③	#C ② P ③	#C ② P ③	#C ② P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)				
11 46 261 8	11 09 22 1201	70						SB05W-04/11422509 ERDC				X																		001
19												X																		002
20	11 09 28 1012	70						SB11W-08/11422510 ERDC				X																		003
21												X																		004
22	11 09 19 0705	70						SB11E-07/11422511 ERDC				X																		005
23												X																		006
24	11 10 07 1236	70						SB11E-09/11422512 ERDC				X																		007
25												X																		008
26	11 09 16 0714	70						SB11W-06/11422513 ERDC				X																		009
27												X																		010
28	11 09 27 1000	70						SB08W-05/11422514/JEAH5				X																		011
29												X																		012
30	11 09 27 1133	70						SB08W-01/11422515/JEAH6				X																		013
31												X																		014
32	11 09 28 0822	70						SB11W-05/11422516/JEAH7				X																		015
33												X																		016

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
			[signature] / Pace	1/18/12	09:26
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature) [signature]	Date 1/17/12	Time 10:00	Received for lab by (Signature) [signature]	Date 1/18/12	Time 1230

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:
T=0.0 Good

Custody Seals Intact: ☐ yes ☐ no ☑ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#3

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract # 10180830 10180830

Project Name	Project Code	Method of Shipment/carrier	Airbill Number (if known prior to sealing):
P.0107745 EP-W-07-078	SFP-013A		

Account Code	EPA Project Manager/phone number	Check all that apply
TR2B/ 108T	Yonnus Burhan 703 910-0657	☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential

Sampler Names (Print & Sign). *Mark* (R) *after name of principal recorder.*
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
PM Scott Unze 612 607-6353

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ *if required by plan.*

We Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: *see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits*
Return all sample material for return

Sampler's comments for the laboratory:
PCB Congener Analysis – All remaining sample material will be returned to Region 10 after analysis

EPA Sample number (Yr Wk Sequence)	Sampling Date & Time (Yr Mo Day Time)	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)				
11462634	110928 1257	70										SB10E-04/11422517/JEAH8				X																		001
35	" " " " " "															X																		002
36	110928 1413	70										SB09E-05/11422518/JEAH9				X																		003
37																X																		004
40	110929 1710	70										SB04E-06/11422520/JEAJ1				X																		005
41																X																		006
42	110929 1834	70										SB04E-02/11422521/JEAJ2				X																		007
43																X																		008
44	111002 1250	70										SB05W-02/11422522/JEAJ3				X																		009
45																X																		010
46	111003 0932	70										SB05E-03/11422523/JEAJ4				X																		011
47																X																		012
50	111003 1530	70										SB07E-05/11422525/JEAJ6				X																		013
51																X																		014
52	111003 1542	70										SB07E06/11422526/JEAJ7				X																		015
53																X																		016

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date 7/18/12	Time 12:30
Relinquished by (Signature)	Date	Time	Received by **Mobile Lab** for Field Analysis (Signature)	Date	Time T=0.0°C
Shipped by (Signature)	Date 1/17/12	Time 10:00	Received for **lab** by (Signature)	Date 1-18-12	Time 0920

(360) 871-8760

Receiving Laboratory Information Condition of Samples upon Receipt at Lab:
Good

Custody Seals Intact: ☐ yes ☐ no ☒ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

#4

EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101

Sample Custody & Analysis Required Form

EPA Manchester Laboratory, 7411 Beach Drive East, Port Orchard, WA 98366, 360-871-8700

Form Effective Date: July 2005

Revision 1

Primary Contract #

Project Name: PO 107745 EP-W-07-078	Project Code: SFP-013A	Method of Shipment/carrier: 101808216	Airbill Number (if known prior to sealing):
Account Code: TR[illegible]B / 108T	EPA Project Manager/phone number: Yannus Burton 703 390-0657	Check all that apply: ☐ Enforce/Custody ☐ Possible Toxic/Hazardous ☐ Data Confidential	

Sampler Names (Print & Sign). Mark (R) after name of principal recorder.
Ship to: Pace Analytical Services
1700 Elm St SE
Minneapolis MN 55414
P.O. Scott Unze 612 607-6363

If applicable, circle the set of selected metals:

Al	Sb	As	Ba	Be
B	Cd	Ca	Cr	Co
Cu	Fe	Pb	Mg	Mn
Mo	Ni	K	Se	Ag
Na	Sn	Tl	V	Zn

(see reverse for more to add/circle)

① Matrix Codes:
10 Water/Liquid (Total)
20 Water/Liquid (Filtered)
40 Sediment/Soil/Solid/Bulk
70 Tissue
80 Oil/Solvent
44 Air filter
42 Wipe/Swab[1]
00 _____

[1] PCB wipe is to be 10cm x 10cm (100 cm²)

#C ② enter the number of containers for each preservative type followed by the appropriate preservation code P ③:

A - HCl
B - HNO_3
C - NaOH
D - H_2SO_4
E - $Na_2S_2O_3$
F - ascorbic acid[2], then HCl
G - $Na_2S_2O_3$+EDTA
H - EDTA
N - No chemical preservation
P - Bottles pre-preserved at lab
T - To be preserved at the lab

[2] $Na_2S_2O_3$ if required by plan.

W Samples frozen prior to shipment

☐ Check here if the cooler is iced

④ Enter the letter or range of letters on each container for each group of containers with the same preservative type. Each container for each unique sample number must have a unique letter on it.

Laboratory: see the applicable QAPP, SOW and/or Analytical Support Request for specific methods and detection, reporting, and/or quantitation limits
Retain all sample material for return

Sampler's comments for the laboratory:
PCB Congener Analysis — All remaining sample material will be returned to Region 10 after analysis

EPA Sample number (Yr Wk Sequence)	Sampling Date & Time (Yr Mo Day Time)	Matrix ①	#C ②	P ③	#C ②	P ③	#C ②	P ③	#C ②	P ③	Sampler Initials	Sample/Station Description/Field Measurements	Organics (see reverse): VOA	BNA	Pest	PCB Congener	PAH	Metals (see reverse): CLP	Selected	Mercury	Micro (see reverse): E. Coli	F. Coliform	T. Coliform	General Chemistry (see reverse): TSS	TDS	BOD 5	NO2+NO3	Oil & Grease	Asbestos	Additional Write in Analyses (see reverse)
11462655	110310161 5	70										SB07E-04/11422527/JEAJ8				X														
55																														
56	110310173 0	70										SB06E-02/11422528/JEAJ9				X														
57																X														
58	110106164 5	70										SB06W-04/11422529/JEAK0				X														
59																X														
60	110106181 0	70										SB05E-04/11422530/JEAK1				X														
61																X														
62	110107082 0	70										SB06W-01/11422531/JEAK2				X														
63																X														

Chain of Custody Record

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
			[signature]	1/18/12	920
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
Relinquished by (Signature)	Date	Time	Received by Mobile Lab for Field Analysis (Signature)	Date	Time
Shipped by (Signature) [signature]	Date 1/17/12	Time 10:00	Received for lab by (Signature) [signature]	Date 7/18/12	Time 1230

Receiving Laboratory Information Condition of Samples upon Receipt at Lab: Good

Custody Seals Intact: ☑ yes ☐ no ☐ none

Distribution: White - Laboratory Copy; Yellow - Regional Sample Control Center (RSCC) Copy; Pink - Field or Office Copy

360 871-8760

Appendix B

MEL Sample Processing Forms

Field Sample ID	Original sample receiving lab	Station Location	EPA assigned ID - whole fish	Date Processed, EPA/ESAT	Staff	EPA ID - fillet* (F)	EPA ID - Carcass / Remaining Body (B)	Whole body weight,original foil wrap included (g)	Total Fish Length (mm)	Fork Length (mm)	Scales removed?	Prep Time & Filleting comments/observations
							MEL Processing Order of Operations:	1	2	3	4	5
SB10E-06	USACE ERDC	EPA1-SB10E-06	11422500	11/30/2011	LH, DJ, PK	11462600	11462601	99.61	192	180	Yes	Time 11:10
SB11W-07	USACE ERDC	EPA1-SB11W-07	11422501	11/30/2011	LH, DJ, PK	11462602	11462603	116.31	201	189	Yes	Time 10:30. External blood; blotted off fillet skin
SB06E-11	USACE ERDC	EPA1-SB06E-11	11422502	12/1/2011	LH, DJ, PK	11462604	11462605	222.42	242	230	Yes	Time 09:50
SB08W-06	USACE ERDC	EPA1-SB08W-06	11422503	11/23/2011	LH, DJ, PK	11462606	11462607	361.98	295	276	Yes	Time 13:50. Possible organ rupture. Avoided / fillet ok.
SB11E-08	USACE ERDC	EPA1-SB11E-08	11422504	11/23/2011	LH, DJ, PK	11462608	11462609	402.22	300	285	Yes	Time 10:55
SB06E-08	USACE ERDC	EPA1-SB06E-08	11422505	12/8/2011	LH, DJ, PK	11462610	11462611	413.61	295	280	Yes	Time 09:30
SB06E-09	USACE ERDC	EPA1-SB06E-09	11422506	11/23/2011	LH, DJ, PK	11462612	11462613	388.70	302	285	Yes	Time 14:30
SB11E-10	USACE ERDC	EPA1-SB11E-10	11422507	11/30/2011	LH, DJ, PK	11462614	11462615	699.25	363	340	Yes	Time 12:50
SB06E-10	USACE ERDC	EPA1-SB06E-10	11422508	12/8/2011	LH, DJ, PK	11462616	11462617	851.61	366	352	Yes	Time 11:00
SB05W-04	USACE ERDC	EPA1-SB05W-04	11422509	12/8/2011	LH, DJ, PK	11462618	11462619	847.23	390	370	Yes	Time 11:40. Bloody exterior.
SB11W-08	USACE ERDC	EPA1-SB11W-08	11422510	12/1/2011	LH, DJ, PK	11462620	11462621	730.40	390	375	Yes	Time 14:45. Body cavity full of bloody fluid, stomach may have ruptured.Fillets clean.Worms in body cavity.
SB11E-07	USACE ERDC	EPA1-SB11E-07	11422511	11/30/2011	LH, DJ, PK	11462622	11462623	1108.56	404	386	Yes	Time 16:10. External blood; blotted off fillet skin. Mature.
SB11E-09	USACE ERDC	EPA1-SB11E-09	11422512	12/8/2011	LH, DJ, PK	11462624	11462625	840.78	378	362	Yes	Time 10:25
SB11W-06	USACE ERDC	EPA1-SB11W-06	11422513	11/30/2011	LH, DJ, PK	11462626	11462627	1417.32	433	415	Yes	Time 16:50
JEAH5	CLP KAP	EPA1-SB08W-05	11422514	12/1/2011	LH, DJ, PK	11462628	11462629	208.94	233	222	No - removed in field	Time 13:00. External blood present; fillets clean.
JEAH6	CLP KAP	EPA1-SB08W-01	11422515	11/30/2011	LH, DJ, PK	11462630	11462631	721.07	360	342		Time 15:35. Mature (eggs)
JEAH7	CLP KAP	EPA1-SB11W-05	11422516	12/1/2011	LH, DJ, PK	11462632	11462633	211.07	235	295		Time 10:50. External blood; blotted off fillet skin
JEAH8	CLP KAP	EPA1-SB110E-04	11422517	11/30/2011	LH, DJ, PK	11462634	11462635	273.48	266	251		Time 13:35 Blood outside; blotted one side fillet.
JEAH9	CLP KAP	EPA1-SB09E-05	11422518	11/30/2011	LH, DJ, PK	11462636	11462637	365.57	287	272		Time 14:10 Blood outside; blotted fillet
JEAJ0	CLP KAP	EPA1-SB05W-03	11422519	11/23/2011	LH, DJ, PK	11462638	11462639	260.28	253	240	Yes	Time 11:25
JEAJ1	CLP KAP	EPA1-SB04E-06	11422520	11/30/2011	LH, DJ, PK	11462640	11462641	389.10	294	280	No - removed in field	Time 10:00
JEAJ2	CLP KAP	EPA1-SB04E-02	11422521	11/30/2011	LH, DJ, PK	11462642	11462643	370.27	285	273		Time 13:55
JEAJ3	CLP KAP	EPA1-SB05W-02	11422522	12/8/2011	LH, DJ, PK	11462644	11462645	802.70	362	350		Time 12:55. One side bloody
JEAJ4	CLP KAP	EPA1-SB05E-03	11422523	12/1/2011	LH, DJ, PK	11462646	11462647	377.91	291	278		Time 14:10. Fish head very bloody; fillets clean
JEAJ5	CLP KAP	EPA1-SB05E-02	11422524	11/23/2011	LH, DJ, PK	11462648	11462649	502.40	316	301		Time 13:30. Foil bloody, avoided and blotted fillet skin
JEAJ6	CLP KAP	EPA1-SB07E-05	11422525	12/1/2011	LH, DJ, PK	11462650	11462651	212.90	245	235		Time 10:30.
JEAJ7	CLP KAP	EPA1-SB07E-06	11422526	12/1/2011	LH, DJ, PK	11462652	11462653	519.30	322	307		Time 13:20
JEAJ8	CLP KAP	EPA1-SB07E-04	11422527	12/1/2011	LH, DJ, PK	11462654	11462655	302.71	270	255		Time 9:21
JEAJ9	CLP KAP	EPA1-SB06E-02	11422528	12/8/2011	LH, DJ, PK	11462656	11462657	760.01	363	350		Time 13:20
JEAK0	CLP KAP	EPA1-SB06W-04	11422529	12/1/2011	LH, DJ, PK	11462658	11462659	226.25	244	229		Time 11:15
JEAK1	CLP KAP	EPA1-SB05E-04	11422530	12/1/2011	LH, DJ, PK	11462660	11462661	536.50	321	304		Time 13:45
JEAK2	CLP KAP	EPA1-SB06W-01	11422531	12/8/2011	LH, DJ, PK	11462662	11462663	653.50	360	347		Time 10:05. Exterior blood in gill area
	MEL Proof Blank	body+fillet	11462664	11/23/2011	DJ, PK	N/A						Time 10:10
	MEL Rinsate Blank 1130B	1000mL body/carcass	11462665	11/30/2011	DJ, PK							Time 15:45
	MEL Rinsate Blank 1208F	fillet	11462666	12/8/2011	DJ, PK							Time 14:45.
	MEL Rinsate Blank 1208B	body/carcass	11462667	12/8/2011	DJ, PK							Time 14:30

Actual lab measured/weighed prep data Calculated weight/value from lab prep data

*Fillet = including skin and belly flap

Otolith removed for 14 ERDC fish only.

IM = Immature

6	7	8	9	10	calc=I-R	calc=P-R	calc=N+T	calc=RPD: S,U
Fillet (2) weight (g) (NO original foil)	**Fish Sex**	**Carcass/ Remaining Body weight (g) on original foil**	**Otolith removed?**	**Tare Weight original Foil (g)**	**Final Original Whole Fish Weight (g) - calc.**	**Final Carcass/ Body fish Weight (g) - calc.**	**Combined Actual Carcass/Body+ Fillet fish Weight (g) - calc.**	**RPD: Calc vs. Combined Whole Fish weight**
40.99	? IM	56.43	Yes	7.79	91.82	48.64	89.63	2.4%
44.48	? IM	70.89	Yes	9.31	107.00	61.58	106.06	0.9%
93.53	M	123.42	Yes	12.72	209.70	110.70	204.23	2.6%
131.12	F	222.60	Yes	16.95	345.03	205.65	336.77	2.4%
160.94	M	234.90	Yes	14.56	387.66	220.34	381.28	1.7%
165.25	M	237.15	Yes	19.70	393.91	217.45	382.70	2.9%
154.51	F	230.42	Yes	17.62	371.08	212.80	367.31	1.0%
265.84	M	406.09	Yes	28.65	670.60	377.44	643.28	4.2%
349.44	F	479.22	Yes	28.57	823.04	450.65	800.09	2.8%
348.52	F	482.47	Yes	21.55	825.68	460.92	809.44	2.0%
210.21	M	503.87	Yes	36.70	693.70	467.17	677.38	2.4%
470.73	F	617.65	Yes	43.33	1065.23	574.32	1045.05	1.9%
341.94	F	471.46	Yes	31.53	809.25	439.93	781.87	3.4%
579.31	F	796.99	Yes	43.10	1374.22	753.89	1333.20	3.0%
88.40	M	115.59	No	8.77	200.17	106.82	195.22	2.5%
293.40	F	412.01	No	30.03	691.04	381.98	675.38	2.3%
89.88	M	118.43	No	13.07	198.00	105.36	195.24	1.4%
110.29	F	157.50	No	15.25	258.23	142.25	252.54	2.2%
141.64	M	220.04	No	22.58	342.99	197.46	339.10	1.1%
108.01	M	148.38	No	10.94	249.34	137.44	245.45	1.6%
171.54	F	197.94	No	13.10	376.00	184.84	356.38	5.4%
148.75	F	221.48	No	23.03	347.24	198.45	347.20	0.0%
346.59	M	439.52	No	22.61	780.09	416.91	763.50	2.1%
155.69	F	215.96	No	17.92	359.99	198.04	353.73	1.8%
226.90	M	271.12	No	18.90	483.50	252.22	479.12	0.9%
84.20	M	125.47	No	9.55	203.35	115.92	200.12	1.6%
215.09	F	282.17	No	22.72	496.58	259.45	474.54	4.5%
133.25	M	167.55	No	12.61	290.10	154.94	288.19	0.7%
295.78	F	455.17	No	23.22	736.79	431.95	727.73	1.2%
96.49	M	128.79	No	11.99	214.26	116.80	213.29	0.5%
235.07	F	295.23	No	16.54	519.96	278.69	513.76	1.2%
284.80	M	353.98	No	21.15	632.35	332.83	617.63	2.4%
NA								

Appendix C

Data Validation Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

June 13, 2012

Reply to: OEA-095
Attn of: Ginna Grepo-Grove

MEMORANDUM

Subject: Data Validation Report for the full list of 209 Polychlorinated Biphenyl Congener (PCB Congeners) Analyses of Small-Mouthed Bass Tissue Samples Collected for the Portland Harbor RI/FS PACE Project Numbers: 10180829; 10180826; 10180867; 10180870

From: Ginna Grepo-Grove, R10 QA Manager
Office of Environmental Assessment, USEPA

To: Chip Humphrey, Remedial Project Manager, ECL
Matthew Lambert, Contract WAM OSRTI, HQ

CC: Younus Burhan, Project Manager, Tetratech, Inc.

The quality assurance (QA) review of the analytical data generated from the analysis of 63 fish tissue and 4 water (rinsate) samples collected from the above referenced site has been completed. These samples were analyzed for the 209 Polychlorinated Bipheny Congeners (PCB Congeners) in accordance with the Method 1668C, "Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Bio-solids and Tissue by High Resolution Gas Chromatograph (HRGC)/High Resolution Mass Spectrometer (HRMS)", April 2010 by Pace Analytical Services located in Minneapolis, MN. All sample analyses were validated following the requirements of the EPA's Stage 4 Manual Data Validation (S4VM).

The following samples were evaluated in this validation report:

Printed on Recycled Paper

ED_000959_PST_00094243-00116 5/26/2021 SEMS_0338126

Table 1 – Sample Index, Dates of Collection, Extraction and Analysis

EPA Sample No.	EPA Station Locations	Sample Description	Lab Sample No.	Collection Dates	VTSR *	Extraction Dates	Extract Clean-Up	Analysis Dates (1)
11462600	EPA1-SB10E-06	Fillet	10180867001	09/28/11	01/18/12	02/10/12	02/13/12	02/14/12
11462601	EPA1-SB10E-06	Carcass	10180867002	09/28/11	01/18/12	02/10/12	02/13/12	02/14/12
11462602	EPA1-SB11W-07	Fillet	10180867003	09/28/11	01/18/12	02/10/12	02/13/12	02/15/12
11462603	EPA1-SB11W-07	Carcass	10180867004	09/28/11	01/18/12	02/10/12	02/13/12	02/15/12
11462604	EPA1-SB06E-11	Fillet	10180867005	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462605	EPA1-SB06E-11	Carcass	10180867006	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462606	EPA1-SB08W-06	Fillet	10180867007	10/07/11	01/18/12	02/10/12	02/13/12	02/15/12
11462607	EPA1-SB08W-06	Carcass	10180867008	10/07/11	01/18/12	02/10/12	02/13/12	02/15/12
11462608	EPA1-SB11E-08	Fillet	10177246001-R	10/08/11	12/02/11	12/16/11	12/20/11	12/21/11
11462609	EPA1-SB11E-08	Carcass	10177246002-R	10/08/11	12/02/11	12/16/11	12/20/11	12/21/11
11462610	EPA1-SB06E-08	Fillet	10180867009	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462611	EPA1-SB06E-08	Carcass	10180867010	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462612	EPA1-SB06E-09	Fillet	10180867011	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462613	EPA1-SB06E-09	Carcass	10180867012	10/08/11	01/18/12	02/10/12	02/13/12	02/15/12
11462614	EPA1-SB11E-10	Fillet	10180867013	10/07/11	01/18/12	02/10/12	02/13/12	02/15/12
11462615	EPA1-SB11E-10	Carcass	10180867014	10/07/11	01/18/12	02/10/12	02/13/12	02/16/12
11462616	EPA1-SB06E-10	Fillet	10180867015	10/08/11	01/18/12	02/10/12	02/13/12	02/18/12
11462617	EPA1-SB06E-10	Carcass	10180867016	10/08/11	01/18/12	02/10/12	02/13/12	02/16/12
11462618	EPA1-SB05W-04	Fillet	10180829001-R	09/22/11	01/18/12	02/23/12	02/24/12	02/26/12
11462619	EPA1-SB05W-04	Carcass	10180829002-R	09/22/11	01/18/12	02/23/12	02/24/12	02/26/12
11462620	EPA1-SB11W-08	Fillet	10180829003-R	09/28/11	01/18/12	02/23/12	02/24/12	02/26/12
11462621	EPA1-SB11W-08	Carcass	10180829004-R	09/28/11	01/18/12	02/23/12	02/24/12	02/27/12
11462622	EPA1-SB11E-07	Fillet	10180829005-R	09/19/11	01/18/12	02/23/12	02/24/12	02/26/12
11462623	EPA1-SB11E-07	Carcass	10180829006-R	09/19/11	01/18/12	02/23/12	02/24/12	02/26/12
11462624	EPA1-SB11E-09	Fillet	10180829007-R	10/07/11	01/18/12	02/23/12	02/24/12	02/26/12
11462625	EPA1-SB11E-09	Carcass	10180829008-R	10/07/11	01/18/12	02/23/12	02/24/12	02/26/12

EPA Sample No.	EPA Station Locations	Sample Description	Lab Sample No.	Collection Dates	VTSR *	Extraction Dates	Extract Clean-Up	Analysis Dates (1)
11462626	EPA1-SB11W-06	Fillet	10180829009-R	09/16/11	01/18/12	02/23/12	02/24/12	02/26/12
11462627	EPA1-SB11W-06	Carcass	10180829010-R	09/16/11	01/18/12	02/23/12	02/24/12	02/27/12
11462628	EPA1-SB08W-05	Fillet	10180829011	09/27/11	01/18/12	02/02/12	02/06/12	02/07/12
11462629	EPA1-SB08W-05	Carcass	10180829012	09/27/11	01/18/12	02/02/12	02/06/12	02/07/12
11462630	EPA1-SB08W-01	Fillet	10180829013	09/27/11	01/18/12	02/02/12	02/06/12	02/08/12
11462631	EPA1-SB08W-01	Carcass	10180829014	09/27/11	01/18/12	02/02/12	02/06/12	02/08/12
11462632	EPA1-SB11W-05	Fillet	10180829015	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462633	EPA1-SB11W-05	Carcass	10180829016	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462634	EPA1-SB110E-04	Fillet	10180830001	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462635	EPA1-SB110E-04	Carcass	10180830002	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462636	EPA1-SB09E-05	Fillet	10180830003	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462637	EPA1-SB09E-05	Carcass	10180830004	09/28/11	01/18/12	02/02/12	02/06/12	02/08/12
11462638	EPA1-SB05W-03	Fillet	10177246003-R	09/28/11	12/02/11	12/16/11	12/20/11	12/20/11
11462639	EPA1-SB05W-03	Carcass	10177246004-R	09/28/11	12/02/11	12/16/11	12/20/11	12/20/11
11462640	EPA1-SB04E-06	Fillet	10180830005	09/29/11	01/18/12	02/02/12	02/06/12	02/08/12
11462641	EPA1-SB04E-06	Carcass	10180830006	09/29/11	01/18/12	02/02/12	02/06/12	02/08/12
11462642	EPA1-SB04E-02	Fillet	10180830007	09/29/11	01/18/12	02/02/12	02/06/12	02/08/12
11462643	EPA1-SB04E-02	Carcass	10180830008	09/29/11	01/18/12	02/02/12	02/06/12	02/08/12
11462644	EPA1-SB05W-02	Fillet	10180830009	10/02/11	01/18/12	02/02/12	02/06/12	02/08/12
11462645	EPA1-SB05W-02	Carcass	10180830010	10/02/11	01/18/12	02/02/12	02/06/12	02/09/12
11462646	EPA1-SB05E-03	Fillet	10180830011	10/03/11	01/18/12	02/02/12	02/06/12	02/09/12
11462647	EPA1-SB05E-03	Carcass	10180830012	10/03/11	01/18/12	02/02/12	02/06/12	02/09/12
11462648	EPA1-SB05E-02	Fillet	10177246005-R	10/03/11	12/02/11	12/16/11	12/20/11	12/20/11
11462649	EPA1-SB05E-02	Carcass	10177246006-R	10/03/11	12/02/11	12/16/11	12/20/11	12/21/11
11462650	EPA1-SB07E-05	Fillet	10180830013	10/03/11	01/18/12	02/02/12	02/06/12	02/09/12
11462651	EPA1-SB07E-05	Carcass	10180830014	10/03/11	01/18/12	02/02/12	02/06/12	02/14/12
11462652	EPA1-SB07E-06	Fillet	10180830015	10/03/11	01/18/12	02/02/12	02/06/12	02/15/12
11462653	EPA1-SB07E-06	Carcass	10180830016	10/03/11	01/18/12	02/02/12	02/06/12	02/14/12
11462654	EPA1-SB07E-04	Fillet	1018082601-R	10/03/11	01/18/12	02/23/12	02/24/12	02/15/12
11462655	EPA1-SB07E-04	Carcass	1018082602-R	10/03/11	01/18/12	02/23/12	02/24/12	02/26/12
11462656	EPA1-SB06E-02	Fillet	1018082603	10/03/11	01/18/12	02/02/12	02/06/12	02/07/12

EPA Sample No.	EPA Station Locations	Sample Description	Lab Sample No.	Collection Dates	VTSR *	Extraction Dates	Extract Clean-Up	Analysis Dates (1)
11462657	EPA1-SB06E-02	Carcass	1018082604-R	10/03/11	01/18/12	02/23/12	02/24/12	02/27/12
11462658	EPA1-SB06W-04	Fillet	10180826-5-R	10/06/11	01/18/12	02/23/12	02/24/12	02/25/12
11462659	EPA1-SB06W-04	Carcass	1018082606-R	10/06/11	01/18/12	02/23/12	02/24/12	02/26/12
11462660	EPA1-SB05E-04	Fillet	1018082607-R	10/06/11	01/18/12	02/23/12	02/24/12	02/25/12
11462661	EPA1-SB05E-04	Carcass	1018082608-R	10/06/11	01/18/12	02/23/12	02/24/12	02/26/12
11462662	EPA1-SB06W-01	Fillet	1018082609-R	10/07/11	01/18/12	02/23/12	02/24/12	02/26/12
11462663	EPA1-SB06W-01	Carcass	1018082610-R	10/07/11	01/18/12	02/23/12	02/24/12	02/26/12
11462664	Mix Blender Blank	Mix F/C Blender Blank	10180870001	11/23/11	01/18/12	01/25/12	01/25/12	01/30/12
11462665	Carcass Blender Blank	Carcass Blender Blank	10180870002	11/30/11	01/18/12	01/25/12	01/25/12	01/30/12
11462666	Fillet Blender Blank	Fillet Blender Blank	10180870003	12/08/11	01/18/12	01/25/12	01/25/12	01/30/12
11462667	Carcass Blender Blank	Carcass Blender Blank	10180870004	12/08/11	01/18/12	01/25/12	01/25/12	01/30/12

* VTSR – Verified Time of Sample Receipt at the laboratory

DATA QUALIFICATIONS

The following comments refer to the laboratory performance in meeting the Quality Control Specifications outlined in the Quality Assurance Project Plan for the Portland Harbor RI/FS Addendum for the Small-Mouth Bass Fish Tissue Sampling and Analysis Quality Assurance Project Plan (QAPP), and the technical specifications of Method 1668C. Some of the data quality elements were qualified using the reviewer's professional judgment. The conclusions presented herein are based on the information provided for the review.

The following QA elements were evaluated against the method specified technical acceptance criteria during data validation:

- Sample Handling and Sample Conditions Upon Receipt at the Laboratory
- Holding Time
- Instrument Performance
- Initial and Continuing Calibrations
- On-going Precision and Recovery
- Retention Time and Compound Elution
- Internal Standards Recovery
- Clean-up Standards Recovery
- Injection Standards Recovery
- Analytical Sequence and Instrument Stability
- Compound Identification
- Compound Quantitation and Detection Limits
- Blanks Analysis
- Toxicity Equivalence Quotients (TEQ)

All of the method and project specified QC and technical acceptance criteria were met by all analysis with a few exceptions below:

BLANK ANALYSES Associated results were flagged accordingly: ≥5x blank value is flagged "J", estimated; <5x Blank value = "U", non-detects.

- Target PCB congeners were detected at trace levels in the following method blanks.
    - Blank 31517 – associated with samples extracted on 2/2/12: PCB18/30, PCB 32 and PCB 20/28
    - Blank 31761 – associated with samples extracted on 2/23/12: PCB 18/30 and PCB 20/28
    - Blank 31109 - associated with samples extracted on 12/16/11: PCBs 8, 18/30, 20/28, 31, 32, 52, 44/47/65 and 61/70/74/76
    - Blank 31424- associated with samples extracted on 1/25/11: PCBs 11 & 15.

- The following target compounds were flagged due to the contamination of proof blank (rinsates collected off tissuemizers/blender after each batch of homogenization):
    - 11462664 - Rinsate collected during sample homogenization on 11/23/11
        - Trace levels of 2, 3, 4'-TrCB, 2, 2'-DiCB, 2, 4', 5-TrCB. PCBs20/28 and 3, 4, 4'-TrCB were detected.
    - 11464665 - Rinsate collected during sample homogenization on 11/30/11:
        - Trace levels of 4 ,4'-DiCB was detected
    - 11462666 – Rinsate Blank collected during sample homogenization on 12/8/11.
        - Trace levels of PCBs 2, 4', 5-TrCB and 2, 2'-DiCB were detected
    - 11264667 – Rinsate blank collected on 12/8/11 during sample homogenization
        - Trace level of 4, 4'-DiCB.
    - When detected in the associated samples, the concentrations of the contaminants listed above were greater than 5x the values in their respective rinsate blank(s). No sample result was qualified on the basis of rinsate contamination.

Analytical Data:

The fish fillet % Lipids ranged from 0.35 – 3.71%. The fish carcass %lipids range up to a high end of 12.7%. Only 32 fish tissue samples had % lipids that were ≤3%. The variability in %lipids indicates the complexity of the sample matrix and explains the chromatographic interferences encountered during analysis. Most of the samples had multiple analyses due to the concentration levels of PCB congeners and interferences present in the samples. Some of the samples had several dilutions and some of the final dilutions reported were still above the instrument's linear range. These values lab maybe biased, were flagged "DN or DN2" by the lab and were qualified estimated, "J", by this reviewer. Sample results with heavy interferences were also qualified estimated, "J".

Laboratory Contact

The laboratory was not contacted for this review.

Overall Assessment

All of the samples were analyzed in accordance with the method specifications. Less than 1% of the 11,150 total data points were qualified estimated or non-detects due to method and proof blank contamination, chromatographic interferences or chromatographic peak saturation. No other reported results were qualified. The data, as qualified, are acceptable and can be used for all purposes.

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Data Qualifiers		
	U	The analyte was not detected at or above the reported result.
	J	The analyte was positively identified. The associated numerical result is an estimate.
	UJ	The analyte was not detected at or above the reported estimated result. The associated numerical value is an estimate of the quantitation limit of the analyte in this sample.
	R	The data are unusable for all purposes.
	N	There is evidence the analyte is present in this sample.
	JN	There is evidence that the analyte is present. The associated numerical result is an estimate.

Portland Harbor Sample Receipt, Analysis, and Results Report

Tetra Tech, EM Inc.

February 2012

Introduction

This report is part of a baseline fish tissue study at the Portland Harbor Superfund Site (Portland Harbor Site). The U.S. Environmental Protection Agency (EPA) conducted this study as part of the Portland Harbor Remedial Investigation and Feasibility Study (RI/FS) and in conformance with the National Contingency Plan. The City of Portland provided assistance at the EPA's request.

This study adds to the body of information that will be used to establish baseline concentrations of polychlorinated biphenyls (PCB) in smallmouth bass tissue. The EPA will use the updated baseline data as a point of comparison to future contaminant concentrations measured in smallmouth bass during and following remedy implementation. The area being investigated is referred to as the Portland Harbor Study Area (study area).

This report summarizes sample receipt, analysis, and results of fish tissue samples collected during the baseline fish tissue study. The samples were collected in accordance with a sampling and analysis plan (SAP) prepared for the EPA by GSI Water Solutions, Inc. (GSI) (GSI, 2011), and as documented in the Field Sampling Report (GSI, 2012).

The report includes three main sections. The first section discusses the receipt of samples by the EPA, subsequent sample processing, and sample shipment (to and from the analytical laboratories). The second section discusses the analysis of samples at each laboratory and provides a summary of data validation results. The final section discusses the sample results, including a discussion of data reduction steps used to calculate summed totals to be used in the RI/FS and risk assessments (RA). Tables of results and the data validation report are attached to this report.

This report was prepared by Tetra Tech under EPA contract number EP-W-07-078. Tetra Tech was responsible for subcontracting laboratory analysis to Pace Analytical Laboratories (Pace), preparing the data for database entry, and preparing this report.

Sample Delivery, Receipt, Processing, and Analysis

As described in the Field Sampling Report, smallmouth bass were collected at 68 "Target" sampling locations and 14 "Lifecycle" sampling locations. The Target samples were generally within the 225- to 335-millimeter (approximately 9- to 14-inch) size range specified in the SAP while the Lifecycle samples ranged in size from 197 to 455 millimeters. The Target samples were collected by GSI and shipped to KAP Technologies Inc. (KAP), laboratory in Woodlands, Texas, on September 19 and October 11, 2011. The Lifecycle samples were shipped to the U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center in Vicksburg, Mississippi, on October 11, 2011. Table 1 identifies the samples as either Target or Lifecycle and indicates their respective shipment batch. Figure 1 shows the locations of the samples collected. More detailed location maps are included in the Field Sampling Report prepared by GSI.

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The initial shipment of Target samples, 50 in all, was incorrectly processed by KAP. The samples should have been homogenized as whole body samples and divided into two separate aliquots. One aliquot was intended for analysis of semivolatile organic compounds (SVOC), polycyclic aromatic hydrocarbons (PAH), and organochlorine pesticides by KAP, and the other aliquot was to be shipped to Pace in Minneapolis, Minnesota, for analysis of PCB congeners and lipid content.

Instead of following contract specifications, KAP prepared skinless fillets and discarded the skin and carcass portions. Upon discovery of this mishap, the EPA determined that the best course of action and use of resources was to refrain from analyzing the skinless fillet samples and instead analyze skin-on fillet and carcass separately from each of the 18 unprocessed Target samples held at KAP and the 14 Lifecycle samples held at the USACE Vicksburg facility. All samples were shipped to the EPA's Manchester Environmental Laboratory (MEL) in Port Orchard, Washington. These 32 samples were then processed as fillet (skin on) and carcass portions which were weighed, homogenized, and shipped to Pace for analysis of PCB congeners and lipid content. Fillet removal was conducted in accordance with the procedure described in Appendix C of the *Portland Harbor RI/FS Round 3B Field Sampling Plan for Fish and Invertebrate Tissue and Collocated Surface Sediment* (Integral, 2007). The skin and belly flap were included in the fillet sample. Because of budget restrictions, modifications to the processing scheme, and termination of the KAP contract, the EPA decided to forego the analysis of SVOC, PAH, and organochlorine pesticides. Table 1 summarizes the samples collected, and identifies which samples were not analyzed as a result of the processing error. The chains of custody and MEL sample processing forms are included in Appendices A and B to this report.

Pace analyzed each sample for the following analyte groups:

- PCB following SOW SOM01.2 and EPA Method 1668C
- Lipids following SOW SOM01.2 and EPA Method 1668C

Following analysis and data validation, the remaining sample material was returned from KAP and Pace to MEL for long-term archival.

Data Validation

The EPA Region 10 quality assurance (QA) staff validated the data following *Guidance on Environmental Data Verification and Validation* (EPA, 2002), *EPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review* (EPA, 2008), and *EPA Region 10 Standard Operating Procedure (SOP) for the Validation of Method 1668 Toxic, Dioxin-like PCB Data* (EPA, 1995). A Stage 4 data validation was conducted on all analytical data (EPA, 2012).

Table 2 summarizes the results of the data validation (see tables attached to this report). The data validation report is included in Appendix C to this report.

The EPA made few data qualifications during the data validation process. Qualifications were made for method and proof blank contamination, chromatographic interferences, and

chromatographic peak saturation.

Data validation included an assessment of blank samples, including four rinsate blank samples collected during sample homogenization. Several analytes were qualified as estimated or non-detect based on trace laboratory blank contamination. The rinsate blank samples were analyzed for PCB congeners, and the results were compared with associated samples. Although a few congeners were detected at trace levels, the EPA did not qualify any samples based on rinsate blank contamination because no detected sample results were detected at concentrations within 5 times higher than the value in the associated rinsate blank (EPA, 2012).

Sample Results

In addition to the raw results, the SAP (GSI, 2011) specifies two sets of rules for summing data and retaining or modifying qualifiers and reducing the data to a single value per sample and summation group. The two sets of rules include one for use in the RI and another for use in the RA and background data sets, in accordance with the Portland Harbor RI/FS guidelines (Kennedy/Jenks, 2004).

Summation rules for the RI data set are as follows:

- For samples with at least one detected result for the summed analytes included in the total:
    - Detected concentrations are included in the calculated total.
    - Non-detected concentrations are not included in the calculated total (i.e., treated as zero).
- For samples with no detected results:
    - The highest detection limit is used for the summation. The calculated total result is indicated with a “U” to indicate it was not detected.

Summation rules for the RA and background data sets are as follows:

- For samples with at least one detected result for the summed analytes included in the total:
    - All detected concentrations are included in the calculated total.
    - All non-detected results for analytes, if they were detected at least once in the RA data set within the study area for a given medium (in this case, fish tissue), are included in the calculated total at one-half the detection limit.
    - All non-detected results for analytes, if they were not detected in any sample within the RA data set within the study area for a given medium, are not included in the calculated total (i.e., treated as zero).
- For samples with no detected results, where some of the summation analytes are determined to be present within the study area:
    - The highest detection limit for analytes present within the study area is used for the summation. The calculated total result is indicated with a “U” to indicate it was not detected.

Data qualifiers were carried through the summation procedure. If all the analytes were not detected, a “U” qualifier is applied to the summed data to indicate that all results were reported

as not detected. All calculated totals are flagged with a "T" qualifier to indicate that they are mathematically derived values.

After the summations were complete, an overall concentration was calculated for each fish sample. These concentrations are reported as "whole body (calculated)" in the tissue field. The whole body concentrations were calculated only for the summation analytes (and not including the homolog summations), and were calculated using the following equation:

$$C_{wb} = \frac{\left(C_f \cdot M_f\right) + \left(C_{bwof} \cdot M_{bwof}\right)}{\left(M_{fillet} + M_{bwof}\right)}$$

where:

C_{wb} = the calculated concentration of the whole body fish sample
C_f = the measured concentration of the fillet fish sample
C_{bwof} = the measured concentration of the body without fillet fish sample (i.e., carcass)
M_f = the mass of the fillet fish sample
M_{bwof} = the mass of the body without fillet fish sample

Table 3 lists the summation group results to be calculated for each sample. Table 4 summarizes the laboratory data, including the summed totals as defined in Table 3 and the summation rules listed above. Table 5 lists only the summed totals for only the "fillet" and "whole body (calculated)" tissue types.

References

GSI Water Solutions, Inc. (GSI). 2011. Sampling and Analysis Plan, Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study, Willamette River, Portland, Oregon. Prepared for U.S. Environmental Protection Agency. September 2011.

GSI. 2012. Portland Harbor 2011 Baseline Smallmouth Bass Tissue Study, Field Sampling Report, Willamette River, Portland, Oregon. Prepared for U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, and City of Portland. June 2012.

Integral. 2007. Portland Harbor RI/FS Round 3B Field Sampling Plan for Fish and Invertebrate Tissue and Collocated Surface Sediment. Prepared for the Lower Willamette Group, Portland, Oregon. Integral Consulting, Inc. October 22, 2007.

Kennedy/Jenks. 2004. Portland Harbor RI/FS Technical Memorandum: Guidelines for Data Averaging and the Treatment of Non-detected Values for the Round 1 Database. Prepared for the Lower Willamette Group, Portland OR. Kennedy/Jenks, Integral Consulting, Inc., Windward Environmental, LLC. June 25, 2004.

U.S. Environmental Protection Agency (EPA). 1995. EPA Region 10 SOP for the Validation of

Method 1668 Toxic, Dioxin-like PCB Data. EPA Region 10, Environmental Services Division, Seattle, WA. December 8, 1995.

EPA. 2002. Guidance on Environmental Data Verification and Validation. EPA QA/G-8. EPA/240/R-02/004. EPA Office of Environmental Information, Washington DC. November 2002.

EPA. 2008. USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review. USEPA-540-R-08-01. EPA Office of Superfund Remediation and Technology Innovation. June 2008.

EPA. 2012. Memorandum. Subject: Data Validation Report for the full list of 209 Polychlorinated Biphenyl Congener (PCB Congeners) Analyses of Small-Mouthed Bass Tissue Samples Collected for the Portland Harbor RI/FS BACE Project Numbers: 10180829, 100180826, 101867, 101870. From: Ginna Grepo-Grove, R10 QA Manager, Office of Environmental Assessment, USEPA. To: Chip Humphrey and Matthew Lambert. June 13, 2012.

Figures

Tables

Appendix A

Chain of Custody Forms

Appendix B

Sample Processing Forms

Appendix C

Data Validation Report

To: Gustavson, Karl[Gustavson.Karl@epa.gov]; Rood, Stephen[RoodSG@cdmsmith.com]
From: King, Todd W.
Sent: Wed 7/23/2014 7:12:20 AM
Subject: EPA_TCT_20140723v0.pptx
EPA_TCT_20140723v0.pptx

To: Gustavson, Karl[Gustavson.Karl@epa.gov]
From: King, Todd W.
Sent: Wed 7/23/2014 12:07:28 AM
Subject: EPA_TCT_20140723v0.pptx
EPA_TCT_20140723v0.pptx

To: Gustavson, Karl[Gustavson.Karl@epa.gov]
From: King, Todd W.
Sent: Tue 7/22/2014 12:53:22 AM
Subject: Looks like we have our answer...
LWG Reponses to EPA's Source Material 072114.pdf

DRAFT LWG RESPONSES TO EPA'S SOURCE MATERIAL PROPOSAL FOR THE REVISED FEASIBILITY STUDY

The U.S. Environmental Protection Agency (EPA) described a proposal to identify so-called "source material"[1] within the Portland Harbor Site during the June 5, 2014 Feasibility Study (FS) technical meeting. EPA defined source material as any sediment exceeding 5 times the Alternative B remedial action levels (RALs). EPA indicated that source material would receive a "preference for removal" in the revised FS alternatives development and evaluation. In response to the Lower Willamette Group (LWG)'s concern that the selection of this overall approach is arbitrary and capricious, EPA indicated that it agreed with the LWG that the threshold of 5 times the Alternative B RALs was arbitrary, but EPA did not view its actions as capricious. EPA and the LWG agreed at the June 5 meeting that the LWG would respond to EPA's proposal. This memorandum provides the LWG's response to EPA's proposal to identify "a preference for removal".

GENERAL RESPONSES

The LWG's response is that EPA's concept of source material (i.e., 5 times the Alternative B RALs) and the preference for removal is irrelevant and unnecessary and should not be presented in the revised FS for reasons stated below.

1. There is no EPA policy or guidance for a "preference for removal" in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA's primary sediment remediation guidance points directly to the opposite of this concept:

   a) "EPA's policy has been and continues to be that there is no presumptive remedy for any contaminated sediment site, regardless of the contaminant or level of risk. This is consistent with the NRC report's statement (p. 243) that 'There is no presumption of a preferred or default risk management option that is applicable to all PCB-contaminated-sediment sites.' At Superfund sites, for example, the most appropriate remedy should be chosen after considering site-specific data and the NCP's nine remedy selection criteria. All remedies that may potentially meet the removal or remedial action objectives (e.g., dredging or excavation, in-situ capping, in-situ treatment, monitored natural recovery) should be evaluated prior to selecting the remedy. This evaluation should be conducted on a comparable basis, considering all components of the remedies, the temporal and spatial aspects of the sites, and the overall risk reduction potentially achieved under each option" (EPA 2002).

   b) "EPA's policy has been and continues to be that there is no presumptive remedy for any contaminated sediment site, regardless of the contaminant or level of risk" (EPA 2005).

[1] EPA indicated that the term "source material" was not being used as synonymous with this term as defined in the Principle Threat Waste guidance (EPA 1991), which addresses the preference for treatment. In this case, EPA is using the term "source material" as generally representing a preference for removal.

For discussion purposes only – do not cite or quote. This draft document has been provided to EPA to facilitate EPA's comment process on the Draft FS in order for LWG to finalize the FS. The comments or changes (including redlines) on this document may not reflect LWG positions or the final resolution of the EPA comments.
DRAFT

2. LWG's understanding is that neither the LWG nor EPA has conducted any technical or risk-based analysis showing that certain sediments are potentially an ongoing Site source.
   a. To determine if any Site sediments are a source to other media, evaluations would need to be conducted to demonstrate those sediments cause impacts to surface water or downstream bedded sediments in excess of a relevant toxicity thresholds separate from any other ongoing sources (e.g., upstream sources, uncontrolled upland sources, etc.)
3. Regardless of the above points, additional reasons that EPA's preference for removal methods are not practicable include:
   a. At the Fox River Site, the Toxic Substances Control Act (TSCA) threshold for polychlorinated biphenyls (PCBs) of 50 parts per million (ppm) was used as a regulatory threshold to guide requirements of TSCA risk-based disposal under 40 Code of Federal Regulations § 761.61(c) (EPA and WDNR 2007). TSCA regulations do not provide a preference for removal, but the threshold used to guide disposal decisions at Fox River indicates the thresholds in EPA's preference for removal definition for Portland Harbor are very low in comparison.
   b. Sediments well in excess of 5 times B RALs can be contained in place as shown by the draft FS capping analysis in Appendix Hc, which is similar to findings at other sites. For example, at the Fox River Site, it was determined that some of the TSCA materials in excess of 50 ppm could be capped in place to provide a protective remedy (EPA and WDNR 2007).
   c. The 5 times B RALs methodology would likely result in little if any net improvement in effectiveness over the draft FS technology selection criteria, and costs would be disproportionate to any limited benefits. This is supported by the draft FS analysis, which shows that dredging causes additional short term impacts as compared to, for example capping, while not achieving substantially lower long term impacts.

REFERENCES

EPA, 1991. EPA (U.S. Environmental Protection Agency), 1991. A Guide to Principal Threat and Low Level Wastes. Office of Solid Waste and Emergency Response. Superfund Publication 9380.03-06FS. November 1991. Washington, D.C.

EPA (U.S. Environmental Protection Agency), 2002. Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites. Memorandum from Marianne Lamont Horinko /s/ Assistant Administrator to Superfund National Policy Managers, Regions 1 – 10, RCRA Senior Policy Advisors, Regions 1 – 10. OSWER Directive 9285.6-08. Washington, D.C.

EPA, 2005. Contaminated Sediment Remediation Guidance for Hazardous Waste Sites. OSWER Publication 9355.0-85 DRAFT. United States Environmental Protection Agency, Office of Solid Waste and Emergency Response.

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DRAFT

EPA and WDNR (Wisconsin Department of Natural Resources), 2007. Record of Decision Amendment. Operable Unit 2 (Deposit DD), Operable Unit 3, Operable Unit 4, and Operable Unit 5 (River Mouth), Lower Fox River and Green Bay Superfund Site. U.S. Environmental Protection Agency and Wisconsin Department of Natural Resources.

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DRAFT

To: Koch, Kristine[Koch.Kristine@epa.gov]
Cc: Coffey, Scott[CoffeySE@cdmsmith.com]; Gustavson, Karl[Gustavson.Karl@epa.gov]; Rood, Stephen[RoodSG@cdmsmith.com]
From: King, Todd W.
Sent: Thur 7/17/2014 5:22:57 AM
Subject: EPA_TCT_20140723v0.pptx
EPA_TCT_20140723v0.pptx

Rough outline of ppt…no pretty figures yet…

TK

To: Gustavson, Karl[Gustavson.Karl@epa.gov]; Rood, Stephen[RoodSG@cdmsmith.com]
From: King, Todd W.
Sent: Wed 7/16/2014 8:11:31 PM
Subject: FW: Draft List of Issues Needing Resolution by August 5th
Draft List of Issues Needing Resolution by August 5_071614r2.docx

Looks like a pretty good list.

From: Jennifer Woronets [mailto:jworonets@anchorqea.com]
Sent: Wednesday, July 16, 2014 4:07 PM
To: Koch, Kristine (Koch.Kristine@epa.gov)
Cc: Amanda Shellenberger; Bob Wyatt; Carl Stivers; Jennifer Woronets; Jim McKenna (jim.mckenna@verdantllc.com); King, Todd W.; Mullin, Jeanette; Patty Dost; Coffey, Scott; Sean Sheldrake
Subject: FW: Draft List of Issues Needing Resolution by August 5th

Kristine,

Please see below and attached from Carl.

Let us know if you have any questions.

Thank you,

Jen Woronets ☺

Anchor QEA, LLC

jworonets@anchorqea.com

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From: Carl Stivers
Sent: Wednesday, July 16, 2014 1:03 PM
To: Jennifer Woronets
Subject: Draft List of Issues Needing Resolution by August 5th

Kristine –

As discussed at the July 8 meeting, please find attached a draft list of issues needing resolution by August 5th. This draft list is being provided for EPA consideration and comment as part of the non-binding informal information exchange process for the revised FS. The goal is to develop a final list that both the LWG and EPA endorse to facilitate preparations for the July 31st and August 5th meetings.

Please let us know any changes you propose to this list.

Thanks.

Carl

Carl Stivers

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DRAFT LIST OF REVISED FS ISSUES NEEDING RESOLUTION BY AUGUST 5 FOR EPA CONSIDERATION

At the July 8, 2014 revised FS technical meeting, the LWG agreed to generate a draft list of outstanding issues that need to be resolved by the August 5, 2014 technical meeting. This draft list is being provided for EPA consideration and comment. The goal is to develop a final list that both the LWG and EPA endorse. The FS revision process matrix (submitted to EPA each Friday) indicates that all Section 3 information will be understood and resolved (as necessary) by early August. The August 5th meeting is intended to discuss the last portions of Section 3 regarding alternative screening and selection of alternatives for detailed evaluation in Section 4. The list provided below focuses on those items that are needed to complete the alternative selection process in Section 3 and allow discussion of the alternative evaluation process in Section 4.

List of items needed to complete Section 3 discussions:

1. Final decisions on **Preliminary Remediation Goals (PRGs)** (i.e., a final PRG table showing PRGs for each Remedial Action Objective).

2. Determination of any **technology evaluation methods** (i.e., for dredging, capping, Enhanced Monitored Natural Recovery, or in-situ treatment) needed to determine the feasible application of that technology to various portions of the Site.

3. Methods for **identification and selection of technologies** (e.g., EPA's technology identification decision matrix and resulting "pixel" map).

    a. Methods for refining or smoothing pixel map technology selections into feasible subareas of technology application within each Sediment Management Area (SMA). This should resolve issues related to so called "subSMA changes" from the draft FS.

4. Final decisions **on Remedial Action Levels (RALs) and comprehensive benthic risk areas (CBRAs**) to be used to define SMAs.

    a. EPA has indicated this might include options using different sets of RALs (e.g., draft FS RALs vs. EPA revised RALs) that might be evaluated and compared in the alternatives selection process.

    b. EPA has indicated no recent revisions to the CBRA, but has not confirmed that the current CBRAs are final.

5. Methods for defining **Sediment Decision Units (SDUs)**, which appears to be completed. And methods for evaluating SDUs, which EPA indicated it is still working on.

    a. SDU evaluation is expected to include some determination that PRGs are adequately addressed (e.g., time zero surface area weighted average concentrations [SWAC] calculations) through focus on the SDUs.

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DRAFT

b. How the SDU analysis will be used in the RAL and SMA development discussion needs to also be resolved.

6. The use of **equilibrium values** (instead of upstream bedded sediment background values) in the revised FS. The LWG submitted a proposal for use of equilibrium values to EPA.

   a. EPA has indicated interest in equilibrium values for some FS uses, and LWG has recommended their use for PRG selection, SWAC estimates, and alternatives evaluations. Any uses related to PRGs or SWAC estimates (e.g., SDU evaluations) in Section 3 need to be resolved.

7. **Source material (preference for removal**) methodologies and how technologies will be assigned for alternatives within any source material areas.

   a. The LWG will be submitting a response on preference for removal in the near future.

8. How **Oregon Hot Spot** regulations will be addressed in the revised FS. We understand that DEQ has ceased work on a Hot Spot identification for Portland Harbor. But the LWG is unclear on how EPA intends to address compliance (or waiving) of substantive requirements of this regulation and how this will be described in the revised FS.

9. Methods for **mapping SMAs** based on the final RALs. EPA has indicated several method differences for applying the RALs to determine SMA footprints. The LWG has not been able to reproduce these SMAs to date, and some reproducible description of the mapping methods is needed.

   a. Per Item 4a, sets of SMA options to be evaluated for alternative screening and selection need to be defined.

10. Any methods and results of **buried contamination evaluations**. Areas of buried contamination that are not addressed by application of RALs to surface sediment need to be defined and added to the SMAs (as necessary) so that the complete extent of the SMAs is known for technology applications, alternatives screening, and alternative selection.

    a. EPA has recently requested some additional graphics to help support this analysis. The LWG is currently considering the feasibility and timeline for producing such graphics.

11. The **assignment of disposal sites** to each alternative screened. EPA has indicated that all alternatives will assume upland disposal.

    a. EPA has also indicated that "options" for Confined Disposal Facility (CDF) disposal will be included in some alternatives. The extent to which options will be identified and characterized such that they do not constitute full additional alternatives needs to be described.

For discussion purposes only – do not cite or quote. This draft document has been provided to EPA to facilitate EPA's comment process on the Draft FS in order for LWG to finalize the FS. The comments or changes (including redlines) on this document may not reflect LWG positions or the final resolution of the EPA comments.
DRAFT

12. Any **changes to CDF evaluation or characterization methods** need to be defined. For example, EPA has requested additional information on CDFs but it is unclear how this information will play into disposal option descriptions or alternatives development in the revised FS.

13. Any changes to **depth of impact (DOI), dredge depth or volume estimates**. EPA provided a draft memo describing some alternate methods for these estimates. The LWG responded to this memo with some recommendations.

    a. EPA indicated that alternate methods for DOI, dredge depth or volume will only be presented as a comparative analysis. Confirmation is needed that RALs will be used as the primary method to define alternatives. Description is also needed regarding how the alternate methods will be described and used in the revised FS in any comparative analysis.

14. Methods for **identification, screening, and selection of alternatives** for detailed evaluation need to be described.

Also, normally **Principle Threat Waste (PTW)** issues would also be resolved as part of alternative screening and selection. The LWG plans to submit a response to EPA's PTW identification and evaluation methods, but this information may not be available in sufficient time to be resolved by August 5th.

For discussion purposes only – do not cite or quote. This draft document has been provided to EPA to facilitate EPA's comment process on the Draft FS in order for LWG to finalize the FS. The comments or changes (including redlines) on this document may not reflect LWG positions or the final resolution of the EPA comments.
DRAFT

To: Gustavson, Karl[Gustavson.Karl@epa.gov]
From: King, Todd W.
Sent: Tue 7/15/2014 2:41:23 PM
Subject: EPA_TCT_20140723v0.pptx
EPA_TCT_20140723v0.pptx

Check agenda page as start for next week.

To: Coffey, Scott[CoffeySE@cdmsmith.com]; Mullin, Jeanette[MullinJM@cdmsmith.com]; Gustavson, Karl[Gustavson.Karl@epa.gov]; Rood, Stephen[RoodSG@cdmsmith.com]
From: King, Todd W.
Sent: Thur 7/10/2014 5:32:10 PM
Subject: FW: Responses to EPA Dredge Depth Memo
Responses to EPA's Draft Dredge Depth Memo_070914.pdf

From: Jennifer Woronets [mailto:jworonets@anchorqea.com]
Sent: Thursday, July 10, 2014 1:21 PM
To: Koch, Kristine (Koch.Kristine@epa.gov)
Cc: Jennifer Woronets; Carl Stivers; Amanda Shellenberger; Bob Wyatt; Jim McKenna (jim.mckenna@verdantllc.com); Patty Dost; Sean Sheldrake; King, Todd W.; John Verduin
Subject: Responses to EPA Dredge Depth Memo

Kristine,

Please see below and attached from Carl.

Kristine – Please find attached the LWG's response to EPA's Proposed Dredge Depth Approach memorandum dated May 16, 2014. This information is being provided to EPA as part of the non-binding informal information exchange for the revised FS. We believe this information will be useful for discussions on alternative development during the July 31 and August 5 FS meetings, including distinguishing the depth of impact evaluation from the dredge depth assumptions.

Please let me know if you have any questions about the responses.

Thanks.

Carl

Let us know if you have any questions.

Thank you,

Jen Woronets ☺

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DRAFT LWG RESPONSES TO EPA'S PROPOSED DREDGE DEPTH APPROACH FOR THE REVISED FEASIBILITY STUDY

The U.S. Environmental Protection Agency (EPA) provided a memorandum dated May 16, 2014, to the Lower Willamette Group (LWG) on May 21, 2014, regarding "Proposed Dredge Depth Approach." This memorandum was discussed at the May 22, 2014 Feasibility Study (FS) technical meeting. EPA indicated at that time it was considering limiting the use of the proposed approach to a comparison of the dredge depths using the remedial action levels (RALs; similar to the draft FS dredge depth approach). The comparison would help determine if the RAL approach is adequate for the revised FS. EPA indicated that it was unlikely the May 16 memorandum approach would be used to determine the actual dredge volumes for detailed alternatives evaluation for the revised FS. EPA also indicated the existing FS data set is adequate to assess depths of impact at an FS-level of analysis, and additional data will likely be collected during remedy design to establish final depths of impact.

The LWG has prepared preliminary responses and observations to the approach presented in the May 16 memorandum, which are contained herein. In summary, the LWG primary responses are:

- EPA's "Proposed Dredge Depth Approach" should not be used to develop volumes for the detailed alternatives evaluation in the revised FS. The LWG supports the continued use of RALs to determine dredge depths and alternative volumes as a realistic and feasible FS-level determination.

- The Table 1 "dredging rules" in EPA's memorandum are overly complicated for the revised FS, will not accurately reflect future decisions made in design, and should not be used in the revised FS. Instead, the selection of technology combinations within each dredge area should be determined during design.

GENERAL RESPONSES

Regarding the general approach presented in the May 16 memorandum, the LWG has the following preliminary responses:

1. We agree that the "Proposed Dredge Depth Approach" should not be used to develop volumes for the detailed alternatives evaluation. The LWG supports the continued use of RALs to determine dredge depths and alternative volumes as a realistic and feasible FS-level determination.
2. The May 16 memorandum does not indicate the comparative nature of the evaluation; EPA only discussed this aspect orally at the May 22, 2014 meeting. The May 16 memorandum should not be used beyond the comparative analysis context discussed on May 22.
3. The May 16 memorandum describes the approach but does not describe the rationale behind the approach. Even if this approach is used only as a

comparative analysis (or similar), **the rationale for the assumptions and decisions described in the memorandum should be explained.**

4. The May 16 memorandum discusses dredge depths, which is one issue. It also discusses how the dredging technology could be applied in combination with other technology options, including the following: dredge and cap combination technologies, backfill after dredging, post dredge sand or gravel "beach mix" cover of various depths, and post-dredge engineered capping. **The dredge depth issue and combination technology options issues should be clearly separated to better convey the rationale behind decisions for each issue.**

DREDGE DEPTHS

5. EPA indicated the depth of impact (DOI) for this comparative evaluation will be based on human health and ecological preliminary remediation goals (PRGs), E RALs for select contaminants of concern (COCs), and five times the B RALs for key COCs. It appears, based on the May 22 meeting discussions, that the lowest sediment PRG across all remedial action objectives will be selected. Therefore, the human health PRGs will always be lower than the E RALs and five times the B RALs, and the PRGs will always identify the deepest DOI in any given core. It appears EPA is only using these other two criteria for the combination technology option evaluation. For clarity, **the E RALs and five times B RALs criteria should not be described as part of the DOI threshold evaluation.**
6. The LWG disagrees that PRGs should be used to determine DOI even in a comparative analysis. Many of the PRGs are too low (at or near background) to be feasibly achievable even after multiple dredge passes due to dredge residuals. Post dredge sand cover will be needed regardless of whether PRGs or RALs are used to determine DOI and therefore, using RALs will be equally effective in terms of the final surface sediment concentration achieved. It is further expected that depositing sediments from upstream of the Site will result in post-dredge surface sediment concentrations that are above the PRGs. See the LWGs June 19, 2014 Section 2 Comments (Attachment 2) for more information on the Site equilibrium levels driven by deposition of sediments from upstream of the Site.
7. Per comment 1, we disagree that PRGs should be used to determine the DOI thresholds for the revised FS alternatives. The following assessment is sufficient to inform the revised FS.
    a. We assessed the implications of using PRGs for a DOI comparative analysis as described by EPA. Specifically, we compared the DOIs identified in each core by the following DOI thresholds: 1) draft FS approach using RALs and benthic mean quotients (MQ); 2) EPA's proposed method of using PRGs; and 3) EPA's proposed method but with EPA RALs for each alternative instead of PRGs. This assessment used the draft FS sediment database and the draft FS alternative footprints.

b. Results of this analysis are shown in Table 1, which presents DOI statistics for cores within each alternative for each method. The mean DOI using RAL thresholds ranges from 5 to 6 for every alternative (B through F). In contrast, the mean DOI using PRGs as the DOI threshold ranges between 7 and 8 feet. Using PRGs as applied to the existing core data base would increase the dredge depth on average by 2 feet across the entire site, which would add considerably to the dredge volumes for all of the alternatives.

c. Also, the percent of cores within each alternative where the threshold was still exceeded at the bottom of the core (i.e., the core is "unbounded" relative to the threshold) was examined. Using the PRGs would mean that in 70 to 73% of cases the PRG would still be exceeded in the deepest available sample from the core, as compared to 29 to 39% of the cases using the RALs. Using the PRGs for the DOI threshold implies that there would be considerable additional volume of material that is unknown. .

d. **The above analysis is sufficient for EPA to understand the implications of using PRGs vs. RALs as the DOI threshold in the revised FS, and no further evaluation is needed.** Based on the above, using PRGs as the DOI threshold is not a realistic or feasible approach to determining reliable dredge volume estimates at the site.

8. EPA indicates that volumes will be assessed based on the DOIs established. The May 16 memorandum discusses contouring DOIs, assigning a DOI to each 10×10 foot pixel in the contour map, and then calculating a volume by pixel. Many factors of an FS-level appropriate volume determination are not discussed in the May 16 memorandum. Per the draft FS, these factors include the following:

   - How DOIs will be intersected with the actual areas of dredging assigned to each alternative;
   - Adjustments of volumes (e.g., impacts adjacent to or under structures and to allow stable slopes);
   - Overdredge allowances;
   - Residual pass depths or volume;
   - Engineering factors addressing the uncertainty in FS-level volume estimates (e.g., allowance for design core refinements, design prisms, and transition slopes from deep to shallow dredge cuts);
   - Or alternatively, a neatline volume ratio as previously proposed by EPA to capture the above factors.

   EPA should clarify these factors to help determine whether differences in volume estimates between this approach and the draft FS approach are caused by the different DOI thresholds used or the differences in the other volume assumptions or both. If EPA pursues calculation of volumes using PRGs, **the above factors should be included in EPA's volume calculation including an uncertainty analysis similar to the draft FS so that more accurate and realistic volumes are developed**.

9. The May 16 memorandum indicates that the Gasco database will be included in ssthe last year) took place at Gasco.
   a. It is unclear whether EPA intends to also include additional Arkema and River Mile 11 East (RM 11E) data in DOI and volume evaluations. It is also unclear what portions of the data available at these early action sites might be included. For example, data collection is ongoing at RM 11E, additional monitoring is proposed at Arkema, and recent additional monitoring (within the last year) took place at Gasco.
   b. We are concerned that without a detailed plan on dataset usage, it will be difficult to track: 1) which evaluations are using the FS database and which are using additional datasets; and 2) what differences in various evaluation conclusions are caused by database differences versus technical issues. **The LWG requests a description of the intended inclusion or exclusion of the early action datasets (or parts thereof) in the DOI, volume, and all other revised FS evaluations, and how any variations in datasets used will be considered in the revised FS.**
   c. Inclusion of new data will further confuse any comparisons between the draft FS and proposed DOIs and volume determinations. **When comparisons are made between draft FS and proposed methods, the datasets should be consistent.** (As noted previously, comparisons provided in this memorandum used the draft FS sediment database.)

TECHNOLOGY OPTIONS

10. Table 1 in the May 16 memorandum proposes some "dredging rules" that are segregated by the following:
    - Elevation: Shallow areas (less than 2 feet below mean lower low water [MLLW]), deeper navigation areas, and intermediate water depth (greater than 2 feet below MLLW).
    - Presence/absence of source material (as defined by EPA as five times B RALs)
    - Options of full removal vs. dredge and cap
    - Depth of impact and depth to source material

    Although not explained, the rules appear to relate to the circumstances where combination technologies (e.g., dredge and cap, dredge and fill, and dredge and cover) would be implemented. In general, the rules appear overly complex for an FS-level assessment and not likely to anticipate specific design-level considerations and needs within each sediment management area (SMA**). This type of analysis is overly complicated for the revised FS and will not accurately reflect future decisions made in design. The selection of technology combinations within each dredge area should be determined during design.** If EPA proceeds with this for the revised FS, the EPA should use a simpler set of assumptions to provide a reasonable assessment of various FS

issues (e.g., costs) related to technology combination options, which would still provide an accurate FS-level estimate of potential future design options. The responses below indicate specific ways these assumptions could be simplified.

11. **The rationale for the dredging rules needs to be closely tied to an integrated assessment related to issues of habitat value, water surface area loss, navigation needs, flood concerns, and dredge residuals control.** These all appear to be issues that may be addressed by the rules, but the linkage between the issues and rules is not clear. Further, these rules need to be integrated with similar assessments for other remedial technologies (e.g., capping and enhanced monitored natural recovery [EMNR]). Examples of unclear rationales for the dredging rules are as follows:

    a. If minimizing potential flood impacts is a goal, why have rules that automatically require backfill of dredge prisms? This would result in a loss of potential additional flood capacity created by the remediation dredging. This rule also does not consider the interplay between EMNR or capping (as stand-alone technologies) and dredging so that an overall goal of minimizing flood impacts would be achieved.

    b. If minimizing loss of water surface area is a goal, in shallow areas why have rules that fill dredge prisms? This would return some shallow areas to elevations that are routinely above the water surface during lower flow conditions. Again, this rule also does not consider the interplay with capping and EMNR as stand-alone technologies.

    c. If maximizing habitat quality is a goal, why have rules in shallow and intermediate elevations that automatically return the elevation to the pre-dredge elevation? As presented in Appendix M of the draft FS, the habitat value of various water depths can be summarized as scores (see the attached Figure 1, which is an adapted version of Figure 3.2-3 from the draft FS Appendix M). Habitat quality might be better maximized by simply capping "shallow water main channel" habitat and converting it to higher value "shallow water nearshore" habitats, as defined in Figure 1. Similarly, "deep water" habitats that lie outside of navigation areas could be capped and converted to higher value "shallow water main channel" habitats. Overall, EPA's Table 1 May 16 memorandum depth intervals and related rules appear to have no clear relationship to potential habitat values represented by various water depths, as shown in Figure 1.

    d. If maximizing habitat quality is a goal, why have rules that require changes in substrate type (e.g., application of "beach mix") in some cases but not others? Again, the relationship to stand-alone capping and EMNR substrate issues is also not considered. Inconsistent consideration of substrate and other potential habitat features (e.g., rip-rap, overwater structures, and riparian vegetation) results in rules that could as easily diminish rather than enhance overall habitat value of any given alternative.

    e. Similarly, see comment 11 about navigation concerns.

If EPA proceeds with technology combination selection for the revised FS, the LWG will propose a framework for integrating these various issues into a simpler set of assumptions that can be used for FS-level appropriate evaluations.

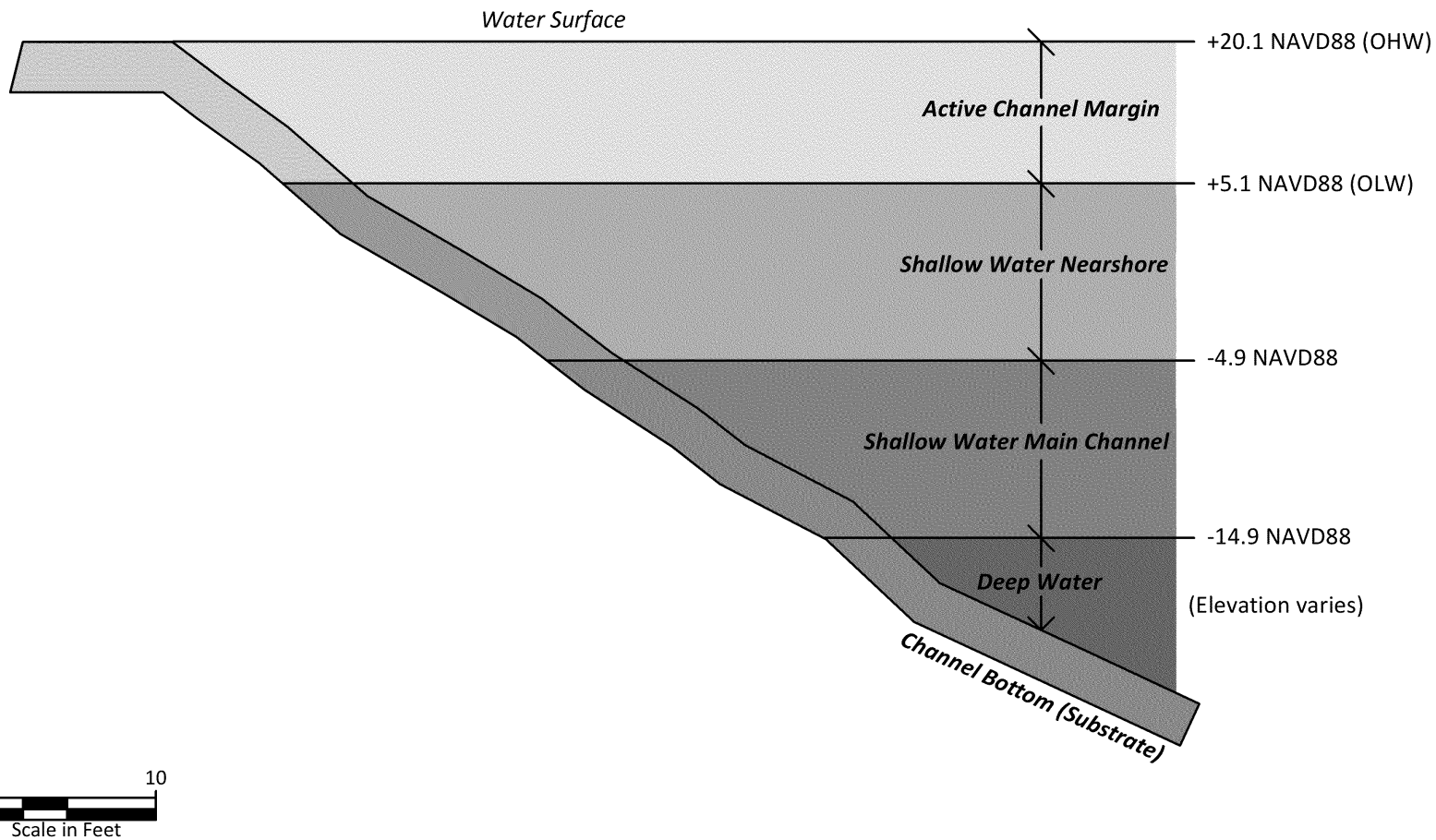
12. In general, material placement (caps, backfill, etc.) in navigation areas (including future maintenance dredge areas [FMD]) needs to be more closely tied to the navigation analysis provided in the draft FS (see Figure 2, which originally appears as Figure 6.2-28 in the draft FS).
    a. Per Figure 2, **any placed material after dredging in the navigation channel needs to account for an allowance for potential future maintenance dredging, potential future deepening, allowable overdredge, and an operational buffer such that the material would not be subsequently removed by maintenance dredging or impacted by navigation.** Similar but different requirements should be accounted for in the FMD areas as shown in Figure 2. It appears that EPA's dredge rules (such as, "dredge to 15 ft and place 3-foot sand cap") do not consider these navigation buffers.
    b. The draft FS analysis (p. 6-49) also shows that navigation buffers and allowance for capping back needed in the navigation channel and FMD areas are approximately 16 feet and 11 feet, respectively. The analysis further shows that contamination in the navigation areas will be fully removed by dredging before these buffers are reached. Therefore, **all the dredge rules for navigation areas should be changed to "dredge to threshold and place residual sand cover."**
13. The purpose or benefit of the dredge and cap back rules are unclear.
    a. For non-source material areas, EPA assumes that dredge/cap will involve removal of 3 feet of material and replacement of that interval with either an "engineered cap" or "sand." The need for dredging and capping is generally determined by a balance of effectiveness and cost considerations (with technical feasibility also playing a substantial role in some circumstances), such as depth to contamination, contaminant concentrations at particular intervals, slopes, nearby structures, habitat issues, and existing or future site uses. For example, dredging to 3 feet and capping back in areas with 4 feet of contamination would be cost ineffective as compared to simply dredging the additional foot of contamination. Similarly, a 3 feet cap may not always be the best design; thinner caps may be effective in some cases, and thicker caps may be needed in other cases.
    b. There is no rationale for always assuming that 3 feet of removal followed by capping back the same interval will represent a reasonable balance of cost and effectiveness. **Given the complexity of the site and variations across SMAs relative to the factors noted previously in this memorandum, the particulars of dredge/cap combinations are best left to remedial design. Regardless, we agree that wide flexibility in applying dredge/cap combinations should be allowed for in design**.

c. The assumption that intermediate elevation dredge/cap areas could always be covered with “sand” vs. an engineered cap appears unjustified. A similar issue exists for shallow and intermediate elevations, full removal, and DOI >15 feet, where placement of sand is specified. Clearly, there could be cases where contaminant levels in the post dredge surface or the occurrence of river currents could require more than a simple sand layer to isolate remaining contaminants. Per above, the particulars of dredge/cap combinations are better left to design.

Table 1: Implications of EPA-Proposed Dredge Depth Approach

Depth of Impact Statistic	B			C			D			E			F		
	HH_PRG	EPA RAL	Draft FS	HH_PRG	EPA RAL	Draft FS	HH_PRG	EPA RAL	Draft FS	HH_PRG	EPA RAL	Draft FS	HH_PRG	EPA RAL	Draft FS
5th percentile	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25th percentile	3	1	1	3	1	1	3	1	1	3	1	1	3	1	1
Mean	8	5	6	8	5	6	8	5	6	7	5	6	7	5	6
75th percentile	13	9	10	12	8	9	12	8	9	11	8	8	11	9	9
95th percentile	15	15	20	15	15	19	15	15	19	15	15	17	15	15	17
Percent Unbounded	71%	29%	30%	73%	31%	30%	72%	34%	32%	73%	34%	36%	70%	39%	37%
Number of Cores	103	103	103	160	160	160	177	177	177	256	256	256	375	375	375

Notes:
EPA = U.S. Environmental Protection Agency
FS = Feasibility Study
PRG = preliminary remediation goal
RAL = remedial action level



Appendix M Relative Habitat Score
10
10
4
1

Note: This figure is an adapted version of Figure 3.2-3 from the Draft Feasibilty Study, Appendix M.

ANCHOR QEA

LWG LOWER WILLAMETTE GROUP

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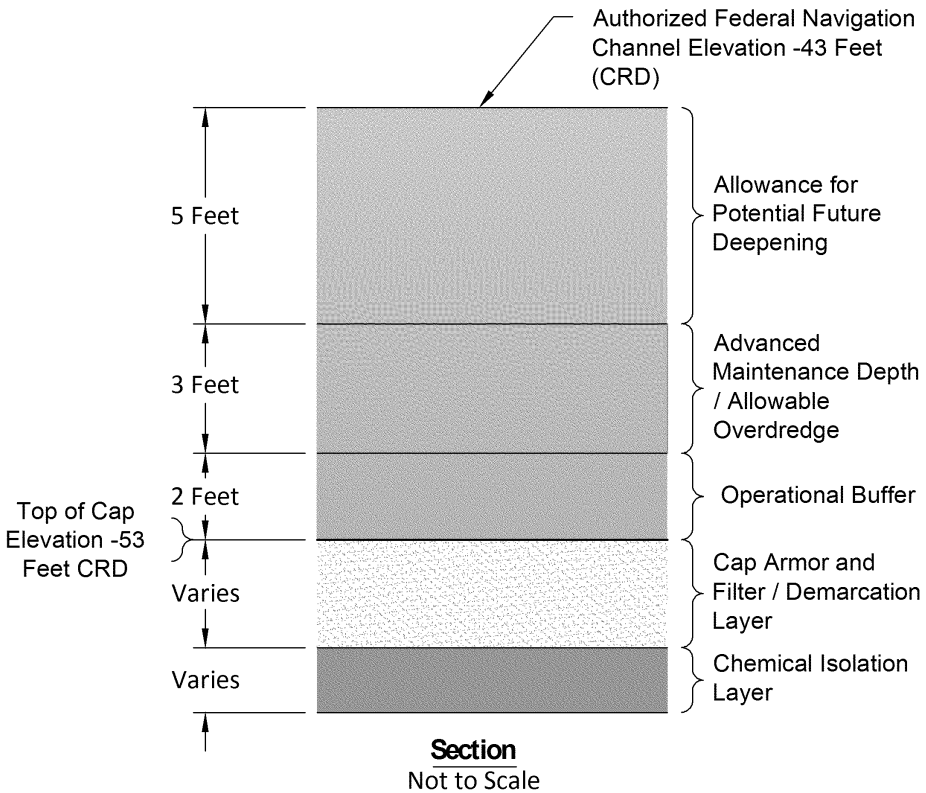
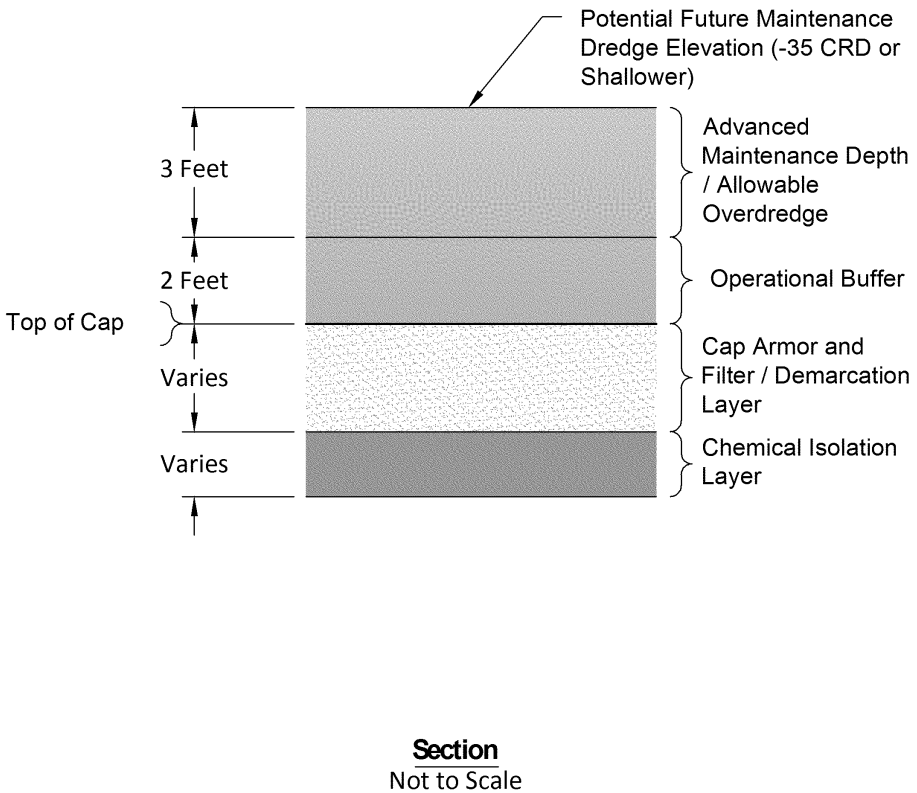
Figure 1
Portland Harbor RI/FS
Draft Feasibility Study
Preliminary Draft 404(b)(1) Alternatives Analysis
Water Depth Zone Cross Section

This figure shows the water depths needed above a potential cap such that the cap would not be compromised by navigation and maintenance dredging activities.



In Situ Cap Offset Requirements in Navigation Channels and Future Maintenance Dredge Areas Currently Maintained Equal to Navigation Channel Depths



In Situ Cap Offset Requirements in Potential Future Maintenance Dredge Areas Currently Maintained at Depths of 35 Feet CRD or Shallower

Note: This figure appears as Figure 6.2-28 in the Draft Feasibility Study.

Mar 16, 2012 9:24am heriksen K:\Jobs\010142-Lower_Williamette_Group\01014201\01014201-RP-LWG-039.dwg FIG 6_2-28 (LWG)

ANCHOR QEA

LWG Lower Willamette Group

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Figure2
Portland Harbor RI/FS
Draft Feasibility Study
In Situ Cap Offset Requirements in Navigation Channels

To: Coffey, Scott[CoffeySE@cdmsmith.com]; Blischke, Eric[blischkee@cdmsmith.com]; Rood, Stephen[RoodSG@cdmsmith.com]; Mullin, Jeanette[MullinJM@cdmsmith.com]; Gustavson, Karl[Gustavson.Karl@epa.gov]
From: King, Todd W.
Sent: Thur 7/3/2014 9:02:11 PM
Subject: FW: Updated Technology Screening Maps, Cross Sections, and Depth of Impact Maps
AQ_DepthOfImpact_SMA01.pdf
AQ_DepthOfImpact_SMA09U.PDF
AQ_DepthOfImpact_SMA14.pdf
Figure Set 1 and 2 EPA Technology Screening 7-2-2014.pdf

From: Jennifer Woronets [mailto:jworonets@anchorqea.com]
Sent: Thursday, July 03, 2014 4:59 PM
To: Koch, Kristine (Koch.Kristine@epa.gov)
Cc: Sean Sheldrake; King, Todd W.; Amanda Shellenberger; Carl Stivers; Jennifer Woronets; Jim McKenna (jim.mckenna@verdantllc.com); Patty Dost; Bob Wyatt
Subject: FW: Updated Technology Screening Maps, Cross Sections, and Depth of Impact Maps

Kristine,

Please see below and attached from Amanda.

Let us know if you have any questions.

Thank you,

Jen Woronets ☺

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From: Amanda Shellenberger
Sent: Thursday, July 03, 2014 1:51 PM
To: Jennifer Woronets
Subject: FW: Updated Technology Screening Maps, Cross Sections, and Depth of Impact Maps

Kristine -

To support the technology screening discussion next week on July 8th, and to fulfill action item #1 from the June 5th meeting, the maps and cross sections described below are provided. This information is being provided as part of the informal non-binding information exchange for the revised FS discussions.

Technology Screening Maps and Example Cross Sections (Figure Set 1 and 2)

Building upon the EPA Technology Screening Evaluation and cross section work submitted to the EPA on 6/2/2014, two sets of information were added to example cross sections SMA 1, SMA 9U and SMA 14. Based on changes to the EPA Technology Areas (6/9/2014), technology areas for SMA 3 and SMA 14 cross sections required updates, updated to other SMAs were minor, so technology areas for cross sections were not modified.

Figure Set 1 (a thru i) presents each SMA evaluated, the location of the cross section, and updated technology areas based on the updated EPA Technology Screening of 6/9/2014. Figure Set 2 (a.1 thru i) presents a complete set of cross sections. Note that Figures 2c, 2e, 2g, 2h, and 2i are included, but have not significantly changed since the prior submittal.

For SMA 1, SMA 9U, and SMA 14, the first cross section for each SMA shows RAL exceedances for both the Draft FS and the updated EPA RALs. It shows the depth of impact based on each set of RAL. There are two cores side by side to allow for a comparison of removal depths based on Draft FS versus EPA RALs. Core intervals exceeding EPA's preliminary draft "source" material criteria (5X the B RALs) are also shown. This was determined as follows using EPA RALs:

- PCBs – 4000 ppb
- Dioxin/Furan (2,3,7,8-TCDD Eq)- 0.60 ppb
- Total cPAH (BapEq) – 100,000 ppb
- Total DDx – 3250 ppb

For SMA 1, SMA 9U and SMA 14, the second cross section for each SMA shows which core intervals exceed either human health or ecological PRGs based on the most recent EPA PRG table (April 11, 2014). For human health PRGs, the lowest bioaccumulation or direct contact PRG was used. For ecological PRGs, the lowest bioaccumulation or sediment PRG were used. These are listed below for reference. It should be noted that of the cores that are shown on the cross sections for SMA 1, SMA 9U and SMA 14, no data was available for dioxin/furans, so this chemical was not evaluated.

- Human health preliminary remediation goals (PRGs)
  - PCBs – 6 ppb (EPA background/HH bioaccumulation PRG)
  - Dioxin/Furan (2,3,7,8-TCDD Eq)- 0.00003 ppb (HH bioaccumulation)
  - Total cPAH (BapEq) – 106 ppb (HH Direct Contact)
  - Total DDx – 7 ppb (HH bioaccumulation)
- Ecological PRGs
  - PCBs – 40 ppb (Eco bioaccumulation PRG)
  - Dioxin/Furan (2,3,7,8-TCDD Eq)- 0.54 ppb (Eco bioaccumulation)
  - Total cPAH (BapEq) – 23,000 ppb (Eco Sediment)
  - Total DDx – 573 ppb (Eco Sediment)

Depth of Impact Maps

Since the cross sections for SMA 1, 9U and 14 only show a small subset of cores. We also prepared maps in plan view that show the removal depth for each theissen polygon for SMAs 1, 9U, and 14. Similar to above, there are two sets of maps showing removal depth based on Draft FS RALs and EPA RALs for each alternative B through F. Lastly, there is one map that shows the removal depths if EPA PRG exceedances were used to determine removal depth for the Alternative F footprint. One each set of maps, the thiessen polygon is hatched to show if the core is "unbounded" meaning that there are screening level exceedances in the lowest interval of the core.

- Alternative B through F

o Draft FS Removal Depths (Depth-of-Impact with no removal deeper than 20 feet)

o Removal Depths based on EPA RALs (no removal greater than 15 feet as described in EPA's May 16, 2014 Dredge Depth Memo)

- Alternative F

- Removal Depths based on EPA PRG exceedances

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