2.4

Est. 11/12/96

Background Data Summary for the Reynolds Metals Facility

Sources

- Supplemental background data collected by CH2M HILL in Summer 1996
- Historical CH2M HILL data
- PRC data
- Fairview Creek data, collected as part of the Columbia Slough reference site study
- Lower Columbia River Bi-State Program

Available Data

Matrix	No. of Samples
Soil	
Upland	7
Wetland	7
Sediment	
Columbia River	9
Sandy River	5
Salmon Creek	11
Surface Water	
Columbia River	7
Sandy River	3
Salmon Creek	5
Groundwater	
Shallow	8
Deep	27
Fish Tissue	
Columbia River	11

Highlights

Cyanide: Cyanide not detected in any samples except for one shallow groundwater sample.

Fluoride: Fluoride detected in most soil and sediment samples. No fluoride detected in surface water samples and detected once in shallow groundwater samples.

Metals: Most metals detected in sediment and soils. Some low-level metals detected in surface water, groundwater, and fish tissue.

PAHs: No PAHs detected except in Columbia River and Salmon Creek sediments, in Salmon Creek surface water and in Columbia River fish tissue. All detections were at low concentrations

PCBs: No PCBs detected except in Salmon Creek sediment and Columbia River fish tissue.

TPH: TPH detected in Salmon Creek sediment and surface water.

USEPA SF
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23-SEPT-1996

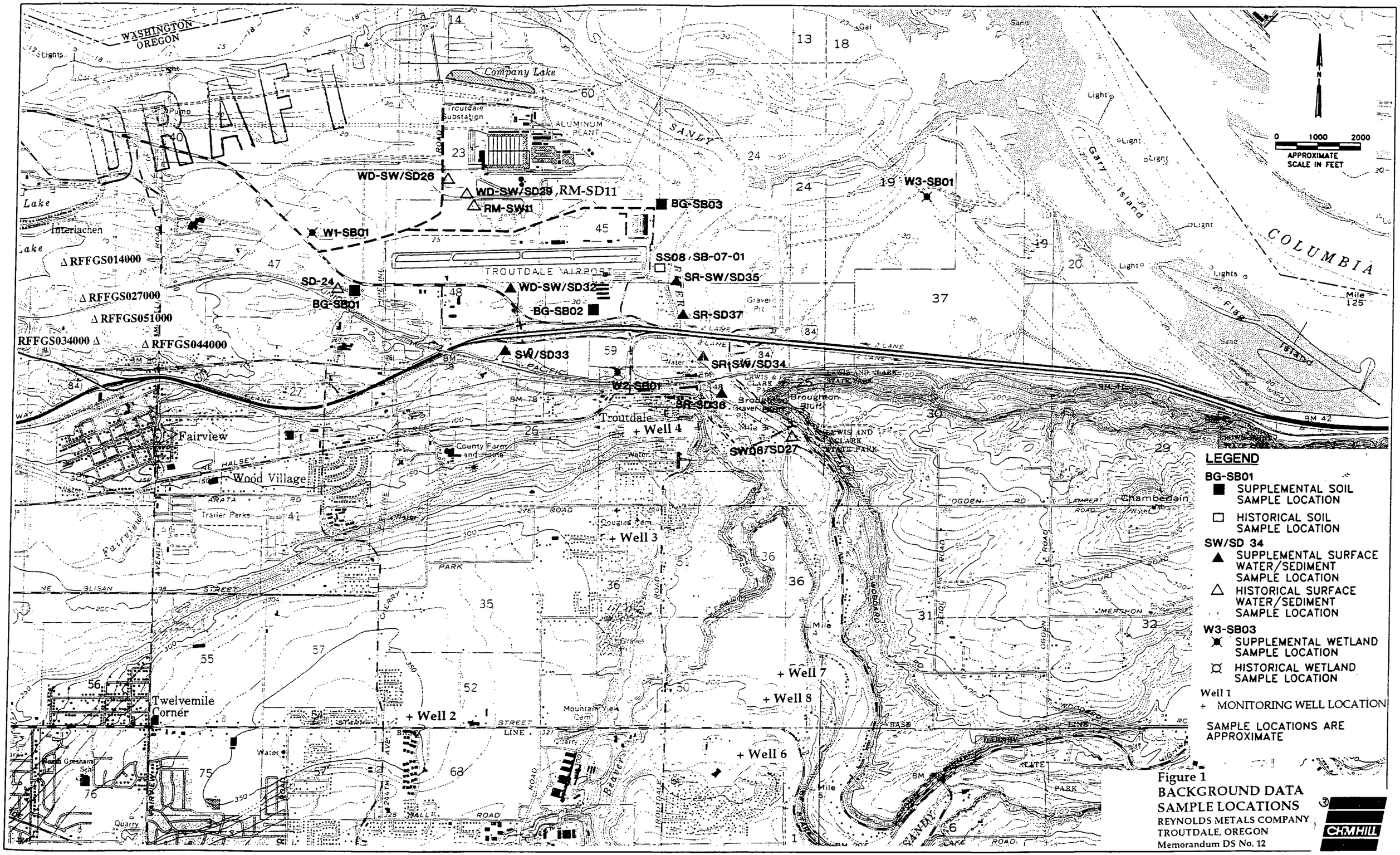
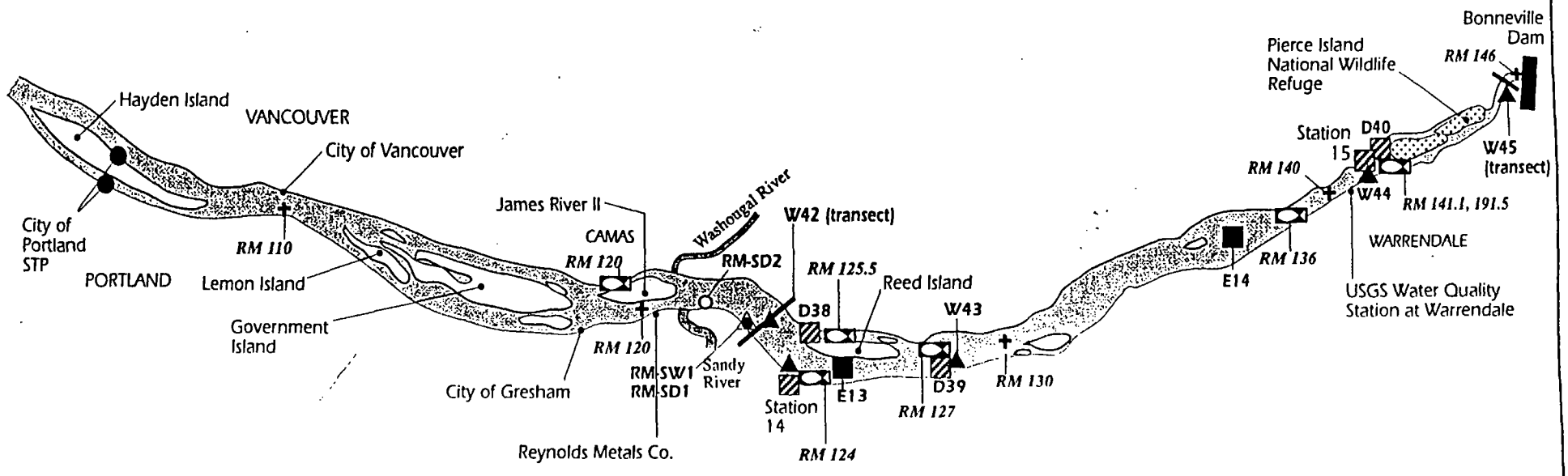


Figure 1
BACKGROUND DATA SAMPLE LOCATIONS
REYNOLDS METALS COMPANY
TROUTDALE, OREGON
Memorandum DS No. 12

CH2M HILL

107493.C0.ZZ Fig 3 CR SWS 11/11/96



LEGEND

- RM 110 — River mile
- Wildlife refuge
- D/E Depositional locations sampled for sediment*
- D/E Nondepositional locations sampled for sediment*
- Tetra Tech surface water sample location
- CH2M HILL sediment sample location
- CH2M HILL surface water and sediment sample location
- Tetra Tech fish sampling area

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NORTH

* Sampling locations were labeled before actual field work as D or E depending on whether they were expected to be depositional or nondepositional, respectively. Sediment grain-size analysis conducted after sample collection, however, resulted in some D locations being reclassified as nondepositional, and some E locations being reclassified as depositional.

Source: Tetra Tech, 1993 (Figure 1-4)

Figure 2
COLUMBIA RIVER SURFACE WATER, SEDIMENT AND FISH SAMPLE LOCATIONS
REYNOLDS METALS COMPANY
TROUTDALE, OREGON
Memorandum DS No. 12

CH2MHILL

Table 1
Summary of Background Data for Upland Surface Soil

Analyte (mg/kg)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide	7	0			1	2.6		
Fluoride (340.1/.2)	6	6	180	240			208	20
Fluoride (340.2)	6	3	2.6	3.7	2.5	2.5	3.3	0.6
Total Organic Carbon	6	6	7950	58100			25247	22354
Aluminum	7	7	7270	10500			8561	1346
Antimony	7	0			2.5	5.9		
Arsenic	7	7	0.984	1.6			1.3	0.2
Barium	7	7	22.8	63			43	16
Beryllium	7	1	0.48	0.48	0.5	0.5	0.48	
Cadmium	7	0			0.41	0.5		
Calcium	7	7	2200	2860			2461	258
Chromium	7	7	7.7	11.5			9.6	1.4
Cobalt	7	7	2.61	5.1			3.5	0.8
Copper	7	7	9.32	18.9			13.7	3.6
Iron	7	7	8160	11800			10354	1217
Lead	7	7	5.4	25.9			13.3	8.1
Magnesium	7	7	791	1590			1227	314
Manganese	7	7	68.5	192			125	38
Mercury	7	1	0.08	0.08	0.2	0.2	0.08	
Nickel	7	7	5.9	9.6			8.1	1.4
Potassium	7	6	240	422	263	263	320	73
Selenium	7	0			0.32	1		
Silver	7	0			0.33	1		
Sodium	7	7	363	670			471	131
Thallium	7	0			0.41	1		
Vanadium	7	7	32.1	58.1			40.0	9.1
Zinc	7	7	19.2	102			44.7	29.5

1 Average and standard deviation shown for detected concentrations only

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Table 2
Summary of Background Data for Wetland Soil

Analyte	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide	7	0			1	3		
Total Fluoride (340.1/.2)	6	6	120	250			178	51
Total Organic Carbon	7	7	17400	26100			21367	3301
Aluminum	7	7	4720	14600			9653	3660
Antimony	7	1	2.5	2.5	2.5	6.7	2.5	
Arsenic	7	7	0.84	11.9			4.69	4.01
Barium	7	7	33.8	107			75	32
Beryllium	7	4	0.51	0.72	0.50	0.50	0.60	0.10
Cadmium	7	2	0.64	0.77	0.47	0.50	0.71	0.09
Chromium	7	7	8.65	19.3			14.01	4.80
Cobalt	7	4	3.26	7.21	2.5	2.5	5.21	1.80
Copper	7	7	7.9	28.5			21.7	7.1
Iron	7	7	6190	122000			36849	43639
Lead	7	7	0.71	28			15.2	9.6
Magnesium	7	7	924	3950			2172	1225
Manganese	7	7	63.7	252			128	70
Mercury	7	0			0.09	0.20		
Nickel	7	7	5.25	15.5			11.1	4.6
Potassium	7	7	266	1900			768	702
Selenium	7	1	0.35	0.35	1	1	0.35	
Silver	7	0			0.37	1		
Sodium	7	7	262	647			419	148
Thallium	7	0			0.18	1		
Vanadium	7	7	33	125			64	40
Zinc	7	7	26.6	140			70	47

[1] Average and standard deviation shown for detected concentrations only

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Table 3
Summary of Background Data for Columbia River Sediment

Analyte (mg/kg)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide	4	0			0.1	1		
Fluoride (340.2M)	2	0			5	5		
Total Organic Carbon	9	9	400	37000			6500	11809
Aluminum	9	9	5000	16300			8815	4511
Antimony	9	0			0.25	5.19		
Arsenic	9	9	1.51	4.4			3.00	0.96
Barium	9	9	60.8	164.5			109.28	37.07
Beryllium	9	2	0.62	0.68	0.50	3.31	0.65	0.04
Cadmium	9	7	0.13	1.9	0.50	1	0.62	0.63
Calcium	2	2	2400	3600			3000	849
Chromium	9	9	5.47	18.9			10.59	5.09
Cobalt	2	2	11	12			11.50	0.71
Copper	9	9	2.39	24.8			10.29	7.82
Iron	9	9	10243	18900			15519	3122
Lead	9	8	4.83	17.6	10	10	10.1	5.1
Magnesium	2	2	2700	3500			3100	566
Manganese	2	2	270	270			270	
Mercury	9	2	0.07	0.08	0.058	0.20	0.08	0.01
Nickel	9	9	9.28	18			13.5	2.6
Potassium	2	2	440	770			605	233
Selenium	9	0			0.29	1.2		
Silver	9	0			0.10	1		
Sodium	2	2	200	220			210	14
Thallium	9	0			0.34	12.45		
Vanadium	2	2	45	46			46	0.7
Zinc	9	9	44.1	155			89	35

1 Average and standard deviation shown for detected concentrations only

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Table 4
Summary of Background Data for Sandy River Sediment

Analyte (mg/kg)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide	5	0			1	3.3		
Fluoride (340.1/.2)	5	5	119	160			134	17
Fluoride (340.2M)	4	0			2.5	2.5		
Total Organic Carbon	4	4	669	2650			1367	916
Aluminum	5	5	3890	8390			6038	1615
Antimony	5	0			2.5	7.2		
Arsenic	5	4	0.51	1.8	0.42	0.42	0.99	0.56
Barium	5	5	8	32.9			19.6	9.3
Beryllium	5	1	0.61	0.61	0.50	0.50	0.61	
Cadmium	5	0			0.50	0.50		
Calcium	5	5	2800	3450			3056	291
Chromium	5	5	7.76	14.7			11.3	2.6
Cobalt	5	5	3.22	7.5			4.7	1.7
Copper	5	5	10.4	15.2			11.9	2.0
Iron	5	5	8810	13100			11002	1570
Lead	5	1	0.26	0.26	5	5	0.26	
Magnesium	5	5	1370	1810			1616	200
Manganese	5	5	103	156			128	23
Mercury	5	0			0.10	0.20		
Nickel	5	5	7.13	11.2			9.3	1.5
Potassium	5	4	190	247	67	67	228	26
Selenium	4	0			1	1		
Silver	5	0			0.40	1		
Sodium	5	5	504	918			656	166
Thallium	5	0			0.21	1		
Vanadium	5	5	31.4	46.8			40.0	6.0
Zinc	5	5	17.1	38.4			27.6	8.6

1 Average and standard deviation shown for detected concentrations only

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Table 5
Summary of Background Data for Salmon Creek Sediment

Analyte (mg/kg)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide	11	0			0.022	1		
Fluoride (340.1/.2)	2	2	160	250			205	
Fluoride (340.2M)	1	0			5	5		
Total Organic Carbon	11	11	4400	29000			18209	7888
Aluminum	11	11	7600	25100			15052	5398
Antimony	11	0			0.08	2.5		
Arsenic	11	10	1.7	6.5	1	1	2.99	1.57
Barium	11	11	26	203			95	48
Beryllium	11	6	0.32	0.60	0.20	1	0.43	0.10
Cadmium	11	6	0.20	0.50	0.20	1	0.33	0.10
Calcium	5	5	3200	5200			3904	781
Chromium	11	11	11.7	39.9			22.05	8.61
Cobalt	11	11	4.71	15			9.85	3.15
Copper	11	11	12.1	55			22	12
Iron	11	11	11000	30700			21509	5714
Lead	11	10	10.8	49	10	10	26	11
Magnesium	5	5	1400	3330			2406	757
Manganese	11	11	76	563			265	152
Mercury	11	6	0.03	0.06	0.042	0.20	0.04	0.01
Nickel	11	11	9.62	21			15	4
Potassium	5	5	340	866			606	194
Selenium	11	4	0.18	0.40	0.20	1	0.25	0.10
Silver	11	5	0.03	0.05	0.20	1	0.04	0.01
Sodium	5	5	374	710			571	143
Thallium	11	0			0.09	1		
Vanadium	11	11	41.4	83			62	13
Zinc	11	11	62.3	200			118	46

1 Average and standard deviation shown for detected concentrations only

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Table 6
Summary of Background Data for Columbia River Water

Analyte (mg/L)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide	7	0			0.002	0.01		
Fluoride	5	0			0.50	0.50		
Hardness	7	7	51.3	62			56.74	3.684
Aluminum	7	4	0.443	1.3	0.10	0.27	0.822	0.444
Antimony	7	0			0.003	0.150		
Arsenic	7	0			0.003	0.005		
Barium	7	6	0.02	0.032	0.020	0.020	0.025	0.0047
Beryllium	7	0			0.002	0.020		
Cadmium	7	0			0.00004	0.0005		
Calcium	1	1	15	15			15	
Chromium	7	0			0.001	0.02		
Cobalt	1	0			0.05	0.05		
Copper	7	2	0.0026	0.005	0.0031	0.02	0.0038	0.0017
Iron	7	4	0.47	1.80	0.10	0.32	1.06	0.61
Lead	7	2	0.0011	0.0015	0.001	0.004	0.0013	0.0003
Magnesium	1	1	4.7	4.7			4.7	
Manganese	1	0			0.02	0.02		
Mercury	7	0			0.0001	0.0005		
Nickel	7	0			0.005	0.05		
Potassium	1	1	1	1			1	
Selenium	7	0			0.003	0.005		
Silver	7	0			0.001	0.02		
Sodium	1	1	6.2	6.2			6.2	
Thallium	7	0			0.001	0.36		
Vanadium	1	0			0.02	0.02		
Zinc	7	3	0.005	0.077	0.02	0.05	0.032	0.039

1 Average and standard deviation shown for detected concentrations only

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Table 7
Summary of Background Data for Sandy River Surface Water

Analyte (mg/L)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide	3	0			0.01	0.02		
Fluoride	3	0			0.10	0.25		
Hardness	2	2	18.7	18.7			18.7	
Aluminum	3	3	0.0895	0.15			0.12	0.03
Antimony	3	0			0.005	0.0287		
Arsenic	3	0			0.0011	0.004		
Barium	3	0			0.0051	0.02		
Beryllium	3	0			0.0003	0.0018		
Cadmium	3	0			0.002	0.002		
Chromium	3	0			0.005	0.010		
Cobalt	3	0			0.0104	0.050		
Copper	3	0			0.002	0.0022		
Iron	3	2	0.16	0.157	0.136	0.136	0.157	0.0007
Lead	3	1	0.0011	0.0011	0.001	0.001	0.0011	
Magnesium	3	3	1.18	1.73			1.55	0.32
Manganese	3	1	0.00	0.0047	0.02	0.02	0.0047	
Mercury	3	0			0.0002	0.0002		
Nickel	3	0			0.0153	0.04		
Potassium	3	0			0.537	1		
Selenium	3	1	0.00	.0016	0.005	0.005	0.002	
Silver	3	0			0.0016	0.003		
Sodium	3	3	2.46	3.91			3.36	0.78
Thallium	3	0			0.0008	0.002		
Vanadium	3	0			0.0047	0.02		
Zinc	3	0			0.05	0.0524		

1 Average and standard deviation shown for detected concentrations only

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Table 8
Summary of Background Data for Salmon Creek Water

Analyte (mg/L)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide					0.01	0.02		
Fluoride	5	0			0.25	0.50		
Hardness	3	3	57	63			61	3.4
Aluminum	5	2	0.10	0.14	0.05	0.10	0.12	0.03
Antimony	5	0			0.01	0.01		
Arsenic	5	0			0.004	0.004		
Barium	5	0			0.02	0.02		
Beryllium	5	0			0.0003	0.02		
Cadmium	5	0			0.0003	0.002		
Calcium	5	5	13	15.3			14.7	1.0
Chromium	5	0			0.01	0.02		
Cobalt	5	0			0.05	0.05		
Copper	5	0			0.002	0.02		
Iron	5	5	0.169	0.63			0.36	0.23
Lead	5	0			0.001	0.004		
Magnesium	5	5	5.6	6.2			6.0	0.2
Manganese	5	4	0.027	0.058	0.02	0.02	0.04	0.01
Mercury	5	0			0.0002	0.001		
Nickel	5	0			0.04	0.05		
Potassium	5	5	2.3	3.1			2.8	0.3
Selenium	5	0			0.004	0.01		
Silver	5	0			0.003	0.02		
Sodium	5	5	5.8	7.6			6.9	0.7
Thallium	5	0			0.002	0.004		
Vanadium	5	0			0.02	0.02		
Zinc	5	0			0.05	0.05		

1 Average and standard deviation shown for detected concentrations only

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Table 9
Summary of Background Data for Shallow Groundwater

Analyte (mg/L)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide	8	1	0.07	0.07	0.01	0.5	0.07	0.09
Fluoride (340.1/.2)	8	1						
Aluminum	4	4	0.191	2			0.69	0.88
Antimony	8	0			0.005	0.005		
Arsenic	8	0			0.004	0.004		
Barium	4	2	0.026	0.032	0.02	0.02	0.029	0.011
Beryllium	8	0			0.0003	0.02		
Cadmium	8	0			0.0003	0.02		
Calcium	4	3	8.5	12			10.2	1.8
Chromium	7	0			0.01	0.02		
Cobalt	2	0			0.05	0.05		-
Copper	8	0			0.002	0.02		
Iron	5	5	0.275	5			3.01	2.43
Lead	8	0			0.001	0.005		
Magnesium	3	3	2.6	5.3			3.6	1.5
Manganese	2	2	0.02	0.26			0.14	0.17
Mercury	8	0			0.0002	0.0005		
Nickel	8	0			0.04	0.1		
Potassium	3	3	2.7	3.9			3.5	0.7
Selenium	8	0			0.004	0.005		
Silver	6	0			0.003	0.02		
Sodium	3	3	5.8	7.1			6.5	0.7
Thallium	6	0			0.002	0.004		
Vanadium	2	0			0.02	0.02		
Zinc	8	0			0.05	0.1		

1 Average and standard deviation shown for detected concentrations only

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Table 10
Summary of Background Data for Deep Groundwater

Analyte (mg/L)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Total Cyanide	27	0			0.005	0.02		
Fluoride	23	6	0.2	0.3	0.2	0.2	0.3	0.06
Aluminum	6	1	0.064	0.064	0.05	0.1	0.064	
Antimony	27	0			0.0005	0.005		
Arsenic	23	6	0.0006	0.0006	0.0005	0.005	0.0027	0.0013
Barium	23	16	0.007	0.08	0.002	0.02	0.030	0.024
Beryllium	27	0			0.0003	0.001		
Cadmium	27	0			0.0005	0.002		
Calcium	6	6	11.3	44			19.6	12.2
Chromium	23	5	0.002	0.008	0.001	0.01	0.004	0.002
Cobalt	2	0			0.05	0.05	-	
Copper	6	0			0.002	0.0		
Iron	6	2	0.55	4.92	0.05	0.05	2.74	3.09
Lead	6	0			0.0005	0.001		
Magnesium	6	6	4.7	8.81			6.2	1.5
Manganese	6	6	0.026	0.593			0.19	0.23
Mercury	23	0			0.0002	0.005		
Nickel	27	0			0.01	0.05		
Potassium	2	2	1.9	2.24			2.1	0.2
Selenium	23	3	0.0006	0.0026	0.0005	0.005	0.0014	0.0010
Silver	6	0			0.0005	0.003		
Sodium	23	23	6.32	120			40	37
Thallium	27	0			0.0005	0.002		
Vanadium	2	0			0.02	0.02		
Zinc	6	0			0.02	0.05		

1 Average and standard deviation shown for detected concentrations only

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Table 11
Summary of Background Data for Fish Tissue

Analyte (mg/L)	No. of Samples	No. of Detects	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Average[1]	Standard Deviation[1]
Antimony	11	0			0.011	2.4		
Arsenic	11	2	0.27	0.84	0.034	0.58	0.56	0.40
Barium	11	9	1.2	3.7	0.1	0.1	2.9	1.0
Cadmium	11	9	0.039	0.29	0.02	0.02	0.09	1.73
Chromium	5	5	0.078	0.527			0.34	0.17
Copper	11	10	0.5	1.68	0.48	0.48	1.12	0.36
Lead	11	10	0.02	0.41	0.009	0.009	0.21	0.13
Mercury	11	10	0.051	0.215	0.001	0.001	0.12	0.05
Nickel	11	5	0.13	17.29	0.1	1.02	4.11	7.42
Selenium	11	0			0.034	0.58		
Silver	11	1	0.005	0.005	0.004	0.26	0.005	
Zinc	11	11	3.8	109.6			38.8	38.5

1 Average and standard deviation shown for detected concentrations only

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Appendix: Background Data

Table A1: Upland Soil

Table A2: Wetland Soil

Table A3: Columbia River Sediment

Table A4: Sandy River Sediment

Table A5: Salmon Creek Sediment

Table A6: Columbia River Surface Water

Table A7: Sandy River Surface Water

Table A8: Salmon Creek Surface Water

Table A9: Shallow Groundwater -- RMC Upgradient Wells

Table A10: Deep Groundwater -- RMC Upgradient Wells

Table A11: Deep Groundwater -- City of Troutdale Wells

Table A11: Columbia River Fish Tissue

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Table A1
Background Data for Upland Soils

Station ID	BG-SB01[a] Replicate A	BG-SB01[a] Replicate B	BG-SB02[a] Replicate A	BG-SB02[a] Replicate B	BG-SB03[a] Replicate A	BG-SB03[a] Replicate B	SS-08[b]
Location Description	South of Marine Drive, West of Eastwind Road		South of Airport		Northwest of Airport, South of RMC		East of Airport
Date Sampled	6/28/96	6/28/96	6/28/96	6/28/96	6/28/96	6/28/96	5/20/93
Analyte (mg/kg)							
Cyanide, Total	1 U	1 U	1 U	1 U	1 U	1 U	2.6 U
Fluoride (340.1/.2)	240	180	200	200	210	220	
Fluoride (340.2M)	2.5 U	2.5 U	2.6	2.5 U	3.5	3.7	
TOC	58100	49300	7950	8730	14700	12700	
Metals							
Aluminum	8200	9610	7370	7310	9670	10500	7270 J
Antimony	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5.9 U
Arsenic	1.4	1.6	0.984	1.1	1.4	1.1	1.3 B
Barium	57.3	44.4	22.8	23	63	52.5	39 B
Beryllium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.48 BJ
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.41 U
Calcium	2860	2580	2330	2260	2280	2200	2720 J
Chromium	11.5	11.2	8.97	7.7	8.53	9.15	10.3 J
Cobalt	3.57	2.61	3.57	3.16	3.44	3.38	5.1 B
Copper	16.8	15.5	9.98	9.32	13	12.1	18.9 J
Iron	9620	8160	11800	10300	10700	10400	11500
Lead	21.5	7.7	5.4	5.4	11.2	15.8	25.9
Magnesium	1590	1180	911	791	1510	1500	1110 J
Manganese	138	68.5	119	110	139	106	192 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.08 J
Nickel	9.07	7.92	6.74	5.9	8.85	8.8	9.6 J
Potassium	422	303	242	240	340	373	263 BU
Selenium	1 U	1 U	1 U	1 U	1 U	1 U	0.32 UJ
Silver	1 U	1 U	1 U	1 U	1 U	1 U	0.33 U
Sodium	363	372	628	670	368	504	393 B
Thallium	1 U	1 U	1 U	1 U	1 U	1 U	0.41 UJ
Vanadium	44.9	58.1	36.7	32.1	33.3	34.5	40.1
Zinc	60	102	20.6	19.2	31.9	28	51 J
PAHs							
Acenaphthene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Acenaphthylene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Anthracene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Benzo(a)anthracene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Benzo(a)pyrene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Benzo(b)fluoranthene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Benzo(g,h,i)perylene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Benzo(k)fluoranthene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Chrysene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Dibenzo(a,h)anthracene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Fluoranthene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Fluorene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Indeno(1,2,3-cd)pyrene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Naphthalene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Phenanthrene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
Pyrene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	10 U
PCBs							
Aroclor 1016							0.035 U
Aroclor 1221							0.071 U
Aroclor 1232							0.035 U
Aroclor 1242							0.035 U
Aroclor 1248							0.0044 R
Aroclor 1254							0.035 U
Aroclor 1260							0.035 U

U = Substance was not detected. Value given is lower quantification limit.
J = Estimated value.
R = Rejected data.
B = Below reporting limit and above instrument detection limit.

a = Source: Supplemental Background Data-Gathering
b = Source: Final Site Inspection Report (PRC, October 1993)

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Table A2
Background Data for Wetland Soil

Station ID	W1-SB01[a] Replicate A	W1-SB01[a] Replicate B	W2-SB01[a] Replicate A	W2-SB01[a] Replicate B	W3-SB01[a] Replicate A	W3-SB01[a] Replicate B	SD-24[b]
Location Description	At Intersection of Marine Drive and Sundial Road		West of Graham Road and South of I-84		East of Sandy River, North of I-84		South of Marine Drive, near Sundial Road
Date Sampled	6/28/96	6/28/96	6/28/96	6/28/96	6/28/96	6/28/96	5/20/93
Analyte (mg/kg)							
Cyanide, Total	1 U	1 U	1 U	1 U	1 U	1 U	3 U
Fluoride (340.1/.2)	170	120	140	160	250	230	
Fluoride (340.2M)	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	
TOC	22400	22500	22100	26100	17700	17400	
Metals							
Aluminum	11100	11500	6320	6930	12400	14600	4720 J
Antimony	2.5 U	2.5 U	2.5 U	2.5 U	2.5 J	2.5 U	6.7 UJ
Arsenic	11.9	6.76	1.1	1.4	5.97	4.87	0.84 BJ
Barium	94.2	96.6	33.8	52.8	104	107	37.7 B
Beryllium	0.72	0.63	0.5 U	0.5 U	0.5 U	0.51	0.53 B
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.77	0.64	0.47 U
Calcium	2910	2160	2780	3360	3610	3740	2680 J
Chromium	17.2	18	8.65	8.91	16.7	19.3	9.3
Cobalt	2.5 U	3.26	2.5 U	2.5 U	7.21	6.17	4.2 B
Copper	26.4	25.8	18.7	19.6	25.3	28.5	7.9 J
Iron	122000 D	70400	6190	6550	21500	21000	10300 J
Lead	18.3	21.2	6.3	11.1	21.1	28	0.71 J
Magnesium	1960	1560	924	1130	3810	3950	1870 J
Manganese	123	91.6	63.7	69.5	252	192	102 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.09 UJ
Nickel	15.1	13.7	5.25	5.81	14.4	15.5	7.6 B
Potassium	400	495	266	298	1670	1900	344 B
Selenium	1 U	1 U	1 U	1 U	1 U	1 U	0.35 R
Silver	1 U	1 U	1 U	1 U	1 U	1 U	0.37 U
Sodium	262	272	581	647	351	439	382 BJ
Thallium	1 U	1 U	1 U	1 U	1 U	1 U	0.18 U
Vanadium	125	118	33	37.8	47.9	51.6	34 J
Zinc	60.3	59.7	26.6	32.5	130	140	37.5 J
PAHs							
Acenaphthene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Acenaphthylene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Anthracene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Benzo(a)anthracene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.027 J
Benzo(a)pyrene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Benzo(b)fluoranthene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Benzo(g,h,i)perylene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Benzo(k)fluoranthene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.036 J
Chrysene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.035 J
Dibenzo(a,h)anthracene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Fluoranthene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.031 J
Fluorene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Indeno(1,2,3-cd)pyrene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Naphthalene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Phenanthrene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.39 U
Pyrene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.041 J
PCBs							
Aroclor 1016							0.039 U
Aroclor 1221							0.079 U
Aroclor 1232							0.039 U
Aroclor 1242							0.039 U
Aroclor 1248							0.039 U
Aroclor 1254							0.039 U
Aroclor1260							0.039 U

U = Substance was not detected. Value given is lower quantification limit.
J = Estimated value.
R = Rejected data.
B = Below reporting limit and above instrument detection limit.
D = Compound has been run at a dilution to bring the concentration of that compound within the linear range of the instrument

a = Source: Supplemental Background Data Gathering
b = Source: Final Site Inspection Report (PRC, October 1993)

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Table A3
Background Data for Columbia River Sediment

Station ID	RM-SD2[c]	RM-SD1[c]	Station 14[b]	D38[a]	E13[a]	D39[a]	E14[a]	D40[a]	Station 15[b]
River Mile	RM 121	RM 123	RM 124	RM 125	RM 125.5	RM 128	RM 137	RM 141	RM 141
Date Sampled	8/18/94	8/18/94	7/1/93	9/25/91	9/25/91	9/24/91	9/24/91	9/24/91	6/30/93
Analyte (mg/kg)									
Cyanide	0.1 U	0.1 U	0.1 U	1 U/R	1 U/R	1 U/R	1 U/R	1 U/R	0.1 U
Fluoride (340.2M)	5 U	5 U							
TOC	3900	1200	37000	700	400	600	800	4500	9400
Total Metals									
Aluminum	6400	5000	16200	5122 E	9032 E	5038 E	6904 E	9336 E	16300
Antimony	1.3 U	2.5 U	0.31 U	4.8 U/E	4.84 U/E	4.72 U/E	4.32 U/E	5.19 U/E	0.25 U
Arsenic	3.3	4	4.4 E	1.92 E	2.9 E	1.51 E	2.36 E	2.87 E	3.7
Barium	97	68	138	60.8 E	164.5 E	69.3 E	132.3 E	117.6 E	136
Beryllium	0.5 U	1 U	0.62	3.14 U/E	3.31 U/E	3.25 U/E	3.18 U/E	3.22 U/E	0.68
Cadmium	0.5 U	1 U	1.9	0.19	0.46	0.13	0.32	0.32	1.0
Calcium	3600	2400							
Chromium	12	10	18.6	6.72 E	5.48 E	8.82 E	5.47 E	9.34 E	18.9
Cobalt	12	11							
Copper	8.9	4.9	24.8	4.16 E	6.13 E	2.39 E	7.48 E	12.79 E	21.1
Iron	18000	16000	18400	10243 E	17742 E	11650 E	13521 E	15214 E	18900
Lead	8.6	10 U	17.6	8.03 E	7.15 E	5.19 E	4.83 E	12.35 E	17.4
Magnesium	3500	2700							
Manganese	270	270							
Mercury	0.2 U	0.2 U	0.08 E	0.064 U/E	0.065 U/E	0.063 U/E	0.058 U/E	0.069 U/E	0.07 E
Nickel	15	18	14.7	9.28 E	14.19 E	10.71 E	12.95 E	12.45 E	14.6
Potassium	770	440							
Selenium	0.5 U	1 U	1.2 U/E	0.32 U/E	0.32 U/E	0.31 U/E	0.29 U/E	0.69 U/E	1.0 U/E
Silver	0.5 U	1 U	0.10 U	0.29 U/E	0.29 U/E	0.28 U/E	0.26 U/E	0.31 U/E	0.11 U
Sodium	200	220							
Thallium	0.5 U	1 U	0.42 U/E	11.52 U/E	11.61 U/E	11.34 U/E	10.36 U/E	12.45 U/E	0.34 U/E
Vanadium	45	46							
Zinc	77	59	155	67.2 E	103.2 E	44.1 E	66.2 E	114.1 E	117
PAHs									
Acenaphthene	0.0067 U	0.0067 U	0.003	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.00072
Acenaphthylene	0.0067 U	0.0067 U	0.00038 J	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.00065 U
Anthracene	0.2	0.0067 U	0.0027	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.0012
Benzo(a)anthracene	0.073	0.0067 U	0.037	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.0053
Benzo(a)pyrene	0.014	0.0067 U	0.035	0.084 U	0.084 U	0.084 U	0.080 U	0.092 U	0.0048
Benzo(b)fluoranthene	0.065	0.0067 U		0.084 U	0.084 U	0.084 U	0.080 U	0.092 U	
Benzo(g,h,i)perylene	0.011	0.0067 U	0.022	0.084 U	0.084 U	0.084 U	0.080 U	0.092 U	0.0033 U/B
Benzo(k)fluoranthene	0.021	0.0067 U		0.084 U	0.084 U	0.084 U	0.080 U	0.092 U	
Chrysene	0.11	0.0067 U	0.050	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.0065
Dibenzo(a,h)anthracene	0.0067 U	0.0067 U	0.0097 J	0.084 U	0.084 U	0.084 U	0.080 U	0.092 U	0.0015
Fluoranthene	0.3	0.0067 U	0.0390	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.0085
Fluorene	0.015	0.0067 U	0.0025	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.00086
Indeno(1,2,3-cd)pyrene	0.011	0.0067 U	0.0240	0.084 U	0.084 U	0.084 U	0.080 U	0.092 U	0.0045 U/B
Naphthalene	0.0067 U	0.0067 U	0.0022	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.0010
Phenanthrene	0.074	0.0067 U	0.019	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.0068
Pyrene	0.2	0.0067 U	0.047	0.042 U	0.042 U	0.042 U	0.040 U	0.046 U	0.0087
PCBs									
Aroclor 1016	0.05 U	0.05 U		0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	
Aroclor 1242/1016			0.010 U						0.10 U
Aroclor 1221	0.1 U	0.1 U	0.020 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.02 U
Aroclor 1232	0.05 U	0.05 U	0.010 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.01 U
Aroclor 1242	0.05 U	0.05 U		0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	
Aroclor 1248	0.05 U	0.05 U	0.010 U/E	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.010 U
Aroclor 1254	0.05 U	0.05 U	0.010 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.010 U
Aroclor 1260	0.05 U	0.05 U	0.010 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.010 U
Total PCBs			0.070 U						0.070 U
TPH (mg/L)									
TPH (418.1)	20 U	20 U							

E = Estimated Value.
R = Rejected data.
U = Compound was not detected. Value is the lower quantification limit.
U/B = Compound was not detected due to blank contamination.

a = Source: Reconnaissance Survey of the Lower Columbia River (Tetra Tech, January 1993)
b = Source: Lower Columbia River Backwater Reconnaisance Survey (Tetra Tech, May 1994)
c = Source: Draft Current Situation Summary (CH2M HILL, April 1996)

Table A4
Background Data for Sandy River Sediment

Station ID	SR-SD34[a]	SR-SD35[a]	SR-SD36[a]	SR-SD37[a]	SD-27[b]
Location Description	Between Railroad and I-84	North of I-84, East of Airport	South of Railroad	North of I-84, Downstream of WWTP	South of Railroad
Date Sampled	6/24/96	6/24/96	6/24/96	6/24/96	5/19/93
Analyte					
Cyanide, Total	1 U	1 U	1 U	1 U	3.3 U
Fluoride (340.1/.2)	160	120	140	130	119
Fluoride (340.2 M)	2.5 U	2.5 U	2.5 U	2.5 U	
TOC	750	1400	2650	669	
Metals					
Aluminum	5890	5650	8390	6370	3890 J
Antimony	2.5 U	2.5 U	2.5 U	2.5 U	7.2 UJ
Arsenic	0.51	0.75	0.88	1.8	0.42 U
Barium	14.8	22.8	32.9	19.7	8 B
Beryllium	0.5 U	0.5 U	0.5 U	0.5 U	0.61 B
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Calcium	3450	2800	2900	3280	2850 J
Chromium	7.76	10.9	14.7	10.7	12.5
Cobalt	3.22	3.79	4.85	4.1	7.5 B
Copper	11	10.4	12.2	15.2	10.5 J
Iron	8810	10400	13100	11200	11500 J
Lead	5 U	5 U	5 U	5 U	0.26 BJ
Magnesium	1370	1800	1810	1650	1450 J
Manganese	150	113	156	120	103 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.1 UJ
Nickel	7.13	9.29	11.2	9.11	10 B
Potassium	190	231	247	242	67 U
Selenium	1 U	1 U	1 U	1 U	0.42 R
Silver	1 U	1 U	1 U	1 U	0.4 U
Sodium	918	565	577	715	504 J
Thallium	1 U	1 U	1 U	1 U	0.21 U
Vanadium	31.4	38.2	44.2	39.2	46.8 J
Zinc	17.1	21.3	28.1	38.4	32.9 J
PAHs					
Acenaphthene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Acenaphthylene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Anthracene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Benzo(a)anthracene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Benzo(a)pyrene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Benzo(b)fluoranthene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Benzo(g,h,i)perylene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Benzo(k)fluoranthene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Chrysene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Dibenzo(a,h)anthracene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Fluoranthene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Fluorene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Indeno(1,2,3-cd)pyrene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Naphthalene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Phenanthrene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
Pyrene	0.3 U	0.3 U	0.3 U	0.3 U	0.45 U
PCBs					
Total PCBs	0.3 U	0.3 U	0.3 U	0.3 U	

U = Substance was not detected. Value given is lower quantification limit.
J = Estimated value.
R = Rejected data.
B = Below reporting limit and above instrument detection limit.

a = Source: Supplemental Background Data-Gathering
b = Source: Final Site Inspection Report (PRC, October 1993)

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Table A5
Background Data for Salmon Creek Sediment

	Salmon Creek					Fairview Creek					
Station ID	WD-SD32[a]	WD-SD33[a]	RM-SD11[b]	WD-SD29[b]	WD-SD26[b]	RFGS014000[c]	RFGS014001[c]	RFGS027000[c]	RFGS034000[c]	RFGS044000[c]	RFGS051000[c]
Location Description	Upstream of Troutdale Airport	Upstream of I-84	North Side of Graham Road	North Side of Graham Road	Upstream of West Drainage	Upstream of culvert crossing	Upstream of culvert crossing	Downstream of railroad crossing	Downstream of overhead power lines	Downstream of Blue Lake Road	Upstream of railroad crossing
Date Sampled	7/2/96	7/2/96	8/19/94	2/23/95	2/22/95	10/5/95	10/5/95	10/5/95	10/6/95	10/6/95	10/6/95
Analyte (mg/kg)											
Cyanide, Total	1 U	1 U	0.5 U	0.067 U	0.043 U	0.21 U	0.21 U	0.025 U	0.022 U	0.48 U	0.41 U
Fluoride (340.1/.2)	250	160									
Fluoride (340.2M)			5 U								
TOC	8100	13800	25000	18000	4400	16000	14000	20000	26000	29000	26000
Metals											
Aluminum	8270	10300	13000	13000	7600	15400	15300	17200	20400	20000	25100
Antimony	2.5 U	2.5 U	0.5 UJ	1.3 U	1.3 U	0.09 U	0.09 U	0.6 U	0.08 U	0.1 U	0.1 U
Arsenic	1.7	2.7	2.1	3.1	1 U	1.7	1.9	2.8	6.5	2.4	5.0
Barium	39.3	63.3	72 L	92	26	95.9	94.2	105	128	128	203
Beryllium	0.5 U	0.5 U	0.2 U	1 U	1 U	0.36	0.32	0.40	0.47	0.40	0.60
Cadmium	0.5 U	0.5 U	0.2 U	1 U	1 U	0.3	0.2	0.4	0.3	0.5	0.3
Calcium	3460	3660	5200	4000 L	3200						
Chromium	11.7	17	14	23	12	22.4	20.8	23.1	32	26.7	39.9
Cobalt	4.71	7.78	13	15	8.1	7.8	7.3	8.8	13.4	10.6	11.9
Copper	12.1	14	16	31	55 J	16.6	16.5	18.7	18.8	20.5	23.8
Iron	13300	21300	24000	25000	11000	19000	19000	22300	24900	26100	30700
Lead	10.8	16.2	16	31	10 U	22	21	31	29	34	49
Magnesium	1900	3330	2700	2700 L	1400						
Manganese	120	269	360	170 L	76	189	185	258	236	563	495
Mercury	0.2 U	0.2 U	0.042 U	0.14 U	0.2 U	0.03	0.03	0.04	0.04	0.04	0.06
Nickel	9.62	13	12	15	11	15.2	12.8	15	20.8	17	21
Potassium	533	866	600	710	480						
Selenium	1 U	1 U	0.2 UL	1 U	1 U	0.18	0.20	0.6 U	0.40	0.20	0.6 U
Silver	1 U	1 U	0.2 U	1 U	1 U	0.04	0.03	0.2 U	0.04	0.05	0.05
Sodium	693	364	600	690	340						
Thallium	1 U	1 U	0.2 U	1 U	1 U	0.09 U	0.1 U	0.1 U	0.4 U	0.5 U	0.6 U
Vanadium	41.4	57.8	64 L	83 L	58	49.4	49.5	59.7	71.3	71.1	82.2
Zinc	62.3	74.3	130 L	200	69	110	107	137	85	187	137
PAHs											
Acenaphthene	0.3 U	0.3 U	0.034 U	0.034 U	0.034 U						
Acenaphthylene	0.3 U	0.3 U	0.034 U	0.034 U	0.034 U						
Anthracene	0.3 U	0.3 U	0.034 U	0.034 U	0.077	0.035 U	0.035 U	0.04 U	0.034 U	0.037 J	0.04 U
Benzo(a)anthracene	0.3 U	0.3 U	0.034 U	0.085	0.44	0.016	0.013	0.023 j	0.0081	0.062	0.028
Benzo(a)pyrene	0.3 U	0.3 U	0.034 U	0.14	0.53	0.025	0.019	0.037 j	0.014	0.073	0.05
Benzo(b)fluoranthene	0.3 U	0.3 U	0.22	0.29	0.84	0.044	0.026	0.059 j	0.018	0.11	0.11
Benzo(g,h,i)perylene	0.3 U	0.3 U	0.18	0.12 J	0.4						
Benzo(k)fluoranthene	0.3 U	0.3 U	0.034 U	0.092	0.29	0.023	0.018	0.036	0.013 J	0.067	0.056
Chrysene	0.3 U	0.3 U	0.034 U	0.17	0.52						
Dibenzo(a,h)anthracene	0.3 U	0.3 U	0.034 U	0.034 U	0.097	0.0042	0.0039	0.0081 j	0.0027	0.012	0.0083
Fluoranthene	0.3 U	0.3 U	0.034 U	0.19	0.68						
Fluorene	0.3 U	0.3 U	0.034 U	0.034 U	0.034 U						
Indeno(1,2,3-cd)pyrene	0.3 U	0.3 U	0.16	0.1	0.32	0.026	0.024	0.027 j	0.014 JM	0.045 M	0.04
Naphthalene	0.3 U	0.3 U	0.034 U	0.034 U	0.034 U						
Phenanthrene	0.3 U	0.3 U	0.034 U	0.085	0.34	0.022	0.015	0.027	0.014 J	0.13	0.038
Pyrene	0.3 U	0.3 U	0.14	0.21	0.58	0.045	0.038	0.065	0.024	0.13	0.1

Table A5
Background Data for Salmon Creek Sediment

	Salmon Creek					Fairview Creek					
Station ID	WD-SD32[a]	WD-SD33[a]	RM-SD11[b]	WD-SD29[b]	WD-SD26[b]	RFGS014000[c]	RFGS014001[c]	RFGS027000[c]	RFGS034000[c]	RFGS044000[c]	RFGS051000[c]
Location Description	Upstream of Troutdale Airport	Upstream of I-84	North Side of Graham Road	North Side of Graham Road	Upstream of West Drainage	Upstream of culvert crossing	Upstream of culvert crossing	Downstream of railroad crossing	Downstream of overhead power lines	Downstream of Blue Lake Road	Upstream of railroad crossing
Date Sampled	7/2/96	7/2/96	8/19/94	2/23/95	2/22/95	10/5/95	10/5/95	10/5/95	10/6/95	10/6/95	10/6/95
Analyte (mg/kg)											
PCBs											
Aroclor 1016			0.05 U	0.05 U	0.05 U	0.098 U	0.098 U	0.12 U	0.096 U	0.12 Uuj	0.12 U
Aroclor 1221			0.1 U	0.1 U	0.1 U	0.12 U	0.12 U	0.14 U	0.11 U	0.14 Uuj	0.14 U
Aroclor 1232			0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.06 U	0.049 U	0.06 Uuj	0.06 U
Aroclor 1242			0.05 U	0.05 U	0.05 U						
Aroclor 1248			0.05 U	0.05 U	0.05 U	0.039 U	0.039 U	0.47 U	0.038 U	0.046 Uuj	0.047 U
Aroclor1254			0.05 U	0.05 U	0.12	0.12 U	0.12 U	0.14 U	0.12 U	0.14 Uuj	0.14 U
Aroclor1260			0.05 U	0.05 U	0.05 U	0.096 U	0.096 U	0.11 U	0.094 U	0.11 Uuj	0.12 U
Total PCBs	0.3 U	0.3 U									
TPH											
Gasoline (Method TPH-G)			2 U								
Diesel (Method TPH-D)			170								
Heavy/Bunker (Method TPH418.1-M)			290								
Gasoline (Method TPH-HCID)				20 U	100 U						
Diesel (Method TPH-HCID)				50 U	280[d]						
Heavy/Bunker (Method TPH-HCID)				100 U	1200[d]						

U = Substance was not detected. Value given is lower quantification limit
J = Estimated value
L = Estimated value, may be low on basis of spike recovery
M = Estimated value, analyte found but with low spectral match
j = Positive identification but below sample detection limit
uj = Analyte was not detected and reported quantitation is considered an estimate.

a = Source: Supplemental Background Data-Gathering
b = Source: Draft Current Situation Summary (CH2M HILL, April 1996)
c = Source: Focused Remedial Investigation Report for Buffalo Slough and Reference Sites (Parametrix, May 1996)
d = Oregon DEQ TPH-HCID is a screening method. Any results above detection limit are estimated values.

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Table A6
Background Data for Columbia River Surface Water

Station ID	RM-SW1[a]	W42-T[b]	Station 14[c]	W43[b]	W44[b]	Station 15[c]	W45-T[b]
River Mile	RM 123	RM 123.5	RM124	RM 128.5	RM141	RM141	RM146
Date Sampled	8/18/94	9/25/91	7/1/93	9/24/91	9/26/91	6/30/93	9/26/91
Analyte (mg/L)							
Cyanide	0.01 U	0.002 U/E	0.002 U	0.002 U/E	0.002 U/E	0.002 U	0.002 U/E
Fluoride	0.5 U	0.5 U		0.5 U	0.5 U		0.5 U
Hardness	57	57	51.3	53	57	59.9	62
Total Metals							
Aluminum	0.1 U	1.100 E	0.443 E	1.300 E	0.250 U/E	0.445	0.270 U/E
Antimony	0.005 U	0.015 U/E	0.003 U	0.150 U/E	0.015 U/E	0.003 U	0.015 U/E
Arsenic	0.004 U	0.005 U/E	0.003 U	0.005 U/E	0.005 U/E	0.003 U	0.005 U/E
Barium	0.02 U	0.032 E	0.020	0.022 E	0.027 E	0.021	0.028 E
Beryllium	0.02 U	0.005 U/E	0.002 U/E	0.005 U/E	0.005 U/E	0.002 U/E	0.005 U/E
Cadmium	0.0003 U	0.0005 U/E	0.0001 U	0.0005 U/E	0.0005 U/E	0.00004 U/B	0.0005 U/E
Calcium	15						
Chromium	0.02 U	0.005 U/E	0.001 U	0.005 U/E	0.005 U/E	0.001 U	0.005 U/E
Cobalt	0.05 U						
Copper	0.02 U	0.005 U/E	0.0031 U/B	0.005 E	0.005 U/E	0.0026	0.005 U/E
Iron	0.1 U	1.300 E	0.657	1.800 E	0.320 U/E	0.468	0.310 U/E
Lead	0.004 U	0.001 U/E	0.0011	0.001 U/E	0.001 U/E	0.0015	0.001 U/E
Magnesium	0.02 U						
Manganese	4.7						
Mercury	0.0005 U	0.0005 U/E	0.00011 U	0.0005 U/E	0.0005 U/E	0.00011 U	0.0005 U/E
Nickel	0.05 U	0.040 U/E	0.005 U	0.040 U/E	0.040 U/E	0.005 U	0.040 U/E
Potassium	1						
Selenium	0.004 U	0.005 U/E	0.003 U	0.005 U/E	0.005 U/E	0.003 U	0.005 U/E
Silver	0.02 U	0.002 U/E	0.001 U	0.002 U/E	0.002 U/E	0.001 U	0.002 U/E
Sodium	6.2						
Thallium	0.004 U	0.036 U/E	0.001 U	0.360 U/E	0.036 U/E	0.001 U	0.036 U/E
Vanadium	0.02 U						
Zinc	0.05 U	0.077 E	0.013 E	0.020 U/E	0.020 U/E	0.005 E	0.020 U/E
PAHs							
Acenaphthene	0.005 U						0.002 U
Acenaphthylene	0.005 U						0.002 U
Anthracene	0.005 U						0.002 U
Benzo(a)anthracene	0.0001 U						0.002 U
Benzo(b)fluoranthene	0.0001 U						0.004 U
Benzo(k)fluoranthene	0.0001 U						0.004 U
Benzo(a)pyrene	0.0001 U						0.004 U
Benzo(g,h,i)perylene	0.0001 U						0.004 U
Chrysene	0.0001 U						0.002 U
Dibenzo(a,h)anthracene	0.0001 U						0.004 U
Fluoranthene	0.0001 U						0.002 U
Fluorene	0.005 U						0.002 U
Indeno(1,2,3-cd)pyrene	0.0001 U						0.004 U
Naphthalene	0.005 U						0.002 U
Phenanthrene	0.005 U						0.002 U
Pyrene	0.0005 U						0.002 U
PCBs							
Aroclor 1016	0.001 U						0.0005 U
Aroclor 1221	0.002 U						0.0005 U
Aroclor 1232	0.001 U						0.0005 U
Aroclor 1242	0.001 U						0.0005 U
Aroclor 1248	0.001 U						0.0005 U
Aroclor 1254	0.001 U						0.0005 U
Aroclor 1260	0.001 U						0.0005 U
TPH (mg/L)							
Gasoline	0.2 U						
Diesel/related (C12-C24)	0.5 U						
Heavy oil/related (C24-C	1 U						

U = Compound was not detected. Value is the lower quantification limit.
E = Estimated value.
U/B = Compound was not detected due to blank contamination.

a = Source: Draft Current Situation Summary (CH2M HILL, April 1996)
b = Source: Reconnaissance Survey of the Lower Columbia River (Tetra Tech, January 1993)
c = Source: Lower Columbia River Backwater Reconnaisance Survey (Tetra Tech, May 1994)

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Table A7
Background Data for Sandy River Surface Water

Station ID	SR-SW34[a]	SR-SW35[a]	SW-08[b]
Location Description	Between Railroad and I-84	North of I-84, East of Airport	South of Railroad
Date Sampled	6/24/96	6/24/96	5/19/93
Analyte (mg/L)			
Cyanide, Total	0.02 U	0.02 U	0.01 U
Fluoride	0.25 U	0.25 U	0.1 U
Hardness	18.7	18.7	
Total Metals			
Aluminum	0.13	0.15	0.0895
Antimony	0.005 U	0.005 U	0.0287 U
Arsenic	0.004 U	0.004 U	0.0011 U
Barium	0.02 U	0.02 U	0.0051 U
Beryllium	0.0003 U	0.0003 U	0.0018 U
Cadmium	0.002 U	0.002 U	0.002 U
Calcium	4.63	4.62	3.33
Chromium	0.01 U	0.01 U	0.005 U
Cobalt	0.05 U	0.05 U	0.0104 U
Copper	0.002 U	0.002 U	0.0022 U
Iron	0.156	0.157	0.136 U
Lead	0.001 U	0.0011	0.001 UJ
Magnesium	1.73	1.73	1.18
Manganese	0.02 U	0.02 U	0.0047
Mercury	0.0002 U	0.0002 U	0.0002 U
Nickel	0.04 U	0.04 U	0.0153 U
Potassium	1 U	1 U	0.537 U
Selenium	0.005 U	0.005 U	0.0016 R
Silver	0.003 U	0.003 U	0.0016 U
Sodium	3.7	3.91	2.46
Thallium	0.002 U	0.002 U	0.0008 UJ
Vanadium	0.02 U	0.02 U	0.0047 U
Zinc	0.05 U	0.05 U	0.0524 U
PAHs			
Acenaphthene	0.0001 U	0.0001 U	0.01 U
Acenaphthylene	0.0001 U	0.0001 U	0.01 U
Anthracene	0.0001 U	0.0001 U	0.01 U
Benzo(a)anthracene	0.0001 U	0.0001 U	0.01 U
Benzo(a)pyrene	0.0001 U	0.0001 U	0.01 U
Benzo(b)fluoranthene	0.0001 U	0.0001 U	0.01 U
Benzo(g,h,i)perylene	0.0001 U	0.0001 U	0.01 U
Benzo(k)fluoranthene	0.0001 U	0.0001 U	0.01 U
Chrysene	0.0001 U	0.0001 U	0.01 U
Dibenz(a,h)anthracene	0.0001 U	0.0001 U	0.01 U
Fluoranthene	0.0001 U	0.0001 U	0.01 U
Fluorene	0.0001 U	0.0001 U	0.01 U
Indeno(1,2,3-cd)pyrene	0.0001 U	0.0001 U	0.01 U
Naphthalene	0.0001 U	0.0001 U	0.01 U
Phenanthrene	0.0001 U	0.0001 U	0.01 U
Pyrene	0.0001 U	0.0001 U	0.01 U
PCBs			
Aroclor 1016			0.001 U
Aroclor 1221			0.002 U
Aroclor 1232			0.001 U
Aroclor 1242			0.001 U
Aroclor 1248			0.001 U
Aroclor1254			0.001 U
Aroclor1260			0.001 U
Total PCBs	0.001 U	0.001 U	

J = Estimated value
R = Rejected data
U = Substance was not detected. Value given is lower quantification limit

a = Source: Supplemental Background Data Gathering
b = Source: Final Site Inspection Report (PRC, October 1993)

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Table A8
Background Data for Salmon Creek Surface Water

Station ID	WD-SW32[a]		WD-SW33[a]		RM-SW11[b]		WD-SW29[b]		WD-SW26[b]	
Location Description	Upstream of Troutdale Airport		Upstream of I-84		North Side of Graham Road		South Side of Graham Road		Upstream of West Drainage	
Date Sampled	7/2/96		7/2/96		8/18/94		2/23/95		2/22/95	
Analyte (mg/L)										
Cyanide, Total	0.02	U	0.02	U	0.01	U	0.01	U	0.01	U
Fluoride	0.25	U	0.25	U	0.5	U	0.5	U	0.5	U
Hardness	62.7		63.1		57					
Total Metals										
Aluminum	0.05	U	0.05	U	0.1		0.1	U	0.14	
Antimony	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Arsenic	0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
Barium	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Beryllium	0.0003	U	0.0003	U	0.02	U	0.02	U	0.02	U
Cadmium	0.002	U	0.02	U	0.0003	U	0.0003	U	0.0003	U
Calcium	15.3		15.3		13		15		15	
Chromium	0.01	U	0.01	U	0.02	U	0.02	U	0.02	U
Cobalt	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Copper	0.002	U	0.002	U	0.02	U	0.02	U	0.02	U
Iron	0.23		0.169		0.17		0.6		0.63	
Lead	0.001	U	0.001	U	0.004	U	0.004	U	0.004	U
Magnesium	5.96		6.04		6		5.6		6.2	
Manganese	0.0351		0.0271		0.02	U	0.05		0.058	
Mercury	0.0002	U	0.0002	U	0.0005	U	0.0005	U	0.0005	U
Nickel	0.04	U	0.04	U	0.05	U	0.05	U	0.05	U
Potassium	3		3.01		2.3		2.7		3.1	
Selenium	0.005	U	0.005	U	0.004	U	0.004	U	0.004	U
Silver	0.003	U	0.003	U	0.02	U	0.02	U	0.02	U
Sodium	7.01		6.68		5.8		7.6		7.2	
Thallium	0.002	U	0.002	U	0.004	U	0.004	U	0.004	U
Vanadium	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U
Zinc	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
PAHs										
Acenaphthene	0.0001	U	0.0001	U	0.005	U	0.0001	U	0.0001	U
Acenaphthylene	0.0001	U	0.0001	U	0.005	U	0.0001	U	0.0001	U
Anthracene	0.0001	U	0.0001	U	0.005	U	0.0001	U	0.0001	U
Benzo(a)anthracene	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Benzo(a)pyrene	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Benzo(b)fluoranthene	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.00011	
Benzo(g,h,i)perylene	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Benzo(k)fluoranthene	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Chrysene	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Dibenz(a,h)anthracene	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U
Fluoranthene	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.00011	
Fluorene	0.0001	U	0.0001	U	0.005	U	0.0001	U	0.0001	U
Indeno(1,2,3-cd)pyrene	0.0001	U	0.0001	U	0.0001	U	0.0002	U	0.0002	U
Naphthalene	0.0001	U	0.0001	U	0.005	U	0.0001	U	0.0001	U
Phenanthrene	0.0001	U	0.0001	U	0.005	U	0.0001	U	0.0001	U
Pyrene	0.0001	U	0.0001	U	0.0005	U	0.0001	U	0.00013	
PCBs										
Aroclor 1016					0.001	U	0.0005	U	0.0005	U
Aroclor 1221					0.002	U	0.001	U	0.001	U
Aroclor 1232					0.001	U	0.0005	U	0.0005	U
Aroclor 1242					0.001	U	0.0005	U	0.0005	U
Aroclor 1248					0.001	U	0.0005	U	0.0005	U
Aroclor1254					0.001	U	0.0005	U	0.0005	U
Aroclor1260					0.001	U	0.0005	U	0.0005	U
Total PCBs	0.001	U	0.001	U						
TPHs										
Gasoline					0.2	U	0.08	U	0.08	U
Diesel/related (C12-C24)					0.5	U	0.28		0.3	U
Heavy oil/related (C24-C40)					1	U	0.5	U	0.6	U

U = Substance was not detected. Value given is lower quantification limit.

a = Source: Supplemental Background Data-Gathering
b = Source: Draft Current Situation Summary (CH2M HILL, April 1996)

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Table A9
Background Data for Shallow Groundwater - RMC Upgradient Wells

Station ID	MW03-018	MW03-018	MW03-018	MW03-018	MW03-018	MW03-018	MW05-025	MW05-025
Sample Date	7/18/94	11/7/94	2/7/95	5/10/95	8/9/95	8/8/96	7/18/94	8/8/96
Field Parameters								
Conductivity (µmhos/cm	89	80	82		98			
pH	6.7	6.73	6.43		6.28			
Temperature (°F)	12.5	14.7	11.9		14.3			
Inorganic Compounds (mg/L)								
Cyanide, total	0.01 U	0.5 U	0.01 U	0.02 U	0.02 U	0.07	0.01 U	0.02 U
Cyanide, amenable						0.07		
Fluoride	0.5 U	0.5 U	0.5 U	0.57	0.25 U	0.25 U	0.5 U	0.25 U
Metals (mg/L)								
Aluminum	2.0					0.191	0.34	0.227
Antimony	0.005 U	0.005 U	0.005 UL	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Arsenic	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Barium	0.032					0.02 U	0.026	0.02 U
Beryllium	0.02 U	0.02 U	0.02 U	0.0003 U	0.0003 U	0.0003 U	0.02 U	0.0003 U
Cadmium	0.0003 U	0.02 U	0.0003 U	0.004 U	0.004 U	0.002 U	0.0003 U	0.002 U
Calcium	10		8.5	0.02 U			12	
Chromium	0.02 U	0.02 U	0.02 U		0.02 U	0.01 U	0.02 U	0.01 U
Chromium (VI)					0.02 U			
Cobalt	0.05 U						0.05 U	
Copper	0.02 U	0.02 U	0.02 U	0.005 U	0.005 U	0.002 U	0.02 U	0.002 U
Iron	5		4.9			4.45	0.44	0.275
Lead	0.004 U	0.004 U	0.004 U	0.005 U	0.005 U	0.001 U	0.004 U	0.001 U
Magnesium	3		2.6				5.3	
Manganese	0.26						0.02	
Mercury	0.0005 U	0.0005 U	0.0005 U	0.0002 U	0.0002 U	0.0002 U	0.0005 U	0.0002 U
Nickel	0.05 U	0.1 U	0.05 U	0.04 U	0.04 U	0.04 U	0.05 U	0.04 U
Potassium	3.9		3.8				2.7	
Selenium	0.004 U	0.004 U	0.004 UL	0.005 U	0.005 U	0.005 U	0.004 U	0.005 U
Silver	0.02 U		0.02 U		0.02 U	0.003 U	0.02 U	0.003 U
Sodium	7.1		6.5				5.8	
Thallium	0.004 U		0.004 U		0.02 U	0.002 U	0.004 U	0.002 U
Vanadium	0.02 U						0.02 U	
Zinc	0.05 U	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
PAHs (mg/L)								
Acenaphthene	0.001 U						0.0011 U	
Acenaphthylene	0.003 U						0.0033 U	
Anthracene	0.0002 U						0.00022 U	
Benzo(a)anthracene	0.0001 U						0.00011 U	
Benzo(a)pyrene	0.0001 U						0.00011 U	
Benzo(b)fluoranthene	0.0001 U						0.00011 U	
Benzo(g,h,i)perylene	0.0001 U						0.00011 U	
Benzo(k)fluoranthene	0.0001 U						0.00011 U	
Chrysene	0.0001 U						0.00011 U	
Dibenzo(a,h)anthracene	0.0002 U						0.00022 U	
Fluoranthene	0.001 U						0.0011 U	
Fluorene	0.0005 U						0.00055 U	
Indeno(1,2,3-cd)pyrene	0.0002 U						0.00022 U	
Naphthalene	0.001 U						0.0011 U	
Phenanthrene	0.0002 U						0.00022 U	
Pyrene	0.0002 U						0.00022 U	

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Table A9
Background Data for Shallow Groundwater - RMC Upgradient Wells

Station ID	MW03-018	MW03-018	MW03-018	MW03-018	MW03-018	MW03-018	MW05-025	MW05-025
Sample Date	7/18/94	11/7/94	2/7/95	5/10/95	8/9/95	8/8/96	7/18/94	8/8/96
PCBs (mg/L)								
Aroclor 1016	0.0005 U						0.00055 U	
Aroclor 1221	0.0005 U						0.00055 U	
Aroclor 1232	0.0005 U						0.00055 U	
Aroclor 1242	0.0005 U						0.00055 U	
Aroclor 1248	0.0005 U						0.00055 U	
Aroclor 1254	0.0005 U						0.00055 U	
Aroclor 1260	0.0005 U						0.00055 U	
TPHs (mg/L)								
Diesel	0.5 U						0.5 U	
Gasoline	0.2 U						0.2 U	
Heavy/Bunker	1 U						1 U	

U = Undetected

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Table A11
Deep Groundwater Data from City of Troutdale Wells

Well #	WELL #2					WELL #3					WELL #4					WELL #6					WELL #7				WELL #8
Well Screen Depth	430-443 ft					510-586 ft					493-564 ft					422-532 ft					358-384, 464-525 ft				435-533 ft
Date Sampled	3/12/96	10/25/93	7/14/93	5/13/93	4/5/93	3/12/96	10/25/93	7/14/93	5/13/93	4/5/93	3/12/96	10/25/93	7/14/93	5/13/93	4/5/93	3/12/96	10/25/93	7/14/93	5/13/93	4/5/93	4/20/94	2/15/94	10/25/93	7/26/93	5/6/96
Analyte (mg/L)																									
Total Cyanide (335.2)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U
Fluoride (340.2)	0.2 U	0.2 U	0.2 U		0.2 U	0.2 U	0.2 U	0.2 U		0.2 U	0.3	0.3	0.3		0.3	0.2 U	0.2 U	0.2		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Metals																									
Aluminum	0.1 U					0.1 U					0.1 U					0.1 U									
Antimony	0.0005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0005 U
Arsenic	0.0005 U	0.005 U	0.005 U		0.005 U	0.0015	0.005 U	0.005 U		0.005 U	0.0013	0.005 U	0.005 U		0.005 U	0.0006	0.005 U	0.006		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0009
Barium	0.002 U	0.002 U	0.002 U		0.005 U	0.023	0.022	0.022		0.022	0.07	0.002 U	0.065		0.061	0.023	0.022	0.014		0.022	0.08	0.008	0.008	0.007	0.015
Beryllium	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.001 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.001 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.001 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.001 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Cadmium	0.0005 U	0.001 U	0.001 U		0.001 U	0.0005 U	0.001 U	0.001 U		0.001 U	0.0005 U	0.001 U	0.001 U		0.001 U	0.0005 U	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U
Calcium	18					16					44					12									
Chromium	0.001 U	0.001 U	0.001 U		0.003	0.001 U	0.001 U	0.001 U		0.003	0.001 U	0.001 U	0.001 U		0.008	0.001 U	0.001 U	0.001 U		0.003	0.001 U	0.001 U	0.001 U	0.001 U	0.002
Copper	0.02 U					0.02 U					0.02 U					0.02 U									
Iron	0.05 U					0.05 U					0.05 U					0.05 U									
Lead	0.0005 U					0.0005 U					0.0005 U					0.0005 U									
Magnesium	6.2					6.8					5.2					4.7									
Manganese	0.026					0.073					0.075					0.055									
Mercury	0.0005 U	0.005 U	0.0005 U		0.0005 U	0.0005 U	0.0005 U	0.0005 U		0.0005 U	0.0005 U	0.0005 U	0.0005 U		0.0005 U	0.0005 U	0.0005 U	0.0005 U		0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Nickel	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Selenium	0.0005 U	0.005 U	0.005 U		0.005 U	0.0006	0.005 U	0.005 U		0.005 U	0.0026	0.005 U	0.005 U		0.005 U	0.0011	0.005 U	0.005 U		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0005 U
Silver	0.0005 U					0.0005 U					0.0005 U					0.0005 U									
Sodium	20	20	20		19	20	21	21		19	120	120	120		110	31	32	31		28	33	35	21	29	39
Thallium	0.0005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0005 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0005 U
Zinc	0.02 U					0.02 U					0.02 U					0.02 U									

U = None detected at or above the detection limit listed

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Table A12
Background Data for Columbia River Fish Tissue

River Mile:	RM 120[a]		RM 120[a]		RM 120[a]		RM 124[a]		RM 125.5[b]		RM 141.5[b]		RM 125.5[b]		RM 141[a]		RM 141.1[b]		RM 127[b]		RM 136[b]	
Sample ID:	13-1-LS		13-2-LS		13-3-LS		14-LS		D38		D40		D38		15-C		D40					
Fish Type:	Large Scale Sucker		Large Scale Sucker		Large Scale Sucker		Large Scale Sucker		Large Scale Sucker		Large Scale Sucker		Carp		Carp		Carp		White Sturgeon		White Sturgeon	
Tissue Type:	Whole Body Composite-5 individuals		Whole Body Composite-5 individuals		Whole Body Composite-5 individuals		Whole Body Composite-5 individuals		Whole Body Composite-5 individuals		Whole Body Composite-5 individuals		Whole Body Composite-5 individuals		Whole Body Composite-5 individuals		Whole Body Composite-5 individuals		Filet-20 individuals		Filet-20 individuals	
Percent Lipid:	1.4		1		3		2.2		3.25		3.73		3.29		3		4.02		0.91		1.8	
Analyte	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.	Conc.	Norm.* Conc.
Total Metals (ug/kg)																						
Antimony	0.012	U	0.012	U	0.011	U	0.011	U	0.31	U/E	0.32	U/E	0.36	U/E	0.012	U	0.44	U/E	2.4	U	2.2	U
Arsenic	0.035	U	0.036	U	0.034	U	0.034	U	0.42	U	0.43	U	0.49	U	0.035	U	0.58	U	**0.27**		**0.84**	
Barium	**3.2**		**3.1**		**3.5**		**3.5**		3.6	E	3.7	E	3.4	E	**1.2**		1.3	E	0.1	U/E	0.1	U/E
Cadmium	**0.066**		**0.059**		**0.053**		**0.062**		**0.04**		**0.06**		**0.29**		**0.039**		0.12	E	0.02	U	0.02	U
Chromium	**0.314**		**0.325**		**0.527**		**0.45**								**0.078**							
Copper	**1.16**		**1.23**		**1.18**		**1.21**		0.75	E	0.75	E	1.68	E	**1.26**		1.51	E	0.48	U/E	0.5	E
Lead	0.183	E	0.376	E	0.296	E	0.009	U	0.41	E	0.17	E	0.22	E	0.116	E	0.23	E	0.02	E	0.04	E
Mercury	**0.215**		**0.161**		**0.119**		**0.196**		0.051	E	0.131	E	0.129	E	0.001	U	0.104	E	0.061	E	0.076	E
Nickel	0.1	U	**0.28**		**2.26**		**0.13**		0.73	U/E	0.75	U/E	17.29	E	0.1	U	1.02	U/E	0.56	U/E	0.59	E
Selenium	0.035	U	0.036	U	0.034	U	0.034	U	0.42	U	0.43	U	0.49	U	0.035	U	0.58	U	0.32	U	0.29	U
Silver	0.004	U/E	0.004	U/E	0.004	U/E	0.004	U/E	0.19	U/E	0.19	U/E	0.22	U/E	0.005	E	0.26	U/E	0.14	U/E	0.13	U/E
Zinc	20.7	E	22.4	E	13.7	E	23.7	E	22.9	E	23.7	E	109.6	E	92.1	E	89.9	E	3.8	E	4.2	E
PAHs (ug/kg)																						
Acenaphthene	9.6	U	8.5	U	9.8	U	9.9	U	100	U	100	U	100	U	10	U	100	U	100	U	100	U
Acenaphthylene	9.6	U	8.5	U	9.8	U	9.9	U	100	U	100	U	100	U	10	U	100	U	100	U	100	U
Anthracene	9.6	U	8.5	U	9.8	U	9.9	U	100	U	100	U	100	U	10	U	100	U	100	U	100	U
Benzo(a)anthracene	9.6	U	8.5	U	9.8	U	9.9	U	100	U	100	U	100	U	10	U	100	U	100	U	100	U
Benzo(b)flouranthene									200	U	200	U	200	U			200	U	200	U	200	U
Benzo(k)flouranthene									200	U	200	U	200	U			200	U	200	U	200	U
Benzo(a)pyrene	9.6	U	8.5	U	9.8	U	9.9	U	200	U	200	U	200	U	10	U	200	U	200	U	200	U
Benzo(g,h,i)perylene	9.6	U	8.5	U	9.8	U	9.9	U	200	U	200	U	200	U	10	U	200	U	200	U	200	U
Chrysene	9.6	U	8.5	U	9.8	U	9.9	U	100	U	100	U	100	U	10	U	100	U	100	U	100	U
Dibenzo(a,h)anthracene	9.6	U	8.5	U	9.8	U	9.9	U	200	U	200	U	200	U	10	U	200	U	200	U	200	U
Flouranthene	9.6	U	8.5	U	9.8	U	9.9	U	100	U	100	U	100	U	10	U	100	U	100	U	100	U
Flourene	9.6	U	8.5	U	9.8	U	9.9	U	100	U	100	U	100	U	10	U	100	U	100	U	100	U
Indeno(1,2,3-cd)pyrene	9.6	U	8.5	U	9.8	U	9.9	U	200	U	200	U			10	U			200	U	200	U
Naphthalene	9.6	U	8.5	U	6.6	0.2 J	9.9	U	100	U	100	U			10	U			100	U	100	U
Phenanthrene	9.6	U	8.5	U	9.8	U	9.9	U	100	U	100	U			10	U			100	U	100	U
Pyrene	9.6	U	8.5	U	9.8	U	9.9	U	100	U	100	U			10	U			100	U	100	U
PCBs (ug/kg)																						
Aroclor 1221	52	U	52	U	52	U	52	U	50	U	50	U	50	U	52	U	50	U	50	U	50	U
Aroclor 1232	**56**	**4**	52	U	37	1.2 J	52	U	50	U	50	U	50	U	52	U	50	U	50	U	50	U
Aroclor 1242/1016	52	U	52	U	52	U	52	U	50	U	50	U	50	U	52	U	50	U	50	U	50	U
Aroclor 1248	52	U	52	U	52	U	52	U	50	U	50	U	50	U	52	U	50	U	50	U	50	U
Aroclor 1254	**68**	**4.9**	**26**	**2.6 J**	**170**	**5.7**	**38**	**1.7 J**	**130**	**4**	50	U	**110**	**3.3**	**36**	**1.2 J**	50	U	50	U	50	U
Aroclor 1260	**56**	**4**	52	U	**37**	**1.2 J**	52	U	50	U	**130**	**3.5**	50	U	52	U	**110**	**2.7**	50	U	50	U
Total PCBs	**124**	**8.9**	**26**	**2.6 J**	**207**	**6.9**	**38**	**1.7 J**	**130**	**4**	**130**	**3.5**	**110**	**3.3**	**36**	**1.2 J**	**110**	**2.7**	**0**		**0**	

Values in bold are greater than the detection limit

* = Lipid-normalized data, in ug/g, only presented when a coumpound is detected Metals were not lipid normalized.

E = Estimated value based on evaluation of QC data.

J = Estimated value less than specified detection limit.

U = Substance was not detected Value given is lower quantification limit.

a = Source: Lower Columbia River Backwater Reconaissance Survey (Tetra Tech, May 1994)

b = Source: Reconnaisance Survey of the Lower Columbia River (Tetra Tech, January 1993)

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