MCBSF
6.2.2
12/20/99

SEDIMENT REMEDIAL DESIGN SAMPLING DATA

MCCORMICK & BAXTER CREOSOTING COMPANY

PORTLAND, OREGON

Prepared for:

Oregon Department of Environmental Quality
811 Southwest Sixth Avenue
Portland, Oregon 97204

December 1999 ***Task Order No.: 88-97-19***

ecology and environment, inc.

USEPA SF
1268918

ecology and environment, inc.
International Specialists in the Environment

333 SW Fifth Avenue
Portland, Oregon 97204
Tel: 503/248-5600, Fax: 503/248-5577

December 20, 1999

Mr. William Dana
Project Manager
Oregon Department of Environmental Quality
811 SW 6th Avenue
Portland, Oregon 97204

Re: McCormick & Baxter Company Site, Analytical and Geotechnical Results and Sample Location Maps, Task Order No. 88-97-19, E & E Project No. 749.OA01.00.09

Dear Bill:

As we agreed, Ecology and Environment, Inc. (E & E) is submitting analytical summary tables and figures for the sediment sampling conducted in October 1999 at the McCormick and Baxter Company site. Included are tables of analytical results for analytical results (Table 1), bioassay results (Table 2), grain size results (Table 3), sediment densities and percent solids (Table 4), and surface water analytical results (Table 5). Also included are nine figures that show sample locations and graphically present the data for both the sample locations near the McCormick and Baxter Company site and the upstream reference sample locations.

Chemical concentrations exceeding the Record of Decision (ROD) sediment cleanup goals for carcinogenic polynuclear aromatic hydrocarbons were found at sample locations SED99-07, -08, -17, -20, -23, and -29. Significant mortality for *Hyalella azteca* test organisms were found at sample locations SED99-03, -04, -07, -08, -12, -15, -17, -26, -27, -28-, and -29; significant mortality for *Chironomus tentans* test organisms were found at the sample location SED99-17 and the upstream reference location SED99-40.

If you any questions or comments regarding this submittal, please do not hesitate to contact me or John Montgomery at 503-248-5600.

Sincerely,

ECOLOGY AND ENVIRONMENT, INC.

Peter Geiger
Sediment RD Team Leader

cc: Steve Campbell, DEQ
John Montgomery (letter only)
Site File: 749.OA01

recycled paper

000749.OA01.00.09

SEDIMENT REMEDIAL DESIGN SAMPLING DATA
MCCORMICK & BAXTER COMPANY PORTLAND PLANT
PORTLAND, OREGON

December 1999

Prepared for:

State of Oregon Department of Environmental Quality
811 Southwest Sixth Avenue
Portland, Oregon 97204

Table of Contents

LIST OF TABLES

Table 1	Remedial Design Sediment Analytical Results
Table 2	Remedial Design Sediment Bioassay Results
Table 3	Remedial Design Sediment Grain Size Results
Table 4	Remedial Design Sediment Densities Results
Table 5	Remedial Design Surface Water Analytical Results

LIST OF FIGURES

Figure 1	1999 Sediment and Surface Water Sampling Locations with Bathymetric Survey Data
Figure 2	1999 Sediment and Surface Water Total Polynuclear Aromatic Hydrocarbon Results
Figure 3	1999 Sediment and Surface Water Carcinogenic Polynuclear Aromatic Hydrocarbon Results
Figure 4	1999 Sediment Grain Size Results
Figure 5	1999 Sediment Bioassay Results
Figure 6	1999 Sediment and Surface Water Arsenic Concentrations
Figure 7	Upstream Reference Sample SED99-40
Figure 8	Upstream Reference Sample SED99-41 and SED99-42
Figure 9	Upstream Reference Sample SED99-43

TABLE 1
REMEDIAL DESIGN SEDIMENT SAMPLING RESULTS
McCormick & Baxter Creosoting Company Site
Portland, Oregon
October 1999
(ug/kg)

Sample Identification	Sample Depth (ft)	Carcinogenic PAHs	Arsenic	Dioxin/furan TCDD toxicity equivalent	Pentachlorophenol
MBSED99-01	18.4	141	6,100	NA	ND
MBSED99-02	31.5	54	5,000	NA	ND
MBSED99-03	25.4	73	4,700	NA	ND
MBSED99-04	40.1	1,780	3,900	NA	ND
MBSED99-05	10.2	252	5,300	0.0011	ND
MBSED99-06	48.4	ND	2,900	NA	ND
MBSED99-07	26.4	3,735	6,000	NA	ND
MBSED99-08	3.1	6,300	3,500	NA	ND
MBSED99-09	0.0	27	3,700	NA	ND
MBSED99-10	0.0	391	3,400	NA	ND
MBSED99-11	0.0	99	4,600	0.007	ND
MBSED99-12	34.9	1,662	3,500	NA	ND
MBSED99-13	0.0	749	4,300	NA	ND
MBSED99-14	0.0	164	3,200	0.0052	ND
MBSED99-15	34.8	211	4,700	NA	ND
MBSED99-16	5.2	1,504	8,100	0.15	86
MBSED99-17	40.6	22,560	6,100	NA	ND
MBSED99-18	0.0	99	7,000	0.068	ND
MBSED99-19	0.0	156	3,900	0.0014	ND
MBSED99-20	5.3	6,335	4,400	NA	ND
MBSED99-21	9.3	935	5,700	0.053	68
MBSED99-22	0.0	220	7,700	0.06	ND
MBSED99-23	36.9	2,215	4,300	NA	ND
MBSED99-24	6.0	429	4,200	NA	ND
MBSED99-25	4.4	747	4,700	0.011	ND
MBSED99-26	7.0	107	4,800	NA	ND
MBSED99-27	9.8	542	5,600	NA	ND
MBSED99-28	0.0	65	4,700	NA	ND
MBSED99-29	5.4	2,186	5,000	NA	ND
MBSED99-30	9.9	188	4,900	NA	ND
MBSED99-31	8.4	85	4,600	NA	ND

TABLE 1
REMEDIAL DESIGN SEDIMENT SAMPLING RESULTS
McCormick & Baxter Creosoting Company Site
Portland, Oregon
October 1999
(ug/kg)

Sample Identification	Sample Depth (ft)	Carcinogenic PAHs	Arsenic	Dioxin/furan TCDD toxicity equivalent	Pentachlorophenol
MBSED99-32	7.5	197	5,600	NA	ND
MBSED99-33	0.0	75	11,700	0.222	ND
MBSED99-34	8.9	438	5,900	NA	ND
MBSED99-35	4.1	86	4,300	NA	ND
MBSED99-36	35.9	ND	4,000	NA	ND
MBSED99-37	0.0	31	7,800	0.03	ND
MBSED99-38	9.0	96	5,700	NA	ND
MBSED99-39	4.8	123	4,000	NA	ND
MBSED99-40	8.5	53	4,100	NA	ND
MBSED99-41	3.5	ND	3,300	NA	ND
MBSED99-42	9.2	137	3,500	NA	ND
MBSED99-43	5.1	ND	3,000	NA	ND
MBSED99-50 (MBSED99-33 DUP)	0.0	136	11,100	0.16	ND
MBSED99-51 (MBSED99-16 DUP)	6.2	1,369	8,900	NA	96
MBSED99-52 (MBSED99-26 DUP)	7.0	54	4,100	NA	ND
MBSED99-53 (MBSED99-09 DUP)	0.0	13	3,000	NA	ND
MBSED99-54 (MBSED99-40 DUP)	8.5	56	3,400	NA	ND

Key:
NA: Not available; analytical test not performed on this sample.
ND: Not detected.
ug/kg = microgram/kilogram.
Shaded cells indicate contaminant concentration concentration exceeding the ROD cleanup goals for sediment
Reference locations include: MBSED99-40, -41, -42, and -43.
Carcinogenic PAHs include: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

ROD Cleanup Goals
Arsenic = 12,000 ug/kg
Pentachlorophenol = 100,000 ug/kg
Carcinogenic PAHs = 2,000 ug/kg
Dioxins/furans = 8 ug/kg.

TABLE 2
REMEDIAL DESIGN SEDIMENT BIOASSAY RESULTS
McCormick & Baxter Creosoting Company Site
Portland, Oregon
October 1999

Sample Identification	*Hyalella azteca*	*Chironomus tentans*	
	Percent Survival	Percent Survival	Weight (mg)
MBSED99-01	91.3	78.8	1.4
MBSED99-02	95.0	78.8	1.55
MBSED99-03	**71.3**	76.3	1.4
MBSED99-04	**35.0**	82.5	1.34
MBSED99-05	75.0	81.3	1.46
MBSED99-06	82.5	86.3	1.78
MBSED99-07	**27.5**	85.0	**0.92**
MBSED99-08	**0.0**	85.0	1.19
MBSED99-09	88.8	78.8	1.35
MBSED99-10	96.3	83.8	1.12
MBSED99-11	93.8	88.8	1.12
MBSED99-12	**47.5**	92.5	1.69
MBSED99-13	95.0	87.5	**0.26**
MBSED99-14	86.3	88.8	1.28
MBSED99-15	**55.0**	92.5	1.67
MBSED99-16	92.5	95.0	1.21
MBSED99-17	**0.0**	**2.5**	**0.01**
MBSED99-18	96.3	95.0	1.47
MBSED99-19	96.3	91.3	1.68
MBSED99-20	86.3	73.8	**0.31**
MBSED99-21	96.3	76.3	0.96
MBSED99-22	77.5	88.8	1.17
MBSED99-23	98.8	70.0	1.08
MBSED99-24	72.5	86.3	1.9
MBSED99-25	91.3	85.0	1.84
MBSED99-26	**70.0**	90.0	1.87
MBSED99-27	**61.3**	95.0	1.88
MBSED99-28	**71.3**	88.8	1.22
MBSED99-29	**63.8**	81.3	1.85
MBSED99-30	85.0	92.5	1.78
MBSED99-31	72.5	85.0	1.82
MBSED99-32	86.3	90.0	1.46
MBSED99-33	82.5	90.0	1.5
MBSED99-34	91.3	85.0	1.06
MBSED99-35	87.5	88.8	1.28
MBSED99-36	92.5	91.3	1.26

TABLE 2
REMEDIAL DESIGN SEDIMENT BIOASSAY RESULTS
McCormick & Baxter Creosoting Company Site
Portland, Oregon
October 1999

Sample Identification	*Hyalella azteca*	*Chironomus tentans*	
	Percent Survival	Percent Survival	Weight (mg)
MBSED99-37	82.5	91.3	1.15
MBSED99-38	87.5	93.8	1.04
MBSED99-39	97.5	88.8	1.23
MBSED99-40	97.5	62.5	1.2
MBSED99-41	91.3	76.3	1.28
MBSED99-42	98.8	68.8	1.19
MBSED99-43	97.5	85.0	1.56
Lab Control (10/19/99)	NA	76.9	1.26
Lab Control (11/1/99)	86.3	NA	NA
Sediment Control (11/1/99)	96.3	NA	NA
Lab Control (11/2/99)	NA	79.4	1.05
Sediment Control (11/9/99)	81.3	NA	NA
Lab Control (11/9/99)	83.8	NA	NA

Key:
NA: Not available; results shown are only for bioassay test performed on that date.
Shaded cells indicate a statistically significant reduction from Lab control at p less than 0.05 using Wilcoxon two sample test.
Reference locations include: MBSED99-40, -41, -42, and -43.

TABLE 3
REMEDIAL DESIGN SEDIMENT GRAIN SIZE RESULTS
McCormick & Baxter Creosoting Company Site
Portland, Oregon
October 1999

	Cobble	Coarse Gravel			Fine Gravel			Coarse Sand	Medium Sand			Fine Sand							
Seive Size	3"	2"	1-1/2"	1"	3/4"	3/8"	% Gravel	#4	#10	#20	#30	#40	#60	#80	#100	#140	% Sand	#200	% Silt / Clay
Sample ID	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing		% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing		% Passing	
MBSED99-01	99.67	99.67	99.67	99.67	99.67	99.67	**0.33**	99.67	99.65	98.46	96.54	85	85	80.38	1.99	49.23	**87.36**	12.31	**12.31**
MBSED99-02	99.85	99.85	99.85	99.85	99.85	99.85	**0.15**	99.85	99.85	97.1	96.23	90.43	90.43	85.8	2.88	48.7	**85.07**	14.78	**14.78**
MBSED99-03	99.79	99.79	99.79	99.79	99.79	99.79	**0.21**	99.79	99.79	107.87	106.74	100	100	94.38	2.12	42.7	**82.94**	16.85	**16.85**
MBSED99-04	99.57	99.57	99.57	99.57	99.57	98.92	**1.66**	98.34	97.68	93.55	81.57	18.43	18.43	15.1	2.07	7.73	**97.21**	1.13	**1.13**
MBSED99-05	98.97	98.97	98.97	98.97	97.1	94.81	**8.02**	91.98	89.95	97.29	89.26	11.49	11.49	5.71	1.72	1.33	**91.98**	0	**0**
MBSED99-06	98.2	98.2	98.2	98.2	98.2	96.82	**5.96**	94.04	91.32	95.65	87.96	28.17	28.17	19.06	5.9	5.59	**93.22**	0.82	**0.82**
MBSED99-07	98.56	98.56	98.56	98.56	98.56	97.74	**4.58**	95.42	93.17	91.23	75.82	9.9	9.9	5.99	1.78	1.91	**95.24**	0.18	**0.18**
MBSED99-08	99.25	99.25	99.25	99.25	99.25	99.12	**1.36**	98.64	98.07	107.65	105.73	53.7	53.7	35.46	4.13	18.05	**89.62**	9.02	**9.02**
MBSED99-09	99.92	87.62	87.62	87.62	86.6	83.89	**19.37**	80.63	78.48	96.66	91.61	17.56	17.56	5.17	0.99	0.46	**80.55**	0.08	**0.08**
MBSED99-10	82.88	82.88	82.88	82.88	82.72	81.24	**20.84**	79.16	76.95	93.07	82.91	12.5	12.5	4.61	0.91	0.53	**79.07**	0.09	**0.09**
MBSED99-11	87.74	87.74	87.74	87.74	87.74	81.16	**35.13**	64.87	45.47	62.19	45.73	6.81	6.81	2.32	0.74	0.23	**64.81**	0.06	**0.06**
MBSED99-12	99.89	99.89	99.89	99.89	99.89	99.85	**0.98**	99.02	96.74	91.32	77.45	21.73	21.73	18.44	10.43	5.97	**97.41**	1.61	**1.61**
MBSED99-13	99.97	96.65	96.65	87.21	84.85	74.31	**34.65**	65.35	58.56	81.59	66.7	5.63	5.63	2.02	0.64	0.38	**65.27**	0.08	**0.08**
MBSED99-14	99.79	99.79	99.79	96.94	91.51	70.2	**46.31**	53.69	41.01	69.79	57.81	9.49	9.49	2.19	0.46	0.19	**53.63**	0.06	**0.06**
MBSED99-15	99.63	99.63	99.63	99.63	99.63	99.63	**0.37**	99.63	99.49	92.23	91.52	90.03	90.03	84.2	10.85	38.33	**86.83**	12.8	**12.8**
MBSED99-16	99.67	99.67	99.67	99.67	99.67	99.61	**0.54**	99.46	98.98	99.14	97.4	74.81	74.81	64.95	20.22	11.45	**95.26**	4.2	**4.2**
MBSED99-17	99.51	99.51	99.51	99.51	91.27	84.92	**20.46**	79.54	72.68	90.53	83.36	54.26	54.26	47.1	10.01	13.22	**76.05**	3.49	**3.49**
MBSED99-18	99.48	99.48	99.48	99.48	99.48	98.59	**2.62**	97.38	97.1	86.32	59.37	7.85	7.85	2.44	0.36	0.08	**97.38**	0	**0**
MBSED99-19	99.84	99.84	99.84	99.84	98.39	81.44	**26.95**	73.05	71.17	94.69	82.62	13.51	13.51	8.4	2.78	1.64	**72.67**	0.38	**0.38**
MBSED99-20	99.49	99.49	99.49	99.49	98.76	97.3	**4.21**	95.79	93.31	98.72	97.48	84.41	84.41	76.12	21.7	20.29	**90.06**	5.73	**5.73**
MBSED99-21	99.62	99.62	99.62	99.62	99.62	99.54	**0.65**	99.35	98.88	97.34	95.08	84.71	84.71	80.43	5.77	36.1	**88.03**	11.32	**11.32**
MBSED99-22	99.98	99.98	99.98	99.98	99.98	99.98	**0.32**	99.68	99.25	98.9	92.66	11.31	11.31	4.06	2.71	2.04	**97.82**	1.86	**1.86**
MBSED99-23	99.56	99.56	99.56	99.56	99.56	99.56	**0.8**	99.2	98.66	99.48	98.4	86.48	86.48	75.71	16.34	18.66	**94.49**	4.71	**4.71**
MBSED99-24	100	100	100	100	100	100	**0**	100	99.85	90.11	89.46	80.29	80.29	72.6	16.91	17.1	**100**	0	**0**
MBSED99-25	99.75	99.75	99.75	99.75	99.75	99.58	**0.9**	99.1	98.94	99.75	99.31	94.73	94.73	88.83	33.6	24.69	**91.78**	7.32	**7.32**
MBSED99-26	99.59	99.59	99.59	99.59	99.59	99.56	**0.46**	99.54	99.53	100.14	99.49	91.96	91.96	84.21	15.48	31.73	**89.21**	10.33	**10.33**
MBSED99-27	99.92	99.92	99.92	99.92	99.92	99.92	**0.08**	99.92	99.9	99.63	98.78	88.2	88.2	82.37	9.77	35.79	**88.63**	11.29	**11.29**
MBSED99-28	98.42	98.42	98.42	98.42	98.42	98.42	**1.84**	98.16	97.17	93.06	81.93	3.45	3.45	0.44	0.1	0.02	**98.16**	0	**0**
MBSED99-29	99.8	99.8	99.8	99.8	99.8	99.74	**0.47**	99.53	99.38	98.6	98	85.85	85.85	70.31	23.71	15.46	**96.06**	3.47	**3.47**
MBSED99-30	99.89	99.89	99.89	99.89	99.89	99.89	**0.11**	99.89	99.89	100	99.17	91	91	86	8.73	34.33	**87.14**	12.75	**12.75**
MBSED99-31	99.99	99.99	99.99	99.99	99.99	99.99	**0.01**	99.99	99.99	99.6	98.79	91.7	91.7	85.73	7.22	33.6	**89.46**	10.53	**10.53**
MBSED99-32	99.89	99.89	99.89	99.89	99.89	99.89	**0.11**	99.89	99.89	99.2	97.96	88.92	88.92	82.71	7.79	35.2	**87.83**	12.06	**12.06**
MBSED99-33	99.91	99.91	99.91	99.91	99.91	95.69	**8.85**	91.15	87.75	95.79	88.51	12.77	12.77	4.13	1.08	0.68	**91.05**	0.1	**0.1**
MBSED99-34	99.87	99.87	99.87	99.87	99.87	99.87	**0.13**	99.87	99.87	99.4	98.32	89.45	89.45	82.13	5.97	38.13	**86.44**	13.43	**13.43**
MBSED99-35	99.81	99.81	99.81	99.81	99.81	99.81	**0.19**	99.81	99.73	96.25	95.3	85.51	85.51	72.91	16.37	17.63	**96.01**	3.8	**3.8**
MBSED99-36	99.68	99.68	99.68	99.68	99.68	99.68	**0.32**	99.68	99.68	99.2	98.82	90.98	90.98	83.07	16.69	24.95	**93.76**	5.92	**5.92**
MBSED99-37	100	100	100	100	100	100	**0**	100	99.94	98.24	92.03	4.85	4.85	1.37	0.3	0.2	**99.94**	0.06	**0.06**
MBSED99-38	99.57	99.57	99.57	99.57	99.57	99.57	**0.43**	99.57	99.57	99.36	97.22	83.97	83.97	79.91	3.29	36.54	**88.25**	11.32	**11.32**
MBSED99-39	99.63	99.63	99.63	99.63	99.63	99.63	**0.37**	99.63	99.63	99.07	98.25	89.44	89.44	79.46	14.38	22.13	**94.39**	5.24	**5.24**
MBSED99-40	99.91	99.91	99.91	99.91	99.91	99.91	**0.09**	99.91	99.83	98.64	51.47	95.65	76.36	55.36	17.48	10.71	**97.49**	2.42	**2.42**
MBSED99-41	99.64	99.64	99.64	99.64	99.64	99.64	**0.36**	99.64	99.64	94.88	40.11	64.27	21.04	10.89	2.75	1.52	**99.36**	0.28	**0.28**
MBSED99-42	99.9	99.9	99.9	99.9	99.9	99.9	**0.39**	99.61	99.3	99.41	38.44	86.59	33.49	14.9	3.04	2.07	**99.15**	0.46	**0.46**
MBSED99-43	99.85	99.85	99.85	99.85	99.85	99.85	**0.15**	99.85	99.85	90.82	34.7	83.42	49.55	27.19	7.27	4.63	**98.8**	1.05	**1.05**

TABLE 4
REMEDIAL DESIGN SEDIMENT DENSITIES RESULTS
McCormick & Baxter Creosoting Company Site
Portland, Oregon
October 1999

Sample ID	Empty Wt (g)	Full Weight (g)	Volume (l)	Density (g/l)	Percent Solids
MBSED99-01	51.4	101.8	0.045	1120.0	57.4
MBSED99-02	50.9	118.9	0.048	1416.7	43.9
MBSED99-03	52.3	117.2	0.044	1475.0	43.6
MBSED99-04	51.3	124.2	0.046	1584.8	53.5
MBSED99-05	51.4	117.5	0.043	1537.2	44.0
MBSED99-06	50.8	136.3	0.041	2085.4	71.0
MBSED99-07	52.3	118.3	0.042	1571.4	41.2
MBSED99-08	52.3	126.2	0.044	1679.5	58.8
MBSED99-12	51.4	127.6	0.045	1693.3	55.1
MBSED99-15	51.1	112.9	0.042	1471.4	44.3
MBSED99-16	52.0	116.5	0.045	1433.3	58.3
MBSED99-17	52.3	116.1	0.042	1519.0	42.7
MBSED99-20	50.8	123.4	0.041	1770.7	93.6
MBSED99-21	51.4	115.3	0.043	1486.0	42.4
MBSED99-22	51.3	128.9	0.046	1687.0	97.2
MBSED99-23	51.3	114.1	0.046	1365.2	54.9
MBSED99-24	51.4	119.8	0.045	1520.0	50.6
MBSED99-25	50.9	126.4	0.048	1572.9	54.9
MBSED99-26	52.3	120.5	0.044	1550.0	50.9
MBSED99-27	51.3	121.0	0.046	1515.2	46.0
MBSED99-28	51.4	126.9	0.043	1755.8	98.3
MBSED99-29	52.0	131.1	0.045	1757.8	56.7
MBSED99-30	51.1	118.4	0.042	1602.4	50.8
MBSED99-31	50.9	143.1	0.048	1920.8	42.9
MBSED99-32	51.4	118.1	0.043	1551.2	40.9
MBSED99-33	50.9	122.5	0.048	1491.7	90.3
MBSED99-34	50.8	115.4	0.041	1575.6	42.3
MBSED99-35	51.4	115.4	0.045	1422.2	49.4
MBSED99-36	51.3	120.9	0.046	1513.0	49.3
MBSED99-37	52.3	126.4	0.042	1764.3	93.6
MBSED99-38	52.3	113.6	0.042	1459.5	39.3
MBSED99-39	52.0	124.5	0.045	1611.1	48.9

Note:
Sample densities based on in-field measurements of volume and weight. Percent solids was determined by the subcontracted laboratory.
g = grams
l = liters

TABLE 5

REMEDIAL DESIGN SURFACE WATER ANALYTICAL RESULTS

McCormick & Baxter Creosoting Company Site

Portland, Oregon

October 1999

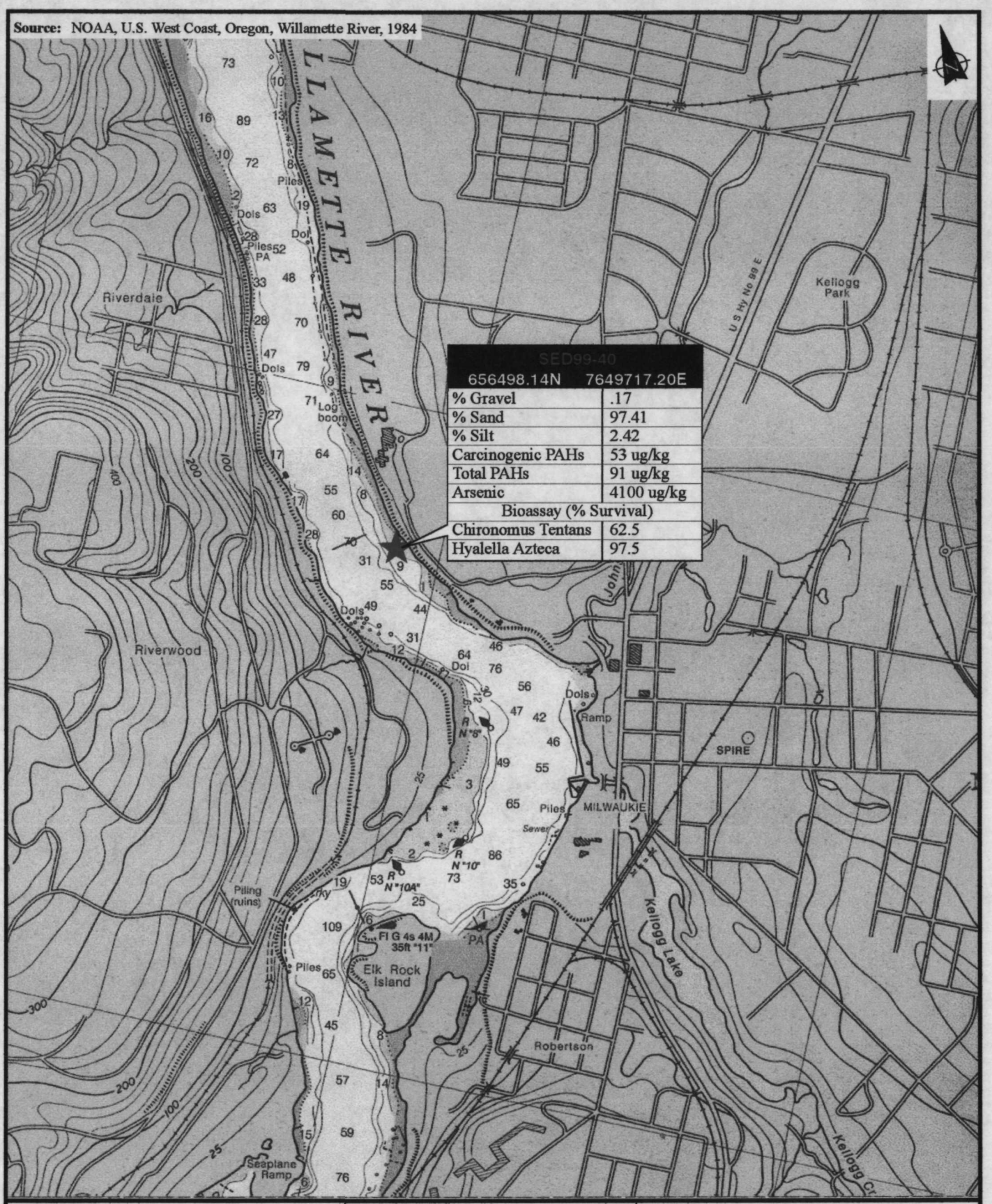
(ug/L)

Sample Identification	Sample Depth (ft)	Carcinogenic PAHs	Total PAHs	Arsenic	Pentachlorophenol
MBSW99-01	3.2	0.1 U	2.0	2 U	1.0 U
MBSW99-02	11.4	0.1 U	0.3	2 U	1.0 U
MBSW99-03	2.7	0.1 U	2.3	2 U	1.0 U
MBSW99-04	1.9	0.1 U	3.0	2 U	1.0 U
MBSW99-05	7.1	0.1 U	2.5	2 U	1.0 U
MBSW99-07 (Duplicate of MBSW99-04)	1.9	0.1 U	2.9	2 U	1.0 U

Key:

U = Analyte not detected; reporting limit shown.

ug/L = micrograms per liter.



ecology and environment, inc.
International Specialists in the Environment
Portland, Oregon

McCORMICK & BAXTER CREOSOTING COMPANY
Portland, Oregon

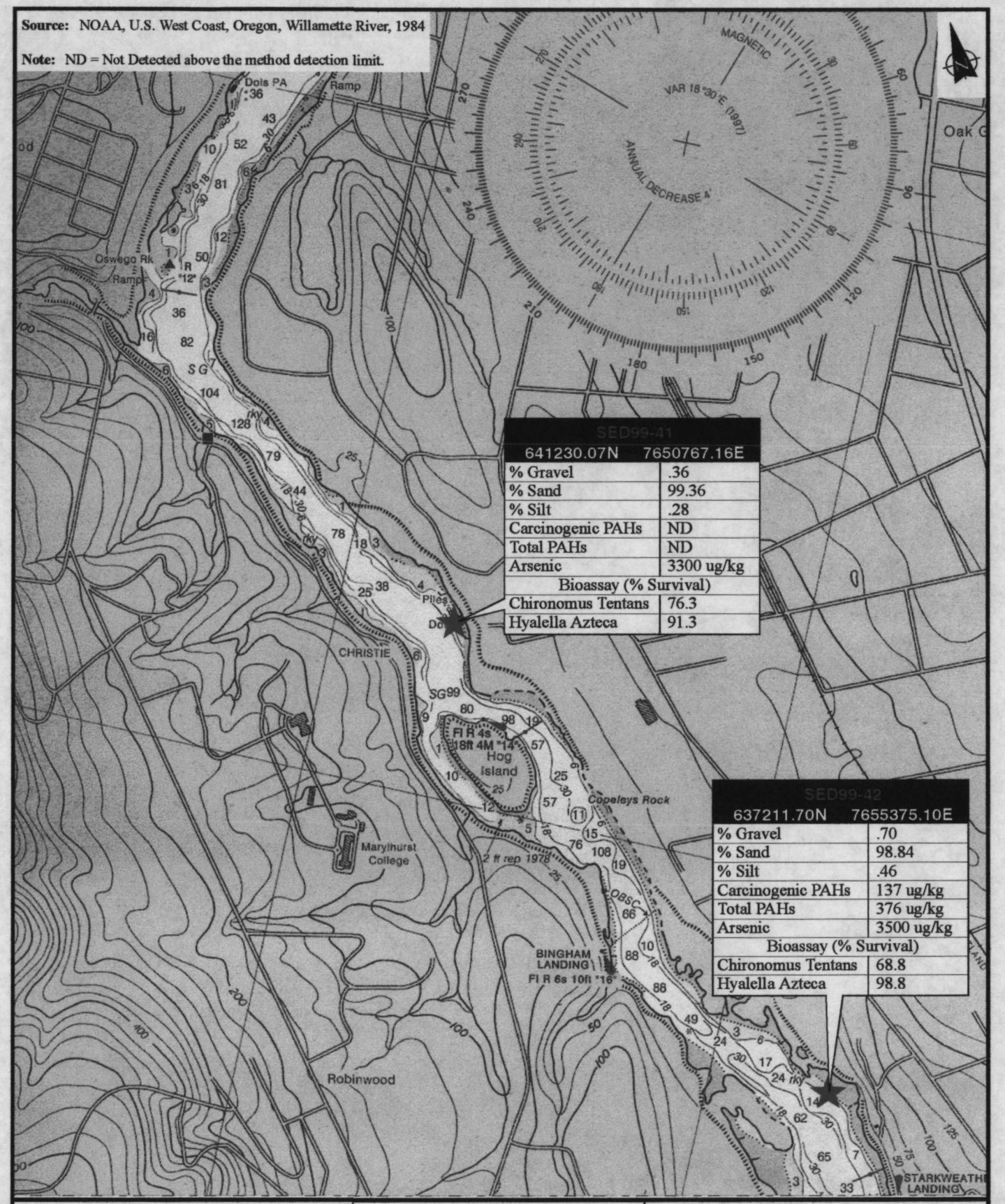
0 .25 .5
Approximate Scale in Miles

Figure 7
UPSTREAM REFERENCE SAMPLE
SED99-40
RD SEDIMENT SAMPLING

Drawn:	DATE:	JOB NO.	Dwg.No.
AES	12/16/99	000749OA01000900	OA01 6

Source: NOAA, U.S. West Coast, Oregon, Willamette River, 1984

Note: ND = Not Detected above the method detection limit.



SED99-41

641230.07N	7650767.16E
% Gravel	.36
% Sand	99.36
% Silt	.28
Carcinogenic PAHs	ND
Total PAHs	ND
Arsenic	3300 ug/kg
Bioassay (% Survival)	
Chironomus Tentans	76.3
Hyalella Azteca	91.3

SED99-42

637211.70N	7655375.10E
% Gravel	.70
% Sand	98.84
% Silt	.46
Carcinogenic PAHs	137 ug/kg
Total PAHs	376 ug/kg
Arsenic	3500 ug/kg
Bioassay (% Survival)	
Chironomus Tentans	68.8
Hyalella Azteca	98.8

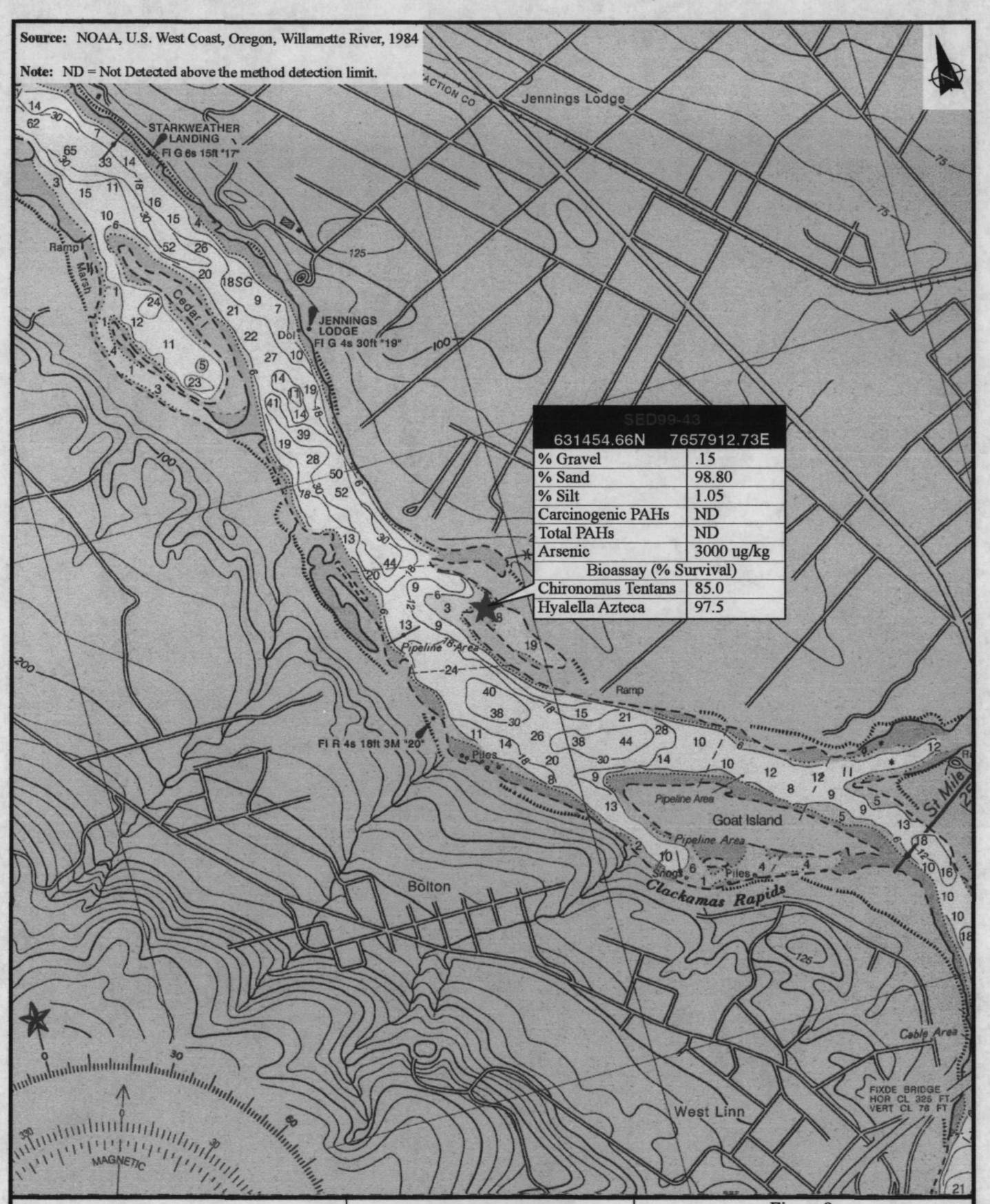
ecology and environment, inc.
International Specialists in the Environment
Portland, Oregon

McCORMICK & BAXTER CREOSOTING COMPANY
Portland, Oregon

0 .25 .5
Approximate Scale in Miles

Figure 8
UPSTREAM REFERENCE SAMPLE SED99-41 AND SED99-42 RD SEDIMENT SAMPLING

Drawn:	DATE:	JOB NO.	Dwg.No.
AES	12/16/99	000749OA01000900	OA01 7



SED99-43

631454.66N	7657912.73E
% Gravel	.15
% Sand	98.80
% Silt	1.05
Carcinogenic PAHs	ND
Total PAHs	ND
Arsenic	3000 ug/kg
Bioassay (% Survival)	
Chironomus Tentans	85.0
Hyalella Azteca	97.5

ecology and environment, inc.
International Specialists in the Environment
Portland, Oregon

McCORMICK & BAXTER CREOSOTING COMPANY
Portland, Oregon

0 .25 .5
Approximate Scale in Miles

Figure 9
UPSTREAM REFERENCE SAMPLE
SED99-43
RD SEDIMENT SAMPLING

Drawn:	DATE:	JOB NO.	Dwg.No.
AES	12/16/99	000749OA01000900	OA01 8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WA 98101

TARGET SHEET

The following document was not imaged.
This is due to the Original being:

6	Oversized
	CD Rom
	Computer Disk
	Video Tape
	DVD
	Other:

**A copy of the document may be requested from the Superfund Records Center.

Document Information

Document ID #:	1268918
File #:	**6.2.2**
Site Name:	MCcORMICK And Baxter Creosoting (MCBSF)

6 of 6 Figures