

November 23, 2004
10077.013

Oregon Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, Oregon 97201-4987

VIA Email/First Class

Attention: Anna Coates

**Subject: Technical Memorandum
QUARTERLY GROUND-WATER MONITORING
THIRD QUARTER 2004 – 4th ROUND
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon
DEQ ECSI File #2277**

Dear Ms. Coates:

This technical memorandum presents the results of the Third Quarter 2004 ground-water monitoring completed in July 2004 for the Remedial Investigation/Feasibility Study (RI/FS) at the Astoria Area-Wide Petroleum Site. The ground-water sampling was performed at the site by *EnviroLogic Resources, Inc.*, from July 19 through July 23, 2004, in accordance with the Work Plan Addendum, Phase 1 Ground Water Assessment (*EnviroLogic Resources*, 2003b). This technical memorandum presents the analytical results of the fourth ground-water sampling event (Third Quarter 2004). The site location is shown on Figure 1 and a site plan is shown on Figure 2.

Ground-water samples were collected and analyzed for all constituents of interest (COIs) from 36 ground-water monitoring wells during the sampling event. Eleven monitoring wells containing free-phase hydrocarbons were not sampled. A total of 44 samples including trip blanks, equipment blanks, field duplicates and field samples were obtained. Field samples were collected from MW-2(M), MW-6(M), MW-7(M), MW-10(M), MW-11(M), MW-12(A) through MW-14(A), MW-16(A) through MW-24(A), MW-26(A) through MW-36(A), MW-38(A), MW-39(A), MW-43(A), MW-45(A) through MW-48(A), and MW-1(F) were collected for laboratory analysis. Sampling methods, containers, preservatives, and holding times for each analytical method are provided in the Field Sampling Plan (Appendix A of the RI/FS Work Plan [*EnviroLogic Resources*, 2002b]). In addition, specific procedures used during the sampling event are presented in Appendix A of this document. No significant modifications were made to these methods and procedures. The locations of the monitoring wells and recovery wells are shown on Figure 3.

The following field parameters were measured as part of the quarterly monitoring event: pH, temperature, specific conductance, oxidation-reduction potential (ORP), and dissolved oxygen (DO). Ground-water sampling logs are presented in Appendix B.

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Ground-water level measurements in the near-shore monitoring wells and from the Pier 2 monitoring point were performed over as short a period of time as possible. The water level in Slip No. 2 was measured to be about 0.94 feet lower than the lowest elevation measured in the near-shore wells when a correction for tides is applied. Tide stages from Tongue Point, a few miles upstream on the Columbia River, were used to make the correction.

SUMMARY OF THE THIRD QUARTER 2004 SAMPLING EVENT

The measured potentiometric surface and chemical concentration data representing the key or indicator COIs for the ground-water samples collected during the quarterly sampling event are presented in the following sections.

The ground-water flow direction at the Astoria Area-Wide site continues to be generally to the northwest and toward Pier 2. The potentiometric surface is presented on Figure 3. The ground-water elevation data are presented in Table 1. Ground-water elevations have been corrected for the presence of free product using either the measured specific gravity of the hydrocarbon in the well, or 0.87 where no well-specific density has been measured.

A total of 44 water samples were submitted for chemical analysis during this fourth round of sampling. This included 36 field samples, 2 field duplicates, 2 equipment blanks, and 4 trip blanks. Table 2 shows the chemicals detected and the range of concentrations observed in monitoring wells during the sampling event. Ground-water analytical results from this round of sampling are summarized in Tables 4 through 9. Figures 4 through 6 show the monitoring well locations along with detected concentrations of select petroleum constituents. Graphs showing the concentrations of key constituents and water elevations in these wells are included in Appendix C. Laboratory analytical data sheets, QA/QC data, the data validation report, and chain-of-custody forms for this ground-water sampling event are presented in Appendix D. Data have been qualified where detections in blanks (e.g., laboratory method blanks or equipment blanks) affect the reported analytical result. No data were rejected as a result of the data validation.

The depth to product, product thickness, and depth to water are measured monthly using an interface probe. The free-phase product measurement data are included in Table 1. Monitoring-wells MW-1(M), MW-3(M), MW-4(M), MW-8(M), MW-9(M), MW-15(A), MW-37(A), MW-40(A), MW-41(A), MW-42(A), and MW-44(A) contain measurable product. The product thickness in the wells varies month to month and product is pumped out of these wells on a monthly basis. The volume of product recovered from these monitoring wells through September 2004 is presented in Table 10.

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SUMMARY OF THE GROUND-WATER MONITORING EVENTS

With completion of the 4th Round of ground-water quality sampling, the ground-water monitoring requirements of the Order have been satisfied. After the fourth sampling event, *EnviroLogic Resources* reviewed the analytical data that had been collected to obtain a better understanding of how ground-water quality varied from the first sampling event through the last sampling event. Based on this review seven monitoring wells were identified as key indicator wells [MW-2(M), MW-10(M), MW-18(A), MW-21(A), MW-29(A), MW-30(A), and MW-39(A)]. The key monitoring wells were chosen primarily by location significance. For each of these seven monitoring wells a graph showing ground-water elevation and the concentrations of selected COIs are plotted over time. The indicator COIs include TPH-Gx, TPH-Dx, benzene, naphthalene, and 1,2,4-trimethylbenzene. The graphs are included in Appendix C.

Review of the graphs and the data validation indicate that the ground-water database is sufficient to conduct risk assessment and evaluate remedial alternatives. If further ground-water monitoring is deemed necessary, the PRP Group proposes to conduct this after the Remedial Investigation report is complete and specific monitoring objectives can be developed.

CLOSING COMMENTS

In accordance with the approved ground-water monitoring program the July 2004 event was the final quarterly ground-water monitoring event and the September 2004 event was the final monthly ground-water elevation monitoring event.

Please call me at (503)768-5121 if you have any questions or comments regarding this quarterly monitoring report.

Sincerely,
EnviroLogic Resources, Inc.

Thomas J. Calabrese, RG, CWRE
Principal/Hydrogeologist
Project Manager

cc: Distribution list attached

TABLES

Table 1	Ground-Water Level Measurements
Table 2	Chemicals Detected and Range of Concentrations
Table 3	Data Qualifiers

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Figure 3	Potentiometric Surface, July 19, 2004
Figure 4	Gasoline & Diesel in Ground Water
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APPENDICES

Appendix A	Methods and Procedures
Appendix B	Ground-Water Sampling Logs
Appendix C	Ground-Water Concentration / Elevation Graphs
Appendix D	Laboratory Analytical Reports with Data Validation Reports

REFERENCES

- EnviroLogic Resources, Inc.*, 2002a, RI/FS and IRAM Development Proposal, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated January 21, 2002.
- EnviroLogic Resources, Inc.*, 2002b, RI/FS and IRAM Development Work Plan, Phase 1, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated July 15, 2002.
- EnviroLogic Resources, Inc.*, 2003a, Phase 1 Soil Technical Memorandum, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated January 30, 2003.
- EnviroLogic Resources, Inc.*, 2003b, Work Plan Addendum, Phase 1 Ground Water Assessment, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated July 2, 2003.
- EnviroLogic Resources, Inc.*, 2003c, Work Plan Addendum, Phase 2 Soil Characterization, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated July 28, 2003.
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Oregon Department of Environmental Quality, 2003, Risk-based decision making for the remediation of petroleum contaminated sites: DEQ Guidance issued September 22, 2003.

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**ASTORIA AREA-WIDE PETROLEUM SITE
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TABLES

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-1(F)	10/13/2003	1142	1.5	31.71	np	23.44	0	8.27		
MW-1(F)	10/22/2003	820	0.62	31.71	np	23.87	0	7.84		
MW-1(F)	11/12/2003	1130	0.56	31.71	np	23.03	0	8.68		Iron
MW-1(F)	12/16/2003	1358	0.34	31.71	np	17.25	0	14.46		
MW-1(F)	1/11/2004	1628	4.26	31.71	np	16.33	0	15.38		Iron
MW-1(F)	1/15/2004	800	3.86	31.71	np	16.21	0	15.50		Iron
MW-1(F)	2/12/2004	945	-2.53	31.71	np	15.61	0	16.10		Iron
MW-1(F)	3/18/2004	1355	1.23	31.71	np	17.82	0	13.89		
MW-1(F)	4/12/2004	1105	-2.84	31.71	np	18.2	0	13.51		
MW-1(F)	4/15/2004	730	1.78	31.71	np	18.36	0	13.35		
MW-1(F)	5/19/2004	1307	1.86	31.71	np	19.98	0	11.73		
MW-1(F)	6/16/2004	1246	1.78	31.71	np	20.76	0	10.95		
MW-1(F)	7/19/2004	1042	-2.94	31.71	np	21.82	0	9.89		
MW-1(F)	7/20/2004	1838	-0.48	31.71	np	21.9	0	9.81		
MW-1(F)	8/17/2004	1330	2.69	31.71	np	22.92	0	8.79		
MW-1(F)	9/16/2004	1320	3.67	31.71	np	23.18	0	8.53		
MW-1(M)	8/28/2002	1151	-1.99	14.53	9.61	10.08	0.47	4.86	18.27	
MW-1(M)	9/12/2002	1029	-2.84	14.53	9.34	9.88	0.54	5.12		
MW-1(M)	9/13/2002	1536	1.12	14.53	9.13	9.34	0.21	5.37		
MW-1(M)	10/11/2002	1141	-1.52	14.53	9.49	9.92	0.43	4.98	19.41	
MW-1(M)	11/15/2002	1118	3.51	14.53	7.11	7.19	0.08	7.41		
MW-1(M)	12/13/2002	841	4.39	14.53	6.54	6.57	0.03	7.99		
MW-1(M)	1/14/2003	1117	3.45	14.53	6.79	6.81	0.02	7.74		
MW-1(M)	2/12/2003	1126	2.12	14.53	7.55	7.56	0.01	6.98		
MW-1(M)	3/13/2003	1018	3.86	14.53	6.37	6.45	0.08	8.15		
MW-1(M)	4/14/2003	1147	4.17	14.53	np	6.57	0	7.96		Product seep visible
MW-1(M)	5/14/2003	1054	2.59	14.53	8.67	8.7	0.03	5.86		Product seep visible
MW-1(M)	6/17/2003	1431	2.05	14.53	9.19	9.25	0.06	5.33		Product seep visible
MW-1(M)	7/14/2003	1215	0.11	14.53	9.56	9.71	0.15	4.95		Product seep visible
MW-1(M)	8/13/2003	1350	3	14.53	9.31	9.32	0.01	5.22		Product seep visible
MW-1(M)	9/12/2003	1432	3.21	14.53	np	8.10	0	6.43		Product seep visible
MW-1(M)	10/13/2003	846	-2.52	14.53	9.31	9.33	0.02	5.22		Product seep visible
MW-1(M)	11/12/2003	1445	3.39	14.53	np	6.96	0	7.57		Product seep visible
MW-1(M)	12/16/2003	943	1.46	14.53	7.58	7.59	0.01	6.95		Product seep visible
MW-1(M)	1/11/2004	1350	4.01	14.53	np	6.58	0	7.95	Product globule	Product seep visible
MW-1(M)	2/12/2004	1423	-2.19	14.53	8.64	8.65	0.01			Product seep visible
MW-1(M)	3/18/2004	930	3.9	14.53	np	7.60	0	6.93	Strong odor	Product seep slt visible
MW-1(M)	4/12/2004	902	0.43	14.53	7.56	7.57	0.01	6.97		Product seep visible
MW-1(M)	6/16/2004	1030	-0.35	14.53	9.39	9.41	0.01	5.13		Product seep slightly visible
MW-1(M)	7/19/2004	858	-5.63	14.53	9	9.03	0.01	5.51		Product seep slightly visible
MW-1(M)	8/17/2004	1020	-3.83	14.53	9.55	9.58	0.01	4.96		Product seep slightly visible
MW-1(M)	9/16/2004	932	-2.05	14.53	8.46	8.47	0.01	6.07		Product seep visible

**TABLE 1
GROUND-WATER MEASUREMENTS**

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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-2(M)	8/28/2002	1122	-3.21	15.00	np	8.65	0	6.35	17.9	
MW-2(M)	9/12/2002	1015	-2.84	15.00	np	8.69	0	6.31		
MW-2(M)	9/13/2002	1520	1.12	15.00	np	9.7	0	5.30		
MW-2(M)	10/11/2002	1036	-2.45	15.00	np	8.95	0	6.05	19.03	
MW-2(M)	11/15/2002	930	2.73	15.00	np	8.55	0	6.45		
MW-2(M)	12/13/2002	814	4.26	15.00	np	8.08	0	6.92		
MW-2(M)	1/14/2003	1039	3.45	15.00	np	6.58	0	8.42		
MW-2(M)	2/12/2003	1042	2.12	15.00	np	6.47	0	8.53		
MW-2(M)	3/13/2003	940	3.86	15.00	np	5.91	0	9.09		
MW-2(M)	4/14/2003	1103	4.35	15.00	np	6.02	0	8.98		
MW-2(M)	5/14/2003	1008	1.15	15.00	np	6.91	0	8.09		
MW-2(M)	6/17/2003	1354	0.45	15.00	np	7.51	0	7.49		
MW-2(M)	7/14/2003	1132	0.11	15.00	np	8.02	0	6.98		
MW-2(M)	8/13/2003	1324	1.76	15.00	np	8.34	0	6.66		
MW-2(M)	9/12/2003	1318	2.26	15.00	np	8.58	0	6.42		
MW-2(M)	10/13/2003	852	-2.52	15.00	np	8.62	0	6.38		
MW-2(M)	10/15/2003	1300	2.26	15.00	np	8.62	0	6.38		
MW-2(M)	11/12/2003	1432	3.39	15.00	np	8.29	0	6.71		
MW-2(M)	12/16/2003	910	2.67	15.00	np	6.86	0	8.14		
MW-2(M)	1/11/2004	1348	4.01	15.00	np	6.27	0	8.73		
MW-2(M)	1/12/2004	1200	-0.09	15.00	np	6.39	0	8.61		
MW-2(M)	2/12/2004	1418	-2.19	15.00	np	6.14	0	8.86		
MW-2(M)	3/18/2004	1023	3.9	15.00	np	6.66	0	8.34		
MW-2(M)	4/12/2004	944	-1.26	15.00	np	6.98	0	8.02		
MW-2(M)	4/14/2004	1730	-2.47	15.00	np	7.07	0	7.93		
MW-2(M)	6/16/2004	1023	-1.94	15.00	np	7.77	0	7.23		
MW-2(M)	7/19/2004	834	-5.63	15.00	np	8.12	0	6.88		
MW-2(M)	7/22/2004	1757	2.45	15.00	np	8.18	0	6.82		
MW-2(M)	8/17/2004	1015	-3.83	15.00	np	8.52	0	6.48		
MW-2(M)	9/16/2004	928	-3.7	15.00	np	8.27	0	6.73		
MW-3(M)	8/28/2002	1345	1.05	15.42	9.45	10.17	0.72	5.87	17.51	
MW-3(M)	9/12/2002	1025	-2.84	15.42	9.42	10.12	0.7	5.90		
MW-3(M)	9/13/2002	1547	2.52	15.42	9.51	9.88	0.37	5.86		
MW-3(M)	10/11/2002	1155	-1.52	15.42	9.61	10.67	1.06	5.66	18.44	
MW-3(M)	11/15/2002	1134	3.51	15.42	9.07	9.7	0.63	6.26		
MW-3(M)	12/13/2002	906	4.39	15.42	8.68	9.02	0.34	6.69		
MW-3(M)	1/14/2003	1130	2.16	15.42	7.54	8.15	0.61	7.80		
MW-3(M)	2/12/2003	1142	0.66	15.42	7.61	8.18	0.57	7.73		
MW-3(M)	3/13/2003	1037	2.91	15.42	7.01	7.91	0.9	8.29		
MW-3(M)	4/14/2003	1207	4.17	15.42	7.06	8.29	1.23	8.19		
MW-3(M)	5/14/2003	1101	2.59	15.42	7.78	8.94	1.16	7.48		
MW-3(M)	6/17/2003	1500	2.05	15.42	8.42	9.15	0.73	6.90		

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MW-3(M)	7/14/2003	1226	0.11	15.42	8.86	9.57	0.71	6.46		
MW-3(M)	8/13/2003	1403	3	15.42	9.06	9.64	0.58	6.28		
MW-3(M)	9/12/2003	1449	3.21	15.42	9.26	9.59	0.33	6.11		
MW-3(M)	10/13/2003	921	-2.52	15.42	9.35	9.79	0.44	6.01		
MW-3(M)	10/23/2003	939	2.62	15.42	9.15	9.6	0.45	6.21		
MW-3(M)	11/12/2003	1438	3.39	15.42	8.99	9.16	0.17	6.41		
MW-3(M)	12/16/2003	1003	1.46	15.42	7.76	8.21	0.45	7.60		
MW-3(M)	1/11/2004	1359	4.01	15.42	7.19	8.09	0.9	8.11		
MW-3(M)	2/12/2004	1437	-0.76	15.42	7.32	8.79	1.47	7.90		
MW-3(M)	3/18/2004	925	2.49	15.42	7.77	8.51	0.74	7.55		
MW-3(M)	4/12/2004	915	0.43	15.42	7.95	8.58	0.63	7.38		
MW-3(M)	5/19/2004	1054	-1.19	15.42	8.55	9.35	0.8	6.76		
MW-3(M)	6/16/2004	1045	-0.35	15.42	8.7	9.52	0.82	6.61		
MW-3(M)	7/19/2004	855	-5.63	15.42	8.94	9.53	0.59	6.40		
MW-3(M)	8/17/2004	1033	-1.98	15.42	9.3	9.83	0.53	6.05		
MW-3(M)	9/16/2004	944	-2.05	15.42	9.1	9.35	0.25	6.29		
MW-4(M)	8/28/2002	1302	-0.5	15.5	9.16	9.45	0.29	6.30	20.59	
MW-4(M)	9/12/2002	1042	-3.1	15.5	9.21	9.58	0.37	6.24		
MW-4(M)	9/13/2002	1544	1.12	15.5	9.26	9.39	0.13	6.22		
MW-4(M)	10/11/2002	1122	-2.45	15.5	9.46	9.77	0.31	6.00	21.11	
MW-4(M)	11/15/2002	1108	3.51	15.5	9.08	9.12	0.04	6.41		
MW-4(M)	12/13/2002	850	4.39	15.5	np	8.66	0	6.84		
MW-4(M)	1/14/2003	1106	3.45	15.5	np	7.18	0	8.32		
MW-4(M)	2/12/2003	1112	2.12	15.5	6.95	7.92	0.97	8.42		
MW-4(M)	3/13/2003	1007	3.86	15.5	6.46	7.49	1.03	8.91		
MW-4(M)	4/14/2003	1137	4.17	15.5	6.28	8.89	2.61	8.88		
MW-4(M)	5/14/2003	1126	2.59	15.5	7.18	9.48	2.3	8.02		
MW-4(M)	6/17/2003	1452	2.05	15.5	7.98	8.78	0.8	7.42		
MW-4(M)	7/14/2003	1232	1.8	15.5	8.53	8.79	0.26	6.94		
MW-4(M)	8/13/2003	1303	1.76	15.5	8.87	9.14	0.27	6.59		
MW-4(M)	9/12/2003	1445	3.21	15.5	9.07	9.28	0.21	6.40		
MW-4(M)	10/13/2003	914	-2.52	15.5	9.17	9.32	0.15	6.31		
MW-4(M)	10/23/2003	918	1.04	15.5	8.95	9.05	0.1	6.54		
MW-4(M)	11/12/2003	1501	3.39	15.5	np	8.85	0	6.65		
MW-4(M)	12/16/2003	918	2.67	15.5	np	7.45	0	8.05		
MW-4(M)	1/11/2004	1344	4.01	15.5	np	6.86	0	8.64		Product globules in bailer
MW-4(M)	2/12/2004	1408	-2.19	15.5	6.45	8.69	2.24	8.76		Odor
MW-4(M)	3/18/2004	1010	3.9	15.5	6.97	9.16	2.19	8.25		
MW-4(M)	4/12/2004	919	0.43	15.5	7.34	8.81	1.47	7.97		
MW-4(M)	5/19/2004	1055	-1.19	15.5	8.06	8.77	0.71	7.35		
MW-4(M)	6/16/2004	1013	-1.94	15.5	8.27	8.9	0.63	7.15		
MW-4(M)	7/19/2004	839	-5.63	15.5	8.66	8.78	0.12	6.82		
MW-4(M)	8/17/2004	1008	-3.83	15.5	9.04	9.27	0.23	6.43		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-4(M)	9/16/2004	922	-3.7	15.5	8.87	8.93	0.06	6.62		
MW-5(M)	8/28/2002						0			
MW-6(M)	8/28/2002	1140	-1.99	13.78	np	7.71	0	6.07	18.47	
MW-6(M)	9/12/2002	926	-1.83	13.78	np	8.25	0	5.53		
MW-6(M)	9/13/2002	1515	1.12	13.78	np	7.71	0	6.07		
MW-6(M)	10/11/2002	1012	-2.51	13.78	np	7.92	0	5.86	19.06	
MW-6(M)	11/15/2002	921	2.73	13.78	np	7.41	0	6.37		
MW-6(M)	12/13/2002	802	4.26	13.78	np	8.85	0	4.93		
MW-6(M)	1/14/2003	1028	3.99	13.78	np	7.01	0	6.77		
MW-6(M)	2/12/2003	1031	2.12	13.78	np	6.61	0	7.17		
MW-6(M)	3/13/2003	930	4.37	13.78	np	6.93	0	6.85		
MW-6(M)	4/14/2003	1053	4.35	13.78	np	6.95	0	6.83		
MW-6(M)	5/14/2003	956	1.15	13.78	np	7.14	0	6.64		
MW-6(M)	6/17/2003	1402	0.45	13.78	np	7.12	0	6.66		
MW-6(M)	7/14/2003	1050	-1.9	13.78	np	7.47	0	6.31		
MW-6(M)	8/13/2003	1316	1.76	13.78	np	7.48	0	6.30		
MW-6(M)	9/12/2003	1312	2.26	13.78	np	7.56	0	6.22		
MW-6(M)	10/22/2003	1530	-2.21	13.78	np	7.00	0	6.78		
MW-6(M)	11/12/2003	1348	3.65	13.78	np	8.27	0	5.51		Pressure release
MW-6(M)	12/16/2003	857	2.67	13.78	np	5.86	0	7.92		
MW-6(M)	1/11/2004	1332	4.01	13.78	np	5.41	0	8.37		
MW-6(M)	1/12/2004	814	0.52	13.78	np	5.58	0	8.20		
MW-6(M)	2/12/2004	1328	-3.4	13.78	np	5.69	0	8.09		
MW-6(M)	3/18/2004	941	3.9	13.78	np	6.41	0	7.37		
MW-6(M)	4/12/2004	905	0.43	13.78	np	6.49	0	7.29		
MW-6(M)	4/13/2004	1045	-0.52	13.78	np	6.45	0	7.33		
MW-6(M)	5/19/2004	1135	0.49	13.78	np	6.95	0	6.83		
MW-6(M)	6/16/2004	948	-1.94	13.78	np	7.69	0	6.09		
MW-6(M)	7/19/2004	827	-5.2	13.78	np	7.45	0	6.33		
MW-6(M)	7/19/2004	1505	2.72	13.78	np	7.29	0	6.49		
MW-6(M)	8/17/2004	947	-3.83	13.78	np	7.82	0	5.96		
MW-6(M)	9/16/2004	857	-3.7	13.78	np	7.56	0	6.22		
MW-7(M)	8/28/2002	1102	-3.21	14.86	np	8.31	0	6.55	18.64	
MW-7(M)	9/12/2002	900	-1.83	14.86	np	8.36	0	6.50		
MW-7(M)	9/13/2002	1455	1.12	14.86	np	8.43	0	6.43		
MW-7(M)	10/11/2002	957	-2.51	14.86	np	8.58	0	6.28	18.93	
MW-7(M)	11/15/2002	914	2.73	14.86	np	8.57	0	6.29		
MW-7(M)	12/13/2002	754	4.26	14.86	np	7.7	0	7.16		
MW-7(M)	1/14/2003	1017	3.99	14.86	np	6.01	0	8.85		
MW-7(M)	2/12/2003	1021	3.06	14.86	np	5.96	0	8.90		
MW-7(M)	3/13/2003	920	4.37	14.86	np	5.3	0	9.56		

**TABLE 1
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**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-7(M)	4/14/2003	1044	4.35	14.86	np	5.5	0	9.36		
MW-7(M)	5/14/2003	947	1.15	14.86	np	6.42	0	8.44		
MW-7(M)	6/17/2003	1347	0.45	14.86	np	7.13	0	7.73		
MW-7(M)	7/14/2003	1124	-1.9	14.86	np	7.66	0	7.20		
MW-7(M)	8/13/2003	1311	1.76	14.86	np	8.03	0	6.83		
MW-7(M)	9/12/2003	1307	2.26	14.86	np	8.27	0	6.59		
MW-7(M)	10/13/2003	852	-2.52	14.86	np	8.30	0	6.56		
MW-7(M)	10/13/2003	1547	2.54	14.86	np	8.27	0	6.59		
MW-7(M)	11/12/2003	1356	3.65	14.86	np	7.96	0	6.90		
MW-7(M)	12/16/2003	903	2.67	14.86	np	6.41	0	8.45		
MW-7(M)	1/11/2004	1335	4.01	14.86	np	5.77	0	9.09		
MW-7(M)	1/12/2004	940	-1.27	14.86	np	5.81	0	9.05		
MW-7(M)	2/12/2004	1333	-3.4	14.86	np	5.53	0	9.33		
MW-7(M)	3/18/2004	946	3.9	14.86	np	6.23	0	8.63		
MW-7(M)	4/12/2004	931	-1.26	14.86	np	6.51	0	8.35		
MW-7(M)	4/12/2004	1725	-1.44	14.86	np	6.63	0	8.23		
MW-7(M)	5/19/2004	1139	0.49	14.86	np	7.20	0	7.66		
MW-7(M)	6/16/2004	957	-1.94	14.86	np	7.42	0	7.44		
MW-7(M)	7/19/2004	829	-5.2	14.86	np	7.80	0	7.06		
MW-7(M)	7/19/2004	1550	2.5	14.86	np	7.81	0	7.05		
MW-7(M)	9/16/2004	903	-3.7	14.86	np	7.91	0	6.95		
MW-8(M)	8/28/2002	1326	-0.5	15.23	9.69	11.08	1.39	5.37	18.89	
MW-8(M)	9/12/2002	1036	-3.1	15.23	9.6	10.85	1.25	5.48		
MW-8(M)	9/13/2002	1540	1.12	15.23	9.7	10.41	0.71	5.44		
MW-8(M)	10/11/2002	1211	-1.52	15.23	9.89	10.91	1.02	5.22	18.74	
MW-8(M)	11/15/2002	1126	3.51	15.23	8.57	9.26	0.69	6.58		
MW-8(M)	12/13/2002	859	4.39	15.23	8.04	8.81	0.77	7.10		
MW-8(M)	1/14/2003	1123	3.45	15.23	8.2	8.53	0.33	6.99		
MW-8(M)	2/12/2003	1133	0.66	15.23	8.27	8.75	0.48	6.90		
MW-8(M)	3/13/2003	1029	3.86	15.23	np	8.22	0	7.01		
MW-8(M)	4/14/2003	1158	4.17	15.23	np	7.72	0	7.51		
MW-8(M)	5/14/2003	1042	2.59	15.23	8.71	9.45	0.74	6.43		
MW-8(M)	6/17/2003	1440	2.05	15.23	8.91	9.77	0.86	6.22		
MW-8(M)	7/14/2003	1221	0.11	15.23	9.32	9.79	0.47	5.85		
MW-8(M)	8/13/2003	1357	3	15.23	9.36	9.63	0.27	5.84		
MW-8(M)	9/12/2003	1437	3.21	15.23	9.19	9.41	0.22	6.01		
MW-8(M)	10/13/2003	932	-1.55	15.23	9.57	9.92	0.35	5.62		
MW-8(M)	10/23/2003	836	1.04	15.23	9.43	9.86	0.43	5.75		
MW-8(M)	11/12/2003	1442	3.39	15.23	8.81	8.86	0.05	6.41		
MW-8(M)	12/16/2003	954	1.46	15.23	np	8.71	0	6.52		
MW-8(M)	1/11/2004	1355	4.01	15.23	np	7.55	0	7.68		Sheen in bailer
MW-8(M)	2/12/2004	1430	-2.19	15.23	8.37	8.48	0.11	6.85		
MW-8(M)	3/18/2004	913	2.49	15.23	8.44	8.53	0.09	6.78		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-8(M)	4/12/2004	907	0.43	15.23	8.43	8.46	0.03	6.80		
MW-8(M)	5/19/2004	1112	-1.19	15.23	9.04	9.2	0.16	6.17		
MW-8(M)	6/16/2004	1037	-0.35	15.23	9.2	9.3	0.1	6.02		
MW-8(M)	7/19/2004	859	-5.63	15.23	9.34	9.4	0.06	5.88		
MW-8(M)	8/17/2004	1024	-3.83	15.23	9.64	9.9	0.26	5.56		
MW-8(M)	9/16/2004	938	-2.05	15.23	9.41	9.43	0.02	5.82		
MW-9(M)	8/28/2002	1357	1.05	15.42	9.35	13.21	3.86	5.58	19.12	
MW-9(M)	9/12/2002	1049	-3.1	15.42	9.3	12.08	2.78	5.77		
MW-9(M)	9/13/2002	1552	1.12	15.42	9.61	10.21	0.6	5.73		
MW-9(M)	10/11/2002	1226	-1.52	15.42	9.75	10.92	1.17	5.52	19.47	
MW-9(M)	11/15/2002	1141	2.61	15.42	9.16	10.28	1.12	6.12		
MW-9(M)	12/13/2002	915	4.39	15.42	8.78	9.79	1.01	6.51		
MW-9(M)	1/14/2003	1137	2.16	15.42	7.76	8.55	0.79	7.56		
MW-9(M)	2/12/2003	1150	0.66	15.42	7.85	8.85	1	7.44		
MW-9(M)	3/13/2003	1045	2.91	15.42	7.35	8.21	0.86	7.96		
MW-9(M)	4/14/2003	1217	4.17	15.42	7.33	8.9	1.57	7.89		
MW-9(M)	5/15/2003	1116	2.59	15.42	8.11	10.3	2.19	7.03		
MW-9(M)	6/17/2003	1508	2.05	15.42	8.44	10.65	2.21	6.70		
MW-9(M)	7/14/2003	1241	1.8	15.42	9.00	9.94	0.94	6.30		
MW-9(M)	8/13/2003	1409	3	15.42	9.20	9.8	0.6	6.14		
MW-9(M)	9/12/2003	1456	3.21	15.42	9.38	9.9	0.52	5.97		
MW-9(M)	10/13/2003	939	-1.55	15.42	9.46	10.18	0.72	5.87		
MW-9(M)	10/23/2003	956	2.62	15.42	9.24	9.92	0.68	6.09		
MW-9(M)	11/12/2003	1456	3.39	15.42	9.15	9.49	0.34	6.23		
MW-9(M)	12/16/2003	1009	1.46	15.42	8.02	8.19	0.17	7.38		
MW-9(M)	1/11/2004	1407	4.01	15.42	7.52	7.66	0.14	7.88		
MW-9(M)	2/12/2004	1444	-0.76	15.42	7.76	8.69	0.93	7.54		
MW-9(M)	3/18/2004	919	2.49	15.42	8.07	8.93	0.86	7.24		
MW-9(M)	4/12/2004	912	0.43	15.42	8.21	8.83	0.62	7.13		
MW-9(M)	5/19/2004	1108	-1.19	15.42	8.73	9.83	1.1	6.55		
MW-9(M)	7/19/2004	905	-5.63	15.42	9.05	10.15	1.1	6.23		
MW-9(M)	8/17/2004	1029	-3.83	15.42	9.41	10.44	1.03	5.88		
MW-9(M)	9/16/2004	950	-2.05	15.42	9.22	9.88	0.66	6.12		
MW-10(M)	8/28/2002	1430	1.05	16.32	np	11.23	0	5.09	19.43	
MW-10(M)	9/12/2002	1005	-2.84	16.32	np	11.1	0	5.22		
MW-10(M)	9/13/2002	1526	1.12	16.32	np	11.13	0	5.19		
MW-10(M)	10/11/2002	1055	-2.45	16.32	np	11.22	0	5.10	19.83	
MW-10(M)	11/15/2002	942	3.5	16.32	np	10.63	0	5.69		
MW-10(M)	12/13/2002	821	4.26	16.32	np	10.21	0	6.11		
MW-10(M)	1/14/2003	1048	3.45	16.32	np	9.62	0	6.70		
MW-10(M)	2/12/2003	1051	2.12	16.32	np	9.91	0	6.41		
MW-10(M)	3/13/2003	948	3.86	16.32	np	9.4	0	6.92		

**TABLE 1
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**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
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MW-10(M)	4/14/2003	1118	4.35	16.32	np	9.1	0	7.22		
MW-10(M)	5/15/2003	1019	1.15	16.32	np	10.38	0	5.94		
MW-10(M)	6/17/2003	1413	0.45	16.32	np	10.41	0	5.91		
MW-10(M)	7/14/2003	1141	0.11	16.32	np	10.75	0	5.57		
MW-10(M)	8/13/2003	1333	3	16.32	np	10.77	0	5.55		
MW-10(M)	9/12/2003	1348	3.2	16.32	np	10.95	0	5.37		
MW-10(M)	10/13/2003	950	-1.55	16.32	np	10.88	0	5.44		
MW-10(M)	10/15/2003	1500	3.78	16.32	np	10.85	0	5.47		
MW-10(M)	11/12/2003	1334	3.65	16.32	np	10.67	0	5.65		
MW-10(M)	12/16/2003	1027	1.46	16.32	np	9.68	0	6.64		
MW-10(M)	1/11/2004	1410	4.01	16.32	np	9.32	0	7.00		
MW-10(M)	1/13/2004	1050	-1.76	16.32	np	9.55	0	6.77		
MW-10(M)	2/12/2004	1305	-3.4	16.32	np	9.95	0	6.37		
MW-10(M)	3/18/2004	856	2.49	16.32	np	10.17	0	6.15		Iron
MW-10(M)	4/12/2004	910	0.43	16.32	np	10.12	0	6.20		
MW-10(M)	4/13/2004	820	2.99	16.32	np	10.19	0	6.13		
MW-10(M)	5/19/2004	1124	-1.19	16.32	np	10.56	0	5.76		
MW-10(M)	6/16/2004	1110	-0.35	16.32	np	10.69	0	5.63		
MW-10(M)	7/19/2004	909	-5.63	16.32	np	10.68	0	5.64		
MW-10(M)	7/19/2004	1715	1.56	16.32	np	10.65	0	5.67		
MW-10(M)	8/17/2004	1048	-1.98	16.32	np	11.01	0	5.31		
MW-10(M)	9/16/2004	1007	-2.05	16.32	np	10.72	0	5.60		
MW-11(M)	8/28/2002	1420	1.05	16.34	np	10.87	0	5.47	19.81	
MW-11(M)	9/12/2002	1000	-2.84	16.34	np	10.8	0	5.54		
MW-11(M)	9/13/2002	1531	1.12	16.34	np	10.83	0	5.51		
MW-11(M)	10/11/2002	1108	-2.45	16.34	np	11.01	0	5.33	19.83	
MW-11(M)	11/15/2002	949	3.5	16.34	np	10.37	0	5.97		
MW-11(M)	12/13/2002	829	4.26	16.34	np	9.94	0	6.40		
MW-11(M)	1/14/2003	1057	3.45	16.34	np	9.08	0	7.26		
MW-11(M)	2/12/2003	1058	2.12	16.34	np	9.25	0	7.09		
MW-11(M)	3/13/2003	958	3.86	16.34	np	8.71	0	7.63		
MW-11(M)	4/14/2003	1127	4.35	16.34	np	8.86	0	7.48		
MW-11(M)	5/15/2003	1028	1.15	16.34	np	9.79	0	6.55		
MW-11(M)	6/17/2003	1422	0.45	16.34	np	10.02	0	6.32		
MW-11(M)	7/14/2003	1149	0.11	16.34	np	10.39	0	5.95		
MW-11(M)	8/13/2003	1340	3	16.34	np	10.41	0	5.93		
MW-11(M)	9/12/2003	1353	3.2	16.34	np	10.6	0	5.74		
MW-11(M)	10/13/2003	956	-1.55	16.34	np	10.72	0	5.62		
MW-11(M)	10/15/2003	1720	2.7	16.34	np	10.41	0	5.93		
MW-11(M)	11/12/2003	1341	3.65	16.34	np	10.29	0	6.05		Slight Odor
MW-11(M)	12/16/2003	1019	1.46	16.34	np	9.27	0	7.07		
MW-11(M)	1/11/2004	1414	4.01	16.34	np	8.73	0	7.61		
MW-11(M)	1/13/2004	1235	-0.61	16.34	np	9.21	0	7.13		slight sheen

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-11(M)	2/12/2004	1311	-3.4	16.34	np	9.43	0	6.91		
MW-11(M)	3/18/2004	903	2.49	16.34	np	9.48	0	6.86		
MW-11(M)	4/12/2004	948	-1.26	16.34	np	9.6	0	6.74		
MW-11(M)	4/13/2004	945	1.05	16.34	np	9.53	0	6.81		
MW-11(M)	5/19/2004	1120	-1.19	16.34	np	10.2	0	6.14		
MW-11(M)	6/16/2004	1124	-0.35	16.34	np	10.31	0	6.03		
MW-11(M)	7/19/2004	907	-5.63	16.34	np	10.49	0	5.85		
MW-11(M)	7/21/2004	1646	2.52	16.34	np	10.37	0	5.97		
MW-11(M)	8/17/2004	1059	-1.98	16.34	np	10.77	0	5.57		
MW-11(M)	9/16/2004	1000	-2.05	16.34	np	10.52	0	5.82		
MW-12(A)	10/13/2003	1152	1.5	30.58	np	20.00	0	10.58	25.38	
MW-12(A)	10/22/2003	955	3.54	30.58	np	19.61	0	10.97		
MW-12(A)	11/12/2003	1116	0.56	30.58	np	18.87	0	11.71		
MW-12(A)	12/16/2003	1345	0.34	30.58	np	15.44	0	15.14		
MW-12(A)	1/11/2004	1616	4.26	30.58	np	14.76	0	15.82		
MW-12(A)	1/15/2004	940	0.81	30.58	np	14.70	0	15.88		
MW-12(A)	2/12/2004	932	-2.53	30.58	np	14.26	0	16.32		
MW-12(A)	3/18/2004	1340	1.23	30.58	np	15.27	0	15.31		
MW-12(A)	4/12/2004	1208	-4.16	30.58	np	15.85	0	14.73		
MW-12(A)	4/16/2004	725	-1.63	30.58	np	16.00	0	14.58		
MW-12(A)	5/19/2004	1253	1.86	30.58	np	17.04	0	13.54		
MW-12(A)	6/16/2004	1233	1.78	30.58	np	17.61	0	12.97		
MW-12(A)	7/19/2004	1122	-2.94	30.58	np	18.15	0	12.43		
MW-12(A)	7/22/2004	655	-1.14	30.58	np	18.19	0	12.39		
MW-12(A)	8/17/2004	1320	1.62	30.58	np	18.64	0	11.94		
MW-12(A)	9/16/2004	1310	3.67	30.58	np	18.74	0	11.84		
MW-13(A)	10/13/2003	1157	1.5	31.36	np	22.68	0	8.68	26.42	
MW-13(A)	10/22/2003	1130	3.62	31.36	np	22.34	0	9.02		Odor
MW-13(A)	11/12/2003	1122	0.56	31.36	np	22.14	0	9.22		
MW-13(A)	12/16/2003	1352	0.34	31.36	np	18.41	0	12.95		
MW-13(A)	1/11/2004	1620	4.26	31.36	np	17.39	0	13.97		
MW-13(A)	1/15/2004	1130	-1.98	31.36	np	17.28	0	14.08		
MW-13(A)	2/12/2004	937	-2.53	31.86	np	16.71	0	15.15		
MW-13(A)	3/18/2004	1345	1.23	31.86	np	17.83	0	14.03		
MW-13(A)	4/12/2004	1210	-4.16	31.86	np	18.45	0	13.41		
MW-13(A)	4/16/2004	927	1.51	31.86	np	18.82	0	13.04		
MW-13(A)	5/19/2004	1255	1.86	31.86	np	19.85	0	12.01		
MW-13(A)	6/16/2004	1238	1.78	31.86	np	20.53	0	11.33		
MW-13(A)	7/19/2004	1124	-2.94	31.86	np	21.33	0	10.53		
MW-13(A)	7/22/2004	818	-2.86	31.86	np	21.4	0	10.46		
MW-13(A)	8/17/2004	1324	1.62	31.86	np	21.96	0	9.90		
MW-13(A)	9/16/2004	1314	3.67	31.86	np	21.92	0	9.94		

**TABLE 1
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**Remedial Investigation/Feasibility Study
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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-14(A)	10/13/2003	1203	1.5	23.39	np	15.06	0	8.33	18.81	
MW-14(A)	10/21/2003	1645	-1.5	23.39	np	14.7	0	8.69		
MW-14(A)	11/12/2003	1056	0.56	23.39	np	14.55	0	8.84		Iron
MW-14(A)	12/16/2003	1336	0.34	23.39	np	12.01	0	11.38		
MW-14(A)	1/11/2004	1624	4.26	23.39	np	11.47	0	11.92		
MW-14(A)	1/15/2004	1250	-2.74	23.39	np	11.41	0	11.98		Iron
MW-14(A)	2/12/2004	1106	-3.59	23.39	np	11.07	0	12.32		
MW-14(A)	3/18/2004	1226	4.37	23.39	np	11.57	0	11.82		
MW-14(A)	4/12/2004	1205	-4.16	23.39	np	11.88	0	11.51		
MW-14(A)	4/16/2004	815	-0.11	23.39	np	11.97	0	11.42		
MW-14(A)	5/19/2004	1250	1.86	23.39	np	12.5	0	10.89		
MW-14(A)	6/16/2004	1226	1.01	22.39	np	12.73	0	9.66		
MW-14(A)	7/19/2004	1122	-2.94	22.39	np	13.28	0	9.11		
MW-14(A)	7/23/2004	757	-1.63	22.39	np	13.34	0	9.05		
MW-14(A)	8/17/2004	1317	1.62	22.39	np	14.21	0	8.18		
MW-14(A)	9/16/2004	1304	3.67	22.39	np	13.83	0	8.56		
MW-15(A)	10/13/2003	1116	-0.1	16.95	np	9.08	0	7.87	14.81	
MW-15(A)	10/20/2003	1340	0.06	16.95	np	8.87	0	8.08		
MW-15(A)	11/12/2003	1026	-0.65	16.95	np	8.58	0	8.37		
MW-15(A)	12/16/2003	1239	-0.3	16.95	np	6.35	0	10.60		
MW-15(A)	1/11/2004	1529	4.58	16.95	5.77	5.8	0.03	11.18		
MW-15(A)	2/12/2004	1058	-3.59	16.95	5.41	5.9	0.49	11.47		Strong Odor
MW-15(A)	3/18/2004	1230	4.37	16.95	6.1	8.04	1.94	10.56		
MW-15(A)	4/12/2004	1153	-4.16	16.95	6.5	7.26	0.76	10.34		
MW-15(A)	5/19/2004	1403	2.56	16.95	7.25	7.95	0.7	9.60		Very thick, dark, strong odor
MW-15(A)	6/16/2004	1351	1.8	16.95	7.51	8.28	0.77	9.32		Very strong odor
MW-15(A)	7/19/2004	1131	-1.08	16.95	8.04	8.84	0.8	8.79		Very strong odor
MW-15(A)	8/17/2004	1305	1.62	16.95	8.46	9.27	0.81	8.37		Very strong odor
MW-15(A)	9/16/2004	1255	3.67	16.95	8.4	8.89	0.49	8.48		
MW-16(A)	10/13/2003	1111	-0.1	16.48	np	8.59	0	7.89	15.21	
MW-16(A)	10/20/2003	1510	-0.31	16.48	np	8.39	0	8.09		
MW-16(A)	11/12/2003	1035	0.56	16.48	np	8.18	0	8.30		
MW-16(A)	12/16/2003	1224	-0.19	16.48	np	6.51	0	9.97		possible sheen
MW-16(A)	1/11/2004	1523	4.58	16.48	np	6.05	0	10.43		iron
MW-16(A)	1/19/2004	930	5.44	16.48	np	6.04	0	10.44		
MW-16(A)	2/12/2004	1110	-3.59	16.48	np	5.81	0	10.67		
MW-16(A)	3/18/2004	1221	4.37	16.48	np	6.33	0	10.15		
MW-16(A)	4/12/2004	1158	-4.16	16.48	np	6.63	0	9.85		
MW-16(A)	4/15/2004	850	2.95	16.48	np	6.68	0	9.80		
MW-16(A)	5/19/2004	1357	2.56	16.48	np	7.2	0	9.28		
MW-16(A)	6/16/2004	1400	1.8	16.48	np	7.37	0	9.11		

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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-16(A)	7/19/2004	1021	-4.71	16.48	np	7.78	0	8.70		
MW-16(A)	7/22/2004	1515	1.37	16.48	np	7.81	0	8.67		
MW-16(A)	8/17/2004	1312	1.62	16.48	np	8.13	0	8.35		
MW-16(A)	9/16/2004	1300	3.67	16.48	np	8.04	0	8.44		
MW-17(A)	10/13/2003	1125	-0.1	15.69	np	8.37	0	7.32	15.35	
MW-17(A)	10/17/2003	1240	1.23	15.69	np	8.31	0	7.38		
MW-17(A)	11/12/2003	1020	-0.65	15.69	np	7.88	0	7.81		
MW-17(A)	12/16/2003	1245	-0.3	15.69	np	5.7	0	9.99		
MW-17(A)	1/11/2004	1540	4.26	15.69	np	5	0	10.69		
MW-17(A)	1/19/2004	1130	4.2	15.69	np	5	0	10.69		
MW-17(A)	2/12/2004	1047	-3.59	15.69	np	4.66	0	11.03		
MW-17(A)	3/18/2004	1245	3.1	15.69	np	5.43	0	10.26		
MW-17(A)	4/12/2004	1145	-4.16	15.69	np	5.88	0	9.81		
MW-17(A)	4/15/2004	1055	3.34	15.69	np	6	0	9.69		
MW-17(A)	5/19/2004	1351	2.56	15.69	np	6.66	0	9.03		
MW-17(A)	6/16/2004	1338	1.8	15.69	np	6.95	0	8.74		
MW-17(A)	7/19/2004	1026	-4.71	15.69	np	7.45	0	8.24		
MW-17(A)	7/22/2004	1636	2.92	15.69	np	7.5	0	8.19		
MW-17(A)	8/17/2004	1254	1.62	15.69	np	7.86	0	7.83		
MW-17(A)	9/16/2004	1245	3.67	15.69	np	7.79	0	7.90		
MW-18(A)	10/13/2003	1117	-0.1	16.23	np	8.85	0	7.38	15.36	
MW-18(A)	10/21/2003	1300	0.89	16.23	np	8.58	0	7.65		
MW-18(A)	11/12/2003	1042	0.56	16.23	np	8.39	0	7.84		Possible Sheen
MW-18(A)	12/16/2003	1234	-0.3	16.23	np	6.38	0	9.85		
MW-18(A)	1/19/2004	1040	5.35	16.23	np	5.74	0	10.49		
MW-18(A)	2/12/2004	1052	-3.59	16.23	np	5.42	0	10.81		
MW-18(A)	3/18/2004	1240	3.1	16.23	np	6.1	0	10.13		
MW-18(A)	4/12/2004	1148	-4.16	16.23	np	6.55	0	9.68		
MW-18(A)	4/15/2004	1000	3.54	16.23	np	6.62	0	9.61		
MW-18(A)	5/19/2004	1355	2.56	16.23	np	7.27	0	8.96		
MW-18(A)	6/16/2004	1346	1.8	16.23	np	7.5	0	8.73		
MW-18(A)	7/19/2004	1025	-4.71	16.23	np	7.98	0	8.25		
MW-18(A)	7/21/2004	1535	2.65	16.23	np	8	0	8.23		
MW-18(A)	8/17/2004	1258	1.62	16.23	np	8.36	0	7.87		
MW-18(A)	9/16/2004	1251	3.67	16.23	np	8.29	0	7.94		
MW-19(A)	10/13/2003	1049	-0.1	17.98	np	10.59	0	7.39	15.3	
MW-19(A)	10/20/2003	1050	2.89	17.98	np	10.43	0	7.55		
MW-19(A)	11/12/2003	1145	1.93	17.98	np	10.18	0	7.80		
MW-19(A)	1/13/2004	1515	1.91	17.98	np	7.99	0	9.99		
MW-19(A)	2/12/2004	1122	-3.59	17.9	np	7.66	0	10.24		
MW-19(A)	3/18/2004	1210	4.37	17.9	np	8.26	0	9.64		

**TABLE 1
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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-19(A)	4/12/2004	1133	-4.16	17.9	np	8.6	0	9.30		
MW-19(A)	4/15/2004	1545	-3.71	17.9	np	8.67	0	9.23		
MW-19(A)	5/19/2004	1243	1.86	17.9	np	9.18	0	8.72		
MW-19(A)	7/19/2004	952	-4.71	17.9	np	9.8	0	8.10		
MW-19(A)	7/20/2004	1343	1.28	17.9	np	9.85	0	8.05		
MW-19(A)	8/17/2004	1152	-0.05	17.9	np	10.15	0	7.75		
MW-19(A)	9/16/2004	1042	-0.04	17.9	np	10.07	0	7.83		
MW-20(A)	10/13/2003	1047	-0.1	17.04	np	10.03	0	7.01	15.39	
MW-20(A)	10/20/2003	1210	1.9	17.04	np	9.88	0	7.16		
MW-20(A)	11/12/2003	1150	1.93	17.04	np	9.65	0	7.39		Iron
MW-20(A)	12/16/2003	1410	0.34	17.04	np	8.03	0	9.01		Iron
MW-20(A)	1/11/2004	1510	4.58	17.04	np	7.41	0	9.63		
MW-20(A)	1/13/2004	1630	3.15	17.04	np	7.44	0	9.60		Iron
MW-20(A)	2/12/2004	1126	-3.59	17.04	np	7.11	0	9.93		
MW-20(A)	3/18/2004	1215	4.37	17.04	np	7.7	0	9.34		Iron
MW-20(A)	4/12/2004	1128	-2.84	17.04	np	8.06	0	8.98		
MW-20(A)	4/15/2004	1642	-4.14	17.04	np	8.13	0	8.91		Iron
MW-20(A)	5/19/2004	1246	1.86	17.04	np	8.63	0	8.41		
MW-20(A)	6/16/2004	1415	1.8	17.04	np	8.86	0	8.18		
MW-20(A)	7/19/2004	947	-4.71	17.04	np	9.27	0	7.77		
MW-20(A)	7/20/2004	1444	2.36	17.04	np	9.3	0	7.74		
MW-20(A)	8/17/2004	1156	-0.05	17.04	np	9.61	0	7.43		
MW-20(A)	9/16/2004	1048	-0.04	17.04	np	9.82	0	7.22		
MW-21(A)	10/13/2003	1035	-0.1	15.90	np	9.22	0	6.68	15.35	
MW-21(A)	10/20/2003	940	3.26	15.90	np	9.11	0	6.79		
MW-21(A)	11/12/2003	1156	1.93	15.90	np	8.91	0	6.99		
MW-21(A)	12/16/2003	1216	-0.19	15.90	np	7.49	0	8.41		Iron
MW-21(A)	1/11/2004	1503	4.58	15.90	np	6.9	0	9.00		
MW-21(A)	1/13/2004	1355	0.66	15.90	np	6.89	0	9.01		
MW-21(A)	2/12/2004	1135	-3.92	15.90	np	6.66	0	9.24		
MW-21(A)	3/18/2004	1202	4.37	15.90	np	7.17	0	8.73		
MW-21(A)	4/12/2004	1138	-4.16	15.90	np	7.49	0	8.41		
MW-21(A)	4/16/2004	1115	3.53	15.90	np	7.58	0	8.32		
MW-21(A)	5/19/2004	1237	1.86	15.90	np	7.99	0	7.91		
MW-21(A)	6/16/2004	1219	1.01	15.90	np	8.21	0	7.69		
MW-21(A)	7/19/2004	942	-4.71	15.90	np	8.57	0	7.33		
MW-21(A)	7/20/2004	1533	2.73	15.90	np	8.6	0	7.30		
MW-21(A)	8/17/2004	1201	-0.05	15.90	np	8.9	0	7.00		
MW-21(A)	9/16/2004	1037	-0.04	15.90	np	8.82	0	7.08		
MW-22(A)	10/13/2003	1037	-0.1	16.13	np	9.24	0	6.89	15.08	
MW-22(A)	10/16/2003	940	0.09	16.13	np	9.21	0	6.92		

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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-22(A)	11/12/2003	1203	1.93	16.13	np	8.8	0	7.33		
MW-22(A)	12/16/2003	1048	0.48	16.13	np	6.91	0	9.22		
MW-22(A)	1/19/2004	815	3.22	16.13	np	6.15	0	9.98		
MW-22(A)	3/18/2004	1157	4.37	16.13	np	6.55	0	9.58		
MW-22(A)	4/12/2004	1120	-2.84	16.13	np	6.97	0	9.16		
MW-22(A)	4/15/2004	1435	-2.62	16.13	np	7.07	0	9.06		
MW-22(A)	5/19/2004	1233	1.86	16.13	np	7.66	0	8.47		
MW-22(A)	6/16/2004	1210	1.01	16.13	np	7.93	0	8.20		
MW-22(A)	7/19/2004	1008	-4.71	16.13	np	8.38	0	7.75		
MW-22(A)	7/20/2004	1111	-3.82	16.13	np	8.4	0	7.73		
MW-22(A)	8/17/2004	1147	-0.05	16.13	np	8.78	0	7.35		
MW-22(A)	9/16/2004	1032	-0.04	16.13	np	8.74	0	7.39		
MW-23(A)	10/13/2003	1137	1.5	16.22	np	8.86	0	7.36	14.93	
MW-23(A)	10/20/2003	1630	0.49	16.22	np	8.71	0	7.51		
MW-23(A)	11/12/2003	1013	-0.65	16.22	np	8.3	0	7.92		
MW-23(A)	12/16/2003	1250	-0.3	16.22	np	5.36	0	10.86		
MW-23(A)	1/11/2004	1543	4.26	16.22	np	4.57	0	11.65		
MW-23(A)	1/15/2004	1745	1.31	16.22	np	4.47	0	11.75		
MW-23(A)	2/12/2004	1041	-3.59	16.22	np	4.09	0	12.13		
MW-23(A)	3/18/2004	1249	3.1	16.22	np	5.13	0	11.09		
MW-23(A)	4/12/2004	1112	-2.84	16.22	np	5.69	0	10.53		
MW-23(A)	4/15/2004	1201	2.17	16.22	np	5.8	0	10.42		
MW-23(A)	5/19/2004	1349	2.56	16.22	np	6.78	0	9.44		
MW-23(A)	6/16/2004	1331	1.8	16.22	np	7.18	0	9.04		
MW-23(A)	7/19/2004	1032	-2.94	16.22	np	7.8	0	8.42		
MW-23(A)	7/20/2004	1645	2.19	16.22	np	7.83	0	8.39		
MW-23(A)	8/17/2004	1239	1.62	16.22	np	8.29	0	7.93		
MW-23(A)	9/16/2004	1232	3.67	16.22	np	8.2	0	8.02		
MW-24(A)	10/13/2003	1154	1.5	16.56	np	9.15	0	7.41	14.87	
MW-24(A)	10/21/2003	1430	-1.43	16.56	np	8.52	0	8.04		
MW-24(A)	11/12/2003	942	-0.65	16.56	np	8.17	0	8.39		
MW-24(A)	12/16/2003	1304	-0.3	16.56	np	4.45	0	12.11		
MW-24(A)	1/11/2004	1547	4.26	16.56	np	3.96	0	12.60		
MW-24(A)	1/15/2004	1630	0.29	16.56	np	3.85	0	12.71		
MW-24(A)	2/12/2004	1022	-2.53	16.56	np	4.05	0	12.51		Iron
MW-24(A)	3/18/2004	1301	3.1	16.56	np	4.96	0	11.60		
MW-24(A)	4/12/2004	1103	-2.84	16.56	np	5.65	0	10.91		
MW-24(A)	4/14/2004	1500	-3.92	16.56	np	5.78	0	10.78		
MW-24(A)	5/19/2004	1338	2.56	16.56	np	6.94	0	9.62		
MW-24(A)	6/16/2004	1312	1.78	16.56	np	7.08	0	9.48		
MW-24(A)	7/19/2004	1039	-2.94	16.56	np	7.97	0	8.59		
MW-24(A)	7/22/2004	1222	-3.63	16.56	np	8.03	0	8.53		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-24(A)	8/17/2004	1230	1.62	16.56	np	8.49	0	8.07		
MW-24(A)	9/16/2004	1221	2.05	16.56	np	8.02	0	8.54		
MW-26(A)	10/13/2003	1150	1.5	16.27	np	9.14	0	7.13	15.35	
MW-26(A)	10/17/2003	1600	3.29	16.27	np	9.09	0	7.18		
MW-26(A)	11/12/2003	947	-0.65	16.27	np	8.46	0	7.81		
MW-26(A)	12/16/2003	1259	-0.3	16.27	np	5.51	0	10.76		
MW-26(A)	1/11/2004	1548	4.26	16.27	np	4.69	0	11.58		
MW-26(A)	1/15/2004	1600	-0.91	16.27	np	4.65	0	11.62		
MW-26(A)	2/12/2004	1026	-2.53	16.27	np	4.43	0	11.84		
MW-26(A)	3/18/2004	1305	3.1	16.27	np	5.01	0	11.26		
MW-26(A)	4/12/2004	1100	-2.84	16.27	np	5.91	0	10.36		
MW-26(A)	4/14/2004	1414	-2.64	16.27	np	6	0	10.27		
MW-26(A)	5/19/2004	1330	2.56	16.27	np	6.95	0	9.32		
MW-26(A)	6/16/2004	1316	1.78	16.27	np	7.31	0	8.96		
MW-26(A)	7/19/2004	1037	-2.94	16.27	np	7.98	0	8.29		
MW-26(A)	7/22/2004	1140	-3.63	16.27	np	8.02	0	8.25		
MW-26(A)	8/17/2004	1226	-0.05	16.27	np	8.5	0	7.77		
MW-26(A)	9/16/2004	1217	2.05	16.27	np	8.43	0	7.84		
MW-27(A)	10/13/2003	1213	1.5	16.36	np	9.26	0	7.10	15.24	
MW-27(A)	10/21/2003	905	2.61	16.36	np	9.02	0	7.34		
MW-27(A)	11/12/2003	1000	-0.65	16.36	np	8.54	0	7.82		Slight Odor
MW-27(A)	12/16/2003	1329	-0.3	16.36	np	5.74	0	10.62		
MW-27(A)	1/11/2004	1556	4.26	16.36	np	4.96	0	11.40		
MW-27(A)	1/14/2004	1625	1.19	16.36	np	4.95	0	11.41		
MW-27(A)	2/12/2004	1007	-2.53	16.36	np	4.72	0	11.64		
MW-27(A)	4/12/2004	1049	-2.84	16.36	np	6.05	0	10.31		
MW-27(A)	4/14/2004	1300	-1.18	16.36	np	6.15	0	10.21		
MW-27(A)	5/19/2004	1323	1.86	16.36	np	7.05	0	9.31		
MW-27(A)	7/19/2004	1048	-2.94	16.36	np	8.05	0	8.31		
MW-27(A)	7/22/2004	1100	-4.85	16.36	np	8.11	0	8.25		
MW-28(A)	10/13/2003	1130	1.5	16.13	np	9.05	0	7.08	15.36	
MW-28(A)	10/17/2003	1415	1.92	16.13	np	9.01	0	7.12		
MW-28(A)	11/12/2003	1007	-0.65	16.13	np	8.51	0	7.62		Slight Odor
MW-28(A)	12/16/2003	1254	-0.3	16.13	np	6.12	0	10.01		Sheen on Cap
MW-28(A)	1/11/2004	1550	4.26	16.13	np	5.31	0	10.82		
MW-28(A)	1/19/2004	1450	-1.95	16.13	np	5.25	0	10.88		
MW-28(A)	2/12/2004	1033	-3.59	16.13	np	4.91	0	11.22		
MW-28(A)	3/18/2004	1255	3.1	16.13	np	5.77	0	10.36		
MW-28(A)	4/12/2004	1110	-2.84	16.13	np	6.25	0	9.88		
MW-28(A)	4/14/2004	1612	-4.32	16.13	np	6.31	0	9.82		
MW-28(A)	5/19/2004	1346	2.56	16.13	np	7.12	0	9.01		

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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-28(A)	6/16/2004	1326	1.78	16.13	np	7.46	0	8.67		
MW-28(A)	7/19/2004	1029	-4.71	16.13	np	8.02	0	8.11		
MW-28(A)	7/23/2004	905	-3.1	16.13	np	8.1	0	8.03		
MW-28(A)	8/17/2004	1235	1.62	16.13	np	8.48	0	7.65		
MW-28(A)	9/16/2004	1227	2.05	16.13	np	8.46	0	7.67		
MW-29(A)	10/13/2003	1202	1.5	15.84	np	9.88	0	5.96	15.37	
MW-29(A)	10/21/2003	1550	-1.89	15.84	np	8.69	0	7.15		
MW-29(A)	11/12/2003	934	-0.65	15.84	np	8.33	0	7.51		Odor
MW-29(A)	12/16/2003	1309	-0.3	15.84	np	6.02	0	9.82		
MW-29(A)	1/11/2004	1552	4.26	15.84	np	5.21	0	10.63		
MW-29(A)	1/19/2004	1600	-3.67	15.84	np	5.13	0	10.71		
MW-29(A)	2/12/2004	1014	-2.53	15.84	np	4.8	0	11.04		
MW-29(A)	3/18/2004	1310	3.1	15.84	np	5.61	0	10.23		
MW-29(A)	4/12/2004	1054	-2.84	15.84	np	6.13	0	9.71		
MW-29(A)	4/16/2004	1222	3.28	15.84	np	6.25	0	9.59		
MW-29(A)	5/19/2004	1330	2.56	15.84	np	6.98	0	8.86		
MW-29(A)	6/16/2004	1307	1.78	15.84	np	7.3	0	8.54		
MW-29(A)	7/19/2004	1035	-2.94	15.84	np	7.87	0	7.97		
MW-29(A)	7/22/2004	1301	-2.04	15.84	np	7.91	0	7.93		
MW-29(A)	8/17/2004	1220	-0.05	15.84	np	8.31	0	7.53		Strong Odor
MW-29(A)	9/16/2004	1213	2.05	15.84	np	8.31	0	7.53		
MW-30(A)	10/13/2003	1000	-1.55	16.67	np	9.91	0	6.76	15.11	
MW-30(A)	10/16/2003	820	1.18	16.67	np	9.9	0	6.77		
MW-30(A)	11/12/2003	1221	1.93	16.67	np	9.42	0	7.25		Possible slight odor
MW-30(A)	12/16/2003	1201	-0.19	16.67	np	7.49	0	9.18		
MW-30(A)	1/11/2004	1452	4.58	16.67	np	6.72	0	9.95		
MW-30(A)	1/16/2004	1400	-3.33	16.67	np	6.65	0	10.02		
MW-30(A)	2/12/2004	1150	-3.92	16.67	np	6.34	0	10.33		
MW-30(A)	4/12/2004	1008	-1.26	16.67	np	7.49	0	9.18		
MW-30(A)	4/13/2004	1710	-2.75	16.67	np	7.52	0	9.15		
MW-30(A)	5/19/2004	1223	0.49	16.67	np	8.22	0	8.45		
MW-30(A)	6/16/2004	1156	1.01	16.67	np	8.55	0	8.12		
MW-30(A)	7/19/2004	933	-4.71	16.67	np	9.03	0	7.64		
MW-30(A)	7/20/2004	921	-5.4	16.67	np	9.04	0	7.63		
MW-30(A)	8/17/2004	1139	-0.05	16.67	np	9.45	0	7.22		
MW-30(A)	9/16/2004	1100	-0.04	16.67	NP	9.45	0	7.22		
MW-31(A)	10/13/2003	950	-1.55	16.23	np	9.81	0	6.42	15.31	
MW-31(A)	10/16/2003	1350	2.65	16.23	np	9.77	0	6.46		
MW-31(A)	11/12/2003	1210	1.93	16.23	np	9.48	0	6.75		Iron
MW-31(A)	12/16/2003	1207	-0.19	16.23	np	7.97	0	8.26		
MW-31(A)	1/11/2004	1456	4.58	16.23	np	7.33	0	8.90		

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MW-31(A)	1/12/2004	1615	4	16.23	np	7.36	0	8.87		
MW-31(A)	2/12/2004	1141	-3.92	16.23	np	7.12	0	9.11		Iron
MW-31(A)	3/18/2004	1152	4.37	16.23	np	7.64	0	8.59		
MW-31(A)	4/12/2004	958	-1.26	16.23	np	7.98	0	8.25		Iron
MW-31(A)	4/13/2004	1425	-4.26	16.23	np	8	0	8.23		
MW-31(A)	5/19/2004	1218	0.49	16.23	np	8.56	0	7.67		
MW-31(A)	6/16/2004	1204	1.01	16.23	np	8.8	0	7.43		
MW-31(A)	7/19/2004	938	-4.71	16.23	np	9.14	0	7.09		
MW-31(A)	7/20/2004	1015	-5.25	16.23	np	9.15	0	7.08		
MW-31(A)	8/17/2004	1144	-0.05	16.23	np	9.51	0	6.72		
MW-31(A)	9/16/2004	1053	-0.04	16.23	np	9.42	0	6.81		
MW-32(A)	10/13/2003	944	-1.55	16.51	np	10.43	0	6.08	15.36	
MW-32(A)	10/14/2003	1350	3.21	16.51	np	10.41	0	6.10		
MW-32(A)	11/12/2003	1316	3.06	16.51	np	10.07	0	6.44		
MW-32(A)	12/16/2003	1039	0.48	16.51	np	8.84	0	7.67		
MW-32(A)	1/11/2004	1419	4.01	16.51	np	8.21	0	8.30		
MW-32(A)	1/12/2004	1525	3.66	16.51	np	8.3	0	8.21		
MW-32(A)	2/12/2004	1241	-3.4	16.51	np	8.5	0	8.01		
MW-32(A)	3/18/2004	1056	4.6	16.51	np	8.63	0	7.88		
MW-32(A)	4/12/2004	955	-1.26	16.51	np	8.98	0	7.53		
MW-32(A)	4/13/2004	1340	-4.26	16.51	np	9.12	0	7.39		
MW-32(A)	5/19/2004	1212	0.49	16.51	np	9.56	0	6.95		
MW-32(A)	6/16/2004	1130	1.01	16.51	np	9.76	0	6.75		
MW-32(A)	7/19/2004	923	-5.63	16.51	np	9.98	0	6.53		
MW-32(A)	7/19/2004	1400	2	16.51	np	10	0	6.51		
MW-32(A)	8/17/2004	1103	-1.98	16.51	np	10.31	0	6.20		
MW-32(A)	9/16/2004	1022	-2.05	16.51	np	10.15	0	6.36		
MW-33(A)	10/13/2003	937	-1.55	16.14	np	10.87	0	5.27	17.31	
MW-33(A)	10/14/2003	838	-2.15	16.14	np	10.7	0	5.44		
MW-33(A)	11/12/2003	1328	3.06	16.14	np	10.33	0	5.81		
MW-33(A)	12/16/2003	1034	0.48	16.14	np	9.47	0	6.67		
MW-33(A)	1/11/2004	1416	4.01	16.14	np	8.92	0	7.22		
MW-33(A)	1/12/2004	1425	2.64	16.14	np	9.23	0	6.91		
MW-33(A)	4/12/2004	950	-1.26	16.14	np	9.88	0	6.26		
MW-33(A)	4/13/2004	715	2.92	16.14	np	9.92	0	6.22		
MW-33(A)	5/19/2004	1129	-1.19	16.14	np	10.58	0	5.56		
MW-33(A)	6/16/2004	1117	-0.35	16.14	np	10.68	0	5.46		
MW-33(A)	7/19/2004	919	-5.63	16.14	np	10.7	0	5.44		
MW-33(A)	7/19/2004	1310	0.67	16.14	np	10.76	0	5.38		
MW-33(A)	8/17/2004	1053	-1.98	16.14	np	11.02	0	5.12		
MW-33(A)	9/16/2004	1017	-2.05	16.14	np	10.75	0	5.39		

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MW-34(A)	10/13/2003	1003	-1.55	15.83	np	9.59	0	6.24	15.35	
MW-34(A)	10/15/2003	930	-0.99	15.83	np	9.57	0	6.26		
MW-34(A)	11/12/2003	1308	3.06	15.83	np	9.3	0	6.53		
MW-34(A)	12/16/2003	1054	0.48	15.83	np	7.91	0	7.92		
MW-34(A)	1/11/2004	1429	4.01	15.83	np	7.28	0	8.55		
MW-34(A)	1/13/2004	830	-0.07	15.83	np	7.31	0	8.52		
MW-34(A)	2/12/2004	1236	-3.4	15.83	np	7.21	0	8.62		
MW-34(A)	3/18/2004	1104	4.6	15.83	np	7.64	0	8.19		
MW-34(A)	4/12/2004	1000	-1.26	15.83	np	7.96	0	7.87		
MW-34(A)	4/14/2004	720	2.14	15.83	np	8.04	0	7.79		
MW-34(A)	5/19/2004	1216	0.49	15.83	np	8.54	0	7.29		
MW-34(A)	6/16/2004	1135	1.01	15.83	np	8.76	0	7.07		
MW-34(A)	7/19/2004	926	-5.63	15.83	np	9.06	0	6.77		
MW-34(A)	7/20/2004	710	-2.99	15.83	np	9.02	0	6.81		
MW-34(A)	8/17/2004	1106	-1.98	15.83	np	9.42	0	6.41		
MW-34(A)	9/16/2004	1112	-0.04	15.83	np	9.66	0	6.17		
MW-35(A)	10/13/2003	1007	-1.55	16.50	np	9.9	0	6.60	15.32	
MW-35(A)	10/16/2003	1115	0.27	16.50	np	9.86	0	6.64		
MW-35(A)	11/12/2003	1228	1.93	16.50	np	9.47	0	7.03		
MW-35(A)	12/16/2003	1154	-0.19	16.50	np	7.7	0	8.80		
MW-35(A)	1/11/2004	1449	4.58	16.50	np	6.95	0	9.55		
MW-35(A)	1/16/2004	1230	-2.45	16.50	np	6.87	0	9.63		
MW-35(A)	2/12/2004	1236	-3.4	16.50	np	6.53	0	9.97		
MW-35(A)	3/18/2004	1143	4.37	16.50	np	7.22	0	9.28		
MW-35(A)	4/12/2004	1011	-1.26	16.50	np	7.63	0	8.87		
MW-35(A)	4/13/2004	1550	-4	16.50	np	7.65	0	8.85		
MW-35(A)	5/19/2004	1227	0.49	16.50	np	8.33	0	8.17		
MW-35(A)	6/16/2004	1148	1.01	16.50	np	8.63	0	7.87		
MW-35(A)	7/19/2004	936	-4.71	16.50	np	9.08	0	7.42		
MW-35(A)	7/20/2004	832	-5.4	16.50	np	9.08	0	7.42		
MW-35(A)	8/17/2004	1134	-0.05	16.50	np	9.51	0	6.99		
MW-35(A)	9/16/2004	1104	-0.04	16.50	np	9.44	0	7.06		
MW-36(A)	10/13/2003	1124	-0.1	16.14	np	8.96	0	7.18	15.36	
MW-36(A)	10/21/2003	1130	2.25	16.14	np	8.78	0	7.36		
MW-36(A)	11/12/2003	926	-1.42	16.14	np	8.41	0	7.73		
MW-36(A)	12/16/2003	1322	-0.3	16.14	np	5.74	0	10.40		
MW-36(A)	1/11/2004	1605	4.26	16.14	np	5.67	0	10.47		
MW-36(A)	1/14/2004	1500	0.02	16.14	np	4.63	0	11.51		
MW-36(A)	2/12/2004	1002	-2.53	16.14	np	4.19	0	11.95		
MW-36(A)	3/18/2004	1328	3.1	16.14	np	4.83	0	11.31		
MW-36(A)	4/12/2004	1043	-2.84	16.14	np	5.48	0	10.66		
MW-36(A)	4/14/2004	1230	-1.18	16.14	np	5.55	0	10.59		

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MW-36(A)	5/19/2004	1320	1.86	16.14	np	6.48	0	9.66		
MW-36(A)	6/16/2004	1259	1.78	16.14	np	6.87	0	9.27		
MW-36(A)	7/19/2004	1046	-2.94	16.14	np	7.54	0	8.60		
MW-36(A)	7/22/2004	1011	-5.09	16.14	np	7.6	0	8.54		
MW-36(A)	8/17/2004	1215	-0.05	16.14	np	8.33	0	7.81		
MW-36(A)	9/16/2004	1205	2.05	16.14	np	8.34	0	7.80		
MW-37(A)	10/13/2003	1011	-1.55	18.22	np	11.31	0	6.91	15.41	
MW-37(A)	10/17/2003	810	1.8	18.22	np	11.23	0	6.99		
MW-37(A)	11/12/2003	1242	3.06	18.22	np	10.83	0	7.39		
MW-37(A)	12/16/2003	1146	-0.19	18.22	8.39	8.4	0.01	9.83		
MW-37(A)	1/11/2004	1447	4.58	18.22	7.32	7.33	0.01	10.90		
MW-37(A)	2/12/2004	1159	-3.92	18.22	np	6.7	0	11.52		Strong Odor
MW-37(A)	3/18/2004	1132	4.37	18.22	Trace	7.57	Trace	10.65		
MW-37(A)	4/12/2004	1015	-1.26	18.22	8.05	8.08	0.03	10.17		
MW-37(A)	5/19/2004	1429	2.56	18.22	9.02	9.07	0.05	9.19		
MW-37(A)	6/16/2004	1142	1.01	18.22	Trace	9.42	Trace	8.80		
MW-37(A)	7/19/2004	1108	-2.94	18.22	10.12	10.13	0.01	8.09		
MW-37(A)	8/17/2004	1130	-0.05	18.22	8.04	8.05	0.01	10.17		
MW-37(A)	9/16/2004	1116	-0.04	18.22	10.77	10.81	0.04	7.41		
MW-38(A)	10/13/2003	1130	1.5	17.20	np	8.95	0	8.25	15.38	
MW-38(A)	10/21/2003	1040	3.15	17.20	np	8.53	0	8.67		
MW-38(A)	11/12/2003	919	-1.42	17.20	np	8.33	0	8.87		
MW-38(A)	12/16/2003	1314	-0.3	17.20	np	5.21	0	11.99		
MW-38(A)	1/11/2004	1609	4.26	17.20	np	4.26	0	12.94		
MW-38(A)	1/14/2004	810	2.72	17.20	np	4.4	0	12.80		
MW-38(A)	2/12/2004	954	-2.53	17.20	np	3.72	0	13.48		
MW-38(A)	3/18/2004	1322	3.1	17.20	np	4.74	0	12.46		
MW-38(A)	4/12/2004	1037	-2.84	17.20	np	5.45	0	11.75		
MW-38(A)	4/14/2004	1045	2.07	17.20	np	5.48	0	11.72		
MW-38(A)	5/19/2004	1315	1.86	17.20	np	6.48	0	10.72		
MW-38(A)	6/16/2004	1254	1.78	17.20	np	6.83	0	10.37		
MW-38(A)	7/19/2004	1052	-2.94	17.20	np	7.67	0	9.53		
MW-38(A)	7/22/2004	910	-4.31	17.20	np	7.72	0	9.48		
MW-38(A)	8/17/2004	1209	-0.05	17.20	np	8.31	0	8.89		
MW-38(A)	9/16/2004	1200	2.05	17.20	np	8.1	0	9.10		
MW-39(A)	10/13/2003	1025	-1.55	17.29	np	9.3	0	7.99	15.41	
MW-39(A)	10/16/2003	1540	3.64	17.29	np	9.22	0	8.07		
MW-39(A)	12/16/2003	1104	0.48	17.29	np	5.79	0	11.50		
MW-39(A)	1/11/2004	1435	4.01	17.29	np	4.71	0	12.58		
MW-39(A)	1/16/2004	925	3.77	17.29	np	4.65	0	12.64		
MW-39(A)	2/12/2004	1225	-3.92	17.29	np	4.21	0	13.08		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-39(A)	3/18/2004	1114	4.6	17.29	np	5.12	0	12.17		
MW-39(A)	4/12/2004	1032	-2.84	17.29	np	5.8	0	11.49		
MW-39(A)	4/14/2004	920	3.58	17.29	np	5.89	0	11.40		
MW-39(A)	5/19/2004	1531	1.47	17.29	np	6.85	0	10.44		
MW-39(A)	6/16/2004	1433	1.13	17.29	np	7.24	0	10.05		
MW-39(A)	7/19/2004	1100	-2.94	17.29	np	8	0	9.29		
MW-39(A)	7/21/2004	1333	0.54	17.29	np	8.05	0	9.24		
MW-39(A)	8/17/2004	1116	-1.98	17.29	np	8.6	0	8.69		
MW-39(A)	9/16/2004	1135	2.05	17.29	np	8.51	0	8.78		
MW-40(A)	10/13/2003	1025	-1.55	16.17	np	9.56	0	6.61	15.42	
MW-40(A)	10/17/2003	935	0.7	16.17	np	9.51	0	6.66		
MW-40(A)	11/12/2003	1235	3.06	16.17	9.18	9.27	0.09	6.98		pumped out
MW-40(A)	12/16/2003	1138	-0.19	16.17	np	7.45	0	8.72		
MW-40(A)	1/11/2004	1444	4.58	16.17	np	6.68	0	9.49		
MW-40(A)	1/20/2004	800	1.34	16.17	np	6.64	0	9.53		
MW-40(A)	2/12/2004	1211	-3.92	16.17	np	6.24	0	9.93		Odor
MW-40(A)	3/18/2004	1125	4.6	16.17	np	6.96	0	9.21		
MW-40(A)	4/12/2004	1018	-1.26	16.17	np	7.41	0	8.76		
MW-40(A)	4/16/2004	1420	0.37	16.17	np	7.48	0	8.69		Sheen
MW-40(A)	5/19/2004	1506	2.39	16.17	8.02	8.06	0.04	8.14		
MW-40(A)	6/16/2004	1447	1.13	16.17	8.39	8.41	0.02	7.78		
MW-40(A)	7/19/2004	1106	-2.94	16.17	8.88	8.95	0.07	7.28		
MW-40(A)	8/17/2004	1126	-1.98	16.17	9.3	9.37	0.07	6.86		
MW-40(A)	9/16/2004	1124	-0.04	16.17	np	9.14	0	7.03		
MW-41(A)	10/13/2003	907	-2.52	15.67	np	9.23	0	6.44	15.35	
MW-41(A)	10/14/2003	1540	2.91	15.67	np	9.25	0	6.42		sheen
MW-41(A)	11/12/2003	1417	3.65	15.67	np	8.91	0	6.76		
MW-41(A)	12/16/2003	937	1.46	15.67	np	7.39	0	8.28		Odor
MW-41(A)	1/11/2004	1342	4.01	15.67	np	6.72	0	8.95		odor
MW-41(A)	1/16/2004	1125	0.54	15.67	np	7.12	0	8.55		Product globules in bailer
MW-41(A)	2/12/2004	1400	-2.19	15.67	6.41	6.71	0.3	9.22		Odor
MW-41(A)	3/18/2004	1004	3.9	15.67	6.95	7.92	0.97	8.59		
MW-41(A)	4/12/2004	922	0.43	15.67	7.29	7.91	0.62	8.30		
MW-41(A)	5/19/2004	1005	-2.92	15.67	8	8.25	0.25	7.64		
MW-41(A)	7/19/2004	841	-4.71	15.67	8.64	8.66	0.02	7.03		
MW-41(A)	8/17/2004	958	-3.83	15.67	Trace	9.04	Trace	6.63		
MW-41(A)	9/16/2004	917	-3.7	15.67	np	8.87	0	6.80		
MW-42(A)	10/13/2003	859	-2.52	15.91	np	9.39	0	6.52	15.37	
MW-42(A)	10/15/2003	1100	-0.18	15.91	np	9.38	0	6.53		sheen
MW-42(A)	11/12/2003	1408	3.65	15.91	np	9.06	0	6.85		
MW-42(A)	12/16/2003	925	2.67	15.91	np	7.52	0	8.39		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-42(A)	1/11/2004	1340	4.01	15.91	6.83	6.9	0.07	9.07		
MW-42(A)	2/12/2004	1352	-2.19	15.91	6.41	7.47	1.06	9.36		
MW-42(A)	3/18/2004	957	3.9	15.91	6.91	8.6	1.69	8.78		
MW-42(A)	4/12/2004	926	0.43	15.91	7.29	8.89	1.6	8.41		
MW-42(A)	5/19/2004	1029	-2.92	15.91	8	9.5	1.5	7.72		
MW-42(A)	6/16/2004	1007	-1.94	15.91	8.35	8.87	0.52	7.49		
MW-42(A)	7/19/2004	844	-5.63	15.91	8.78	9.15	0.37	7.08		
MW-42(A)	8/17/2004	953	-3.83	15.91	9.2	9.57	0.37	6.66		
MW-42(A)	9/16/2004	911	-3.7	15.91	8.89	8.91	0.02	7.02		
MW-43(A)	10/13/2003	857	-2.52	15.94	np	9.07	0	6.87	15.35	
MW-43(A)	10/13/2003	1645	0.78	15.94	np	9.01	0	6.93		
MW-43(A)	11/12/2003	1403	3.65	15.94	np	8.74	0	7.20		
MW-43(A)	12/16/2003	930	1.46	15.94	np	6.97	0	8.97		
MW-43(A)	1/11/2004	1337	4.01	15.94	np	6.24	0	9.70		
MW-43(A)	1/12/2004	1053	-1.03	15.94	np	6.33	0	9.61		
MW-43(A)	2/12/2004	1347	-2.19	15.94	np	6	0	9.94		
MW-43(A)	3/18/2004	953	3.9	15.94	np	6.62	0	9.32		
MW-43(A)	4/12/2004	928	0.43	15.94	np	7.05	0	8.89		
MW-43(A)	4/13/2004	1230	-3.33	15.94	np	7.1	0	8.84		
MW-43(A)	5/19/2004	1050	-1.19	15.94	np	7.81	0	8.13		
MW-43(A)	6/16/2004	1002	-1.94	15.94	np	8.02	0	7.92		
MW-43(A)	7/19/2004	850	-5.63	15.94	np	8.52	0	7.42		
MW-43(A)	7/21/2004	1133	-2.95	15.94	np	8.56	0	7.38		
MW-43(A)	8/17/2004	950	-3.83	15.94	np	8.97	0	6.97		
MW-43(A)	9/16/2004	908	-3.7	15.94	np	8.62	0	7.32		
MW-44(A)	10/13/2003	1010	-1.55	15.31	np	8.22	0	7.09	15.41	
MW-44(A)	10/17/2003	1135	0.72	15.31	np	8.17	0	7.14		
MW-44(A)	11/12/2003	1302	3.06	15.31	np	7.95	0	7.36		
MW-44(A)	12/16/2003	1132	-0.19	15.31	5.88	6.02	0.14	9.41		
MW-44(A)	1/11/2004	1442	4.58	15.31	5.1	5.24	0.14	10.19		
MW-44(A)	2/12/2004	1217	-3.92	15.31	4.15	4.34	0.19	11.13		Odor
MW-44(A)	3/18/2004	1119	4.6	15.31	4.82	4.99	0.17	10.46		
MW-44(A)	4/12/2004	1020	-1.26	15.31	8.29	9.04	0.75			
MW-44(A)	5/19/2004	1509	2.39	15.31	6.14	6.91	0.77	9.07		
MW-44(A)	6/16/2004	1439	1.13	15.31	6.37	6.75	0.38	8.89		
MW-44(A)	7/19/2004	1104	-2.94	15.31	7.12	7.57	0.45	8.13		
MW-44(A)	8/17/2004	1121	-1.98	15.31	7.77	8.09	0.32	7.50		
MW-44(A)	9/16/2004	1129	-0.04	15.31	6.68	6.8	0.12	8.61		
MW-45(A)	10/13/2003	1018	-1.55	17.32	np	9.92	0	7.40	17.16	
MW-45(A)	10/16/2003	1730	2.55	17.32	np	9.81	0	7.51		
MW-45(A)	11/12/2003	1256	3.06	17.32	np	9.13	0	8.19		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-45(A)	12/16/2003	1114	0.48	17.32	np	6.41	0	10.91		
MW-45(A)	1/11/2004	1440	4.58	17.32	np	5.39	0	11.93		
MW-45(A)	1/16/2004	1110	0.54	17.32	np	5.27	0	12.05		
MW-45(A)	2/12/2004	1229	-3.92	17.32	np	4.44	0	12.88		
MW-45(A)	3/18/2004	1109	4.6	17.32	np	5.69	0	11.63		
MW-45(A)	4/12/2004	1029	-1.26	17.32	np	6.35	0	10.97		
MW-45(A)	4/14/2004	820	3.11	17.32	np	6.42	0	10.90		
MW-45(A)	5/19/2004	1532	1.47	17.32	np	7.41	0	9.91		
MW-45(A)	6/16/2004	1425	1.8	17.32	np	7.71	0	9.61		
MW-45(A)	7/19/2004	1057	-2.94	17.32	np	8.4	0	8.92		
MW-45(A)	7/21/2004	1444	1.91	17.32	np	8.45	0	8.87		
MW-45(A)	8/17/2004	1113	-1.98	17.32	np	8.97	0	8.35		
MW-45(A)	9/16/2004	1139	2.05	17.32	np	8.8	0	8.52		
MW-46(A)	10/13/2003	919	-2.52	16.00	np	7.46	0	8.54	15.34	
MW-46(A)	10/14/2003	1015	-1.65	16.00	np	7.38	0	8.62		
MW-46(A)	11/12/2003	857	-1.42	16.00	np	6.64	0	9.36		
MW-46(A)	12/16/2003	837	2.67	16.00	np	3.2	0	12.80		
MW-46(A)	1/11/2003	1318	2.89	16.00	np	2.47	0	13.53		
MW-46(A)	1/14/2004	1020	-0.22	16.00	np	2.9	0	13.10		
MW-46(A)	2/12/2004	901	-1.02	16.00	np	2.26	0	13.74		
MW-46(A)	3/18/2004	1040	4.6	16.00	np	3.52	0	12.48		
MW-46(A)	4/12/2004	850	0.43	16.00	np	4.2	0	11.80		
MW-46(A)	4/12/2004	1555	-2.94	16.00	np	4.21	0	11.79		
MW-46(A)	5/19/2004	1145	0.49	16.00	np	5.35	0	10.65		
MW-46(A)	6/16/2004	912	-3.55	16.00	np	5.58	0	10.42		
MW-46(A)	7/19/2004	818	-5.2	16.00	np	6.41	0	9.59		
MW-46(A)	7/21/2004	1005	-5.45	16.00	np	6.45	0	9.55		
MW-46(A)	8/17/2004	942	-3.83	16.00	np	7	0	9.00		
MW-46(A)	9/16/2004	843	-3.7	16.00	np	6.55	0	9.45		
MW-47(A)	10/13/2003	907	-2.52	16.39	np	8.42	0	7.97	15.37	
MW-47(A)	10/13/2003	1745	-1.15	16.39	np	8.39	0	8.00		
MW-47(A)	11/12/2003	911	-1.42	16.39	np	7.65	0	8.74		
MW-47(A)	12/16/2003	851	2.67	16.39	np	4.81	0	11.58		
MW-47(A)	1/11/2004	1328	2.89	16.39	np	4.03	0	12.36		
MW-47(A)	1/14/2004	1230	-2.08	16.39	np	4.35	0	12.04		
MW-47(A)	2/12/2004	923	-1.02	16.39	np	3.82	0	12.57		
MW-47(A)	3/18/2004	1050	4.6	16.39	np	5.43	0	10.96		
MW-47(A)	4/12/2004	846	0.43	16.39	np	5.42	0	10.97		
MW-47(A)	4/12/2004	1440	-4.26	16.39	np	5.42	0	10.97		
MW-47(A)	5/19/2004	1152	0.49	16.29	np	6.41	0	9.88		
MW-47(A)	6/16/2004	929	-3.55	16.29	np	6.68	0	9.61		
MW-47(A)	7/19/2004	822	-5.2	16.29	np	7.36	0	8.93		

TABLE 2
CHEMICALS DETECTED IN GROUND WATER
3rd QUARTER 2004

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Chemical	Total Number of Analyses	Number of Analyses with a Detection	Frequency of Detection (Percent)	Maximum Value (ug/L)
Diesel Range Organics	36	18	50	3960
Gasoline Range Organics	36	17	47	39,800.0
Heavy Oil Range Organics	36	5	14	951.00
1,2,4-Trimethylbenzene	36	17	47	3300
1,3,5-Trimethylbenzene	36	12	33	665
Benzene	36	19	53	1020
Ethylbenzene	36	22	61	2070
Isopropylbenzene	36	19	53	137
n-Propylbenzene	36	22	61	355
Toluene	36	18	50	5520
Xylenes	36	19	53	8,130
Acenaphthene	36	12	33	1.41
Anthracene	36	1	3	0.156
Benzo(a)anthracene	36	4	11	0.0262
Benzo(a)pyrene	36	2	6	0.0177
Benzo(b)fluoranthene	36	4	11	0.0267
Chrysene	36	5	14	0.0412
Fluorene	36	9	25	1.83
Naphthalene	36	25	69	1,360
Phenanthrene	36	6	17	1.55
Chromium	3	3	100	28
Lead	36	33	92	58.7

TABLE 3
DATA QUALIFIER DEFINITIONS

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

J+ The analyte was positively identified; the associated numerical value appears to be bias high.

J- The analyte was positively identified; the associated numerical value appears to be bias low.

UJ- The analyte was not detected above the reporting limit. However, the reporting limit appears to be bias low and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

C Common laboratory contaminant

B The analyte was also identified in a field or laboratory blank associated with this sample or sample group.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 4

PETROLEUM HYDROCARBONS IN GROUND WATER

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Diesel Range Organics ug/L	Gasoline Range Organics ug/L	Residual Range Organics ug/L
MW-1(F)	MW-1-082302	8/23/2002	250 U	143	500 U
MW-1(F)	MW-1(F)	10/22/2003	250 U	94	500 U
MW-1(F)	MW-1 (F)	1/15/2004	171 J	408	500 U
MW-1(F)	MW-1(F)	4/15/2004	163 J	141 JB	500 U
MW-1(F)	MW-1 (F)	7/20/2004	250 U B	197	500 U
MW-2(M)	MW-2(M)	6/19/2003	2900	9440	500 U
MW-2(M)	MW-2 (M)	10/15/2003	3260	4510	1670
MW-2(M)	MW-2 (M)	1/12/2004	1340	628	500 U
MW-2(M)	MW-2(M)	4/14/2004	4170	6470	295 J
MW-2(M)	MW-2 (M)	7/22/2004	3580	5010	294 J
MW-6(M)	MW-6(M)	6/19/2003	250 U	457	500 U
MW-6(M)	MW-6(M)	10/22/2003	179 J	80 U	500 U
MW-6(M)	MW-6 (M)	1/12/2004	250 U	80 U	500 U
MW-6(M)	MW-6 (M)	4/13/2004	250 U	80 U B	500 U
MW-6(M)	MW-6 (M)	7/19/2004	250 U B	80 U	500 U
MW-7(M)	BM-7(M)	6/19/2003	250 U	80 U	500 U
MW-7(M)	MW-7(M)	6/19/2003	250 U	80 U	500 U
MW-7(M)	MW-7(M)	10/13/2003	307	80 U	500 U
MW-7(M)	MW-7 (M)	1/12/2004	756	80 U	500 U
MW-7(M)	MW-7 (M)	4/12/2004	401	14.9	500 U
MW-7(M)	MW-7 (M)	7/19/2004	610	80 U	196 J
MW-10(M)	MW-10(M)	6/19/2003	1430	2400	500 U
MW-10(M)	MW-10 (M)	10/15/2003	1790	3360	302 J
MW-10(M)	MW-10 (M)	1/13/2004	1590	2570	500 U
MW-10(M)	MW-10 (M)	4/13/2004	2670	2440	379 J
MW-10(M)	MW-10 (M)	7/19/2004	2260	2240	410 J
MW-11(M)	MW-11(M)	6/19/2003	250 U	179	500 U
MW-11(M)	MW-11 (M)	10/15/2003	250 U	652	500 U
MW-11(M)	MW-11 (M)	1/13/2004	500	219	500 U
MW-11(M)	MW-11 (M)	4/13/2004	222 J	106	500 U
MW-11(M)	MW-11 (M)	7/21/2004	250 U	80 U	500 U
MW-12(A)	MW-12(A)	10/22/2003	250 U	60.1 J	500 U
MW-12(A)	MW-12 (A)	1/15/2004	250 U	80 U	500 U
MW-12(A)	MW-12(A)	4/16/2004	250 U	80 U B	500 U
MW-12(A)	MW-12 (A)	7/22/2004	250 U	80 U	500 U

TABLE 4

PETROLEUM HYDROCARBONS IN GROUND WATER

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Diesel Range Organics ug/L	Gasoline Range Organics ug/L	Residual Range Organics ug/L
MW-13(A)	MW-13(A)	10/22/2003	250 U	10100	500 U
MW-13(A)	MW-13 (A)	1/15/2004	1310	15300	658
MW-13(A)	MW-13(A)	4/16/2004	1930	13400	500 U
MW-13(A)	MW-13 (A)	7/22/2004	1040	9140	500 U
MW-14(A)	MW-14(A)	10/21/2003	250 U	71.8 J	500 U
MW-14(A)	MW-14 (A)	1/15/2004	250 U	80 U	500 U
MW-14(A)	MW-14(A)	4/16/2004	250 U	80 U B	500 U
MW-14(A)	MW-14 (A)	7/23/2004	250 U	80 U	500 U
MW-15(A)	MW-15(A)	10/20/2003	250 U	2550	500 U
MW-16(A)	MW-16(A)	10/20/2003	250 U	457	425 J
MW-16(A)	MW-16(A)	1/19/2004	250 U	141	500 U
MW-16(A)	MW-16(A)	4/15/2004	859	315	500 U
MW-16(A)	MW-16 (A)	7/22/2004	551	458	500 U
MW-17 (A)	BM-17 (A)	7/22/2004	110 J		500 U
MW-17(A)	MW-17 (A)	10/17/2003	250 U	740	500 U
MW-17(A)	BM-17(A)	1/19/2004	250 U	1050	500 U
MW-17(A)	MW-17(A)	1/19/2004	250 U	778	500 U
MW-17(A)	MW-17(A)	4/15/2004	490	516	500 U
MW-17(A)	BM-17 (A)	7/22/2004		131	
MW-17(A)	MW-17 (A)	7/22/2004	137 J	124	500 U
MW-18(A)	MW-18(A)	10/21/2003	936	1280	2180
MW-18(A)	MW-18(A)	1/19/2004	807	830	500 U
MW-18(A)	MW-18(A)	4/15/2004	241 J	148 JB	500 U
MW-18(A)	MW-18 (A)	7/21/2004	229 J	266	500 U
MW-19(A)	BM-19(A)	10/20/2003	176 J	80 U	500 U
MW-19(A)	MW-19(A)	10/20/2003	180 J	80 U	500 U
MW-19(A)	MW-19 (A)	1/13/2004	250 U	80 U	500 U
MW-19(A)	MW-19(A)	4/15/2004	250 U	80 U B	500 U
MW-19(A)	BM-19 (A)	7/20/2004	250 U B	80 U	500 U
MW-19(A)	MW-19 (A)	7/20/2004	250 U B	80 U	500 U
MW-20(A)	MW-20(A)	10/20/2003	1370	1400	710
MW-20(A)	MW-20 (A)	1/13/2004	927	979	918
MW-20(A)	MW-20(A)	4/15/2004	918	263	640
MW-20(A)	MW-20 (A)	7/20/2004	1900	821	951

TABLE 4

PETROLEUM HYDROCARBONS IN GROUND WATER

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Diesel Range Organics ug/L	Gasoline Range Organics ug/L	Residual Range Organics ug/L
MW-21(A)	MW-21(A)	10/20/2003	1460	753	500 U
MW-21(A)	BM-21 (A)	1/13/2004	644	186	500 U
MW-21(A)	MW-21 (A)	1/13/2004	799	309	500 U
MW-21(A)	MW-21(A)	4/16/2004	4860	243	734
MW-21(A)	MW-21 (A)	7/20/2004	1670	847	500 U
MW-22(A)	MW-22 (A)	10/16/2003	250 U	140	500 U
MW-22(A)	MW-22(A)	1/19/2004	250 U	80 U	500 U
MW-22(A)	MW-22(A)	4/15/2004	250 U	80 U B	500 U
MW-22(A)	MW-22 (A)	7/20/2004	250 U B	80 U	500 U
MW-23(A)	MW-23(A)	10/20/2003	250 U	80 U	500 U
MW-23(A)	MW-23 (A)	1/15/2004	250 U	61.7 J	500 U
MW-23(A)	BM-23(A)	4/15/2004	250 U	198	500 U
MW-23(A)	MW-23(A)	4/15/2004	194 J	207	500 U
MW-23(A)	MW-23 (A)	7/20/2004	250 U B	80 U	500 U
MW-24(A)	MW-24(A)	10/21/2003	250 U	376	500 U
MW-24(A)	MW-24 (A)	1/15/2004	250 U	4050	500 U
MW-24(A)	MW-24(A)	4/14/2004	735	813	500 U
MW-24(A)	MW-24 (A)	7/22/2004	359	915	500 U
MW-26(A)	MW-26 (A)	10/17/2003	250 U	8050	500 U
MW-26(A)	MW-26 (A)	1/15/2004	250 U	24800	500 U
MW-26(A)	MW-26(A)	4/14/2004	3460	18500	500 U
MW-26(A)	MW-26 (A)	7/22/2004	3960	26000	500 U
MW-27(A)	MW-27(A)	10/21/2003	250 U	99	500 U
MW-27(A)	MW-27 (A)	1/14/2004	250 U	173	500 U
MW-27(A)	MW-27 (A)	4/14/2004	250 U	80 U B	500 U
MW-27(A)	MW-27 (A)	7/22/2004	250 U	80 U	500 U
MW-28(A)	MW-28 (A)	10/17/2003	2130	2060	500 U
MW-28(A)	MW-28(A)	1/19/2004	250 U	13800	500 U
MW-28(A)	MW-28(A)	4/14/2004	851	8910	500 U
MW-28(A)	MW-28 (A)	7/23/2004	1390	2240	678
MW-29(A)	MW-29(A)	10/21/2003	4120	60200	500 U
MW-29(A)	MW-29(A)	1/19/2004	250 U	62000	310 J
MW-29(A)	MW-29(A)	4/16/2004	3660	34200	500 U

TABLE 4

PETROLEUM HYDROCARBONS IN GROUND WATER

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Diesel Range Organics ug/L	Gasoline Range Organics ug/L	Residual Range Organics ug/L
MW-29(A)	MW-29 (A)	7/22/2004	3170	39800	500 U
MW-30(A)	MW-30 (A)	10/16/2003	250 U	14700	500 U
MW-30(A)	MW-30 (A)	1/16/2004	250 U	9570	500 U
MW-30(A)	MW-30 (A)	4/13/2004	250 U	8090	500 U
MW-30(A)	MW-30 (A)	7/20/2004	3730	12600	500 U
MW-31(A)	BM-31 (A)	10/16/2003	250 U	7390	500 U
MW-31(A)	MW-31 (A)	10/16/2003	250 U	7200	500 U
MW-31(A)	MW-31 (A)	1/12/2004	1100	5220	500 U
MW-31(A)	BM-31 (A)	4/13/2004	1370	4770	500 U
MW-31(A)	MW-31 (A)	4/13/2004	1420	3230	500 U
MW-31(A)	MW-31 (A)	7/20/2004	2210	6140	500 U
MW-32(A)	MW-32(A)	10/14/2003	250 U	80 U	500 U
MW-32(A)	MW-32 (A)	1/12/2004	250 U	80 U	500 U
MW-32(A)	MW-32 (A)	4/13/2004	250 U	80 U	500 U
MW-32(A)	MW-32 (A)	7/19/2004	250 U	80 U	500 U
MW-33(A)	MW-33(A)	10/14/2003	250 U	70 J	500 U
MW-33(A)	MW-33 (A)	1/12/2004	250 U	276	500 U
MW-33(A)	MW-33 (A)	4/13/2004	250 U	434	500 U
MW-33(A)	MW-33 (A)	7/19/2004	511 JB	116	198 J
MW-34(A)	MW-34(A)	10/14/2003	250 U	80 U	500 U
MW-34(A)	MW-34 (A)	1/13/2004	250 U	80 U	500 U
MW-34(A)	MW-34 (A)	4/14/2004	250 U	80 U B	500 U
MW-34(A)	MW-34 (A)	7/20/2004	250 U	80 U	500 U
MW-35(A)	MW-35 (A)	10/16/2003	250 U	80 U	500 U
MW-35(A)	MW-35 (A)	1/16/2004	250 U	80 U	500 U
MW-35(A)	MW-35 (A)	4/13/2004	250 U	80 U B	500 U
MW-35(A)	MW-35 (A)	7/20/2004	250 U B	80 U	500 U
MW-36(A)	MW-36(A)	10/21/2003	250 U	80 U	500 U
MW-36(A)	MW-36 (A)	1/14/2004	250 U	80 U	500 U
MW-36(A)	MW-36 (A)	4/14/2004	250 U	80 U B	500 U
MW-36(A)	MW-36 (A)	7/22/2004	250 U	80 U	500 U
MW-37(A)	MW-37 (A)	10/17/2003	174 J	1350	500 U

TABLE 4

PETROLEUM HYDROCARBONS IN GROUND WATER

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Diesel Range Organics ug/L	Gasoline Range Organics ug/L	Residual Range Organics ug/L
MW-38(A)	MW-38(A)	10/21/2003	250 U	80 U	500 U
MW-38(A)	MW-38 (A)	1/14/2004	250 U	80 U	500 U
MW-38(A)	MW-38 (A)	4/14/2004	250 U	80 U B	500 U
MW-38(A)	MW-38 (A)	7/22/2004	250 U	80 U	500 U
MW-39(A)	MW-39 (A)	10/16/2003	1250	518	500 U
MW-39(A)	MW-39 (A)	1/16/2004	806	291	500 U
MW-39(A)	MW-39 (A)	4/14/2004	1170	381	500 U
MW-39(A)	MW-39 (A)	7/21/2004	883	421	500 U
MW-40(A)	MW-40 (A)	10/17/2003	3660	8270	500 U
MW-40(A)	MW-40(A)	1/20/2004	9380	31400	598
MW-40(A)	MW-40(A)	4/16/2004	8360	41600	689
MW-41(A)	MW-41(A)	10/14/2003	4700	7700	319 J
MW-42(A)	MW-42 (A)	10/15/2003	5740	18900	2500 U
MW-43(A)	MW-43(A)	10/13/2003	1000	80 U	500 U
MW-43(A)	MW-43 (A)	1/12/2004	633	80 U	500 U
MW-43(A)	MW-43 (A)	4/13/2004	1050	80 U B	500 U
MW-43(A)	MW-43 (A)	7/21/2004	1980	80 U	191 J
MW-44(A)	MW-44 (A)	10/17/2003	5780	67700	500 U
MW-45(A)	MW-45 (A)	10/16/2003	250 U	80 U	500 U
MW-45(A)	MW-45 (A)	1/16/2004	250 U	80 U	500 U
MW-45(A)	MW-45 (A)	4/14/2004	250 U	80 U B	500 U
MW-45(A)	MW-45 (A)	7/21/2004	250 U	80 U	500 U
MW-46(A)	MW-46(A)	10/14/2003	250 U	80 U	500 U
MW-46(A)	MW-46(A)	1/14/2004	250 U	80 U	500 U
MW-46(A)	MW-46 (A)	4/12/2004	179 J	28.3	500 U
MW-46(A)	MW-46 (A)	7/21/2004	250 U B	80 U	500 U
MW-47(A)	MW-47(A)	10/13/2003	250 U	80 U	500 U
MW-47(A)	MW-47 (A)	1/14/2004	250 U	54.3	500 U
MW-47(A)	MW-47 (A)	4/12/2004	207 J	6.85	500 U
MW-47(A)	MW-47 (A)	7/21/2004	250 U B	80 U	500 U
MW-48(A)	MW-48(A)	10/14/2003	250 U	80 U	500 U

TABLE 4**PETROLEUM HYDROCARBONS IN GROUND WATER**

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Diesel Range Organics	Gasoline Range Organics	Residual Range Organics
			ug/L	ug/L	ug/L
MW-48(A)	MW-48 (A)	1/14/2004	250 U	80 U	500 U
MW-48(A)	MW-48 (A)	4/12/2004	250 U	22.7	500 U
MW-48(A)	MW-48 (A)	7/21/2004	250 U B	80 U	500 U
R-1(M)	R-1(M)	10/22/2003	250 U	80 U	0.5 U

TABLE 5

RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-1(F)	MW-1-082302	8/23/2002	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-1(F)	MW-1-082302	8/23/2002					0.5 U
MW-1(F)	MW-1(F)	10/22/2003	1.64	0.5 U	0.5 U	0.42 J	0.41 J
MW-1(F)	MW-1 (F)	1/15/2004	0.09 J	0.5 U	0.5 U	0.5 U	2.79
MW-1(F)	MW-1(F)	4/15/2004	0.36 J	0.5 U	0.5 U	0.5 U	0.2 U
MW-1(F)	MW-1 (F)	7/20/2004	0.37 J	0.5 U	0.5 U	0.5 U	0.23
MW-2(M)	MW-2(M)	6/19/2003	100	2.5 U	2.5 U	14.6	48.4
MW-2(M)	MW-2 (M)	10/15/2003	2.23	0.5 U	0.5 U	0.5 U	125
MW-2(M)	MW-2 (M)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	10.6
MW-2(M)	MW-2(M)	4/14/2004	87.6	2.5 U	2.5 U	3.55	28.8
MW-2(M)	MW-2 (M)	7/22/2004	16.3	2.5 U	2.5 U	2.7	15.5
MW-6(M)	MW-6(M)	6/19/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6(M)	MW-6(M)	10/22/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6(M)	MW-6 (M)	1/12/2004	0.92	0.5 U	0.5 U	0.2	0.5 U
MW-6(M)	MW-6 (M)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-6(M)	MW-6 (M)	7/19/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-7(M)	BM-7(M)	6/19/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7(M)	MW-7(M)	6/19/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7(M)	MW-7(M)	10/13/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7(M)	MW-7 (M)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7(M)	MW-7 (M)	4/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-7(M)	MW-7 (M)	7/19/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U

TABLE 5

RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-10(M)	MW-10(M)	6/19/2003	26.1	0.5 U	0.5 U	7.58	21
MW-10(M)	MW-10 (M)	10/15/2003	6.3	1 U	1 U	1.34	319
MW-10(M)	MW-10 (M)	1/13/2004	4.05	0.5 U	0.5 U	4.55	50.3
MW-10(M)	MW-10 (M)	4/13/2004	3.71	0.5 U	0.5 U	3.15	52.4
MW-10(M)	MW-10 (M)	7/19/2004	4.16	0.5 U	0.5 U	4.76	34.4
MW-11(M)	MW-11(M)	6/19/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-11(M)	MW-11 (M)	10/15/2003	1 U B	0.5 U	0.5 U	0.31 J	11.6
MW-11(M)	MW-11 (M)	1/13/2004	1 U	0.5 U	0.5 U	0.5 U	8.86
MW-11(M)	MW-11 (M)	4/13/2004	0.19 J	0.5 U	0.5 U	0.5 U	0.35
MW-11(M)	MW-11 (M)	7/21/2004	1 U	0.5 U	0.5 U	0.5 U	0.44
MW-12(A)	MW-12(A)	10/22/2003	0.15 J	0.5 U	0.5 U	0.5 U	0.19 J
MW-12(A)	MW-12 (A)	1/15/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-12(A)	MW-12(A)	4/16/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-12(A)	MW-12 (A)	7/22/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-13(A)	MW-13(A)	10/22/2003	17.4	2.5 U	2.5 U	42.8	259
MW-13(A)	MW-13 (A)	1/15/2004	393	10 U	6.8	10 U	750
MW-13(A)	MW-13(A)	4/16/2004	31	10 U	10 U	41.8	564
MW-13(A)	MW-13 (A)	7/22/2004	8.6 J	10 U	10 U	45.4	256
MW-14(A)	MW-14(A)	10/21/2003	0.53 J	0.5 U	0.5 U	0.17 J	0.77
MW-14(A)	MW-14 (A)	1/15/2004	0.09 J	0.5 U	0.5 U	0.5 U	0.65
MW-14(A)	MW-14(A)	4/16/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-14(A)	MW-14 (A)	7/23/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-15(A)	MW-15(A)	10/20/2003	7.37	0.5 U	0.26 J	6.87	127
MW-16(A)	MW-16(A)	10/20/2003	2.09	0.5 U	0.5 U	0.93	11.4
MW-16(A)	MW-16(A)	1/19/2004	1 U	0.5 U	0.5 U	0.5 U	2.32
MW-16(A)	MW-16(A)	4/15/2004	1 U	0.5 U	0.5 U	0.5 U	11.7
MW-16(A)	MW-16 (A)	7/22/2004	0.48 J	0.5 U	0.5 U	0.5 U	7.26
MW-17 (A)	BM-17 (A)	7/22/2004	0.16 J	0.5 U	0.5 U	0.5 U	1.18
MW-17(A)	MW-17 (A)	10/17/2003	3.19	0.5 U	0.5 U	0.54	9.19
MW-17(A)	BM-17(A)	1/19/2004	0.62 J	0.5 U	0.5 U	2.21	2.5
MW-17(A)	MW-17(A)	1/19/2004	0.72 J	0.5 U	0.5 U	2.64	2.52
MW-17(A)	MW-17(A)	4/15/2004	0.44 J	0.5 U	0.5 U	1.73	2.69

TABLE 5

RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L		1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-17(A)	MW-17 (A)	7/22/2004	0.44	J	0.5 U	0.5 U	0.5 U	1.22
MW-18(A)	MW-18(A)	10/21/2003	0.72	J	1 U	1 U	1.56	273
MW-18(A)	MW-18(A)	1/19/2004	0.29	J	0.5 U	0.5 U	1.15	138
MW-18(A)	MW-18(A)	4/15/2004	0.17	J	0.5 U	0.5 U	0.5 U	3.2
MW-18(A)	MW-18 (A)	7/21/2004	0.09	J	0.5 U	0.5 U	0.34 J	44.1
MW-19(A)	BM-19(A)	10/20/2003	1 U		0.5 U	0.5 U	0.5 U	0.5 U
MW-19(A)	MW-19(A)	10/20/2003	1 U		0.5 U	0.5 U	0.5 U	0.5 U
MW-19(A)	MW-19 (A)	1/13/2004	1 U		0.5 U	0.5 U	0.5 U	0.5 U
MW-19(A)	MW-19(A)	4/15/2004	1 U		0.5 U	0.5 U	0.5 U	0.2 U
MW-19(A)	BM-19 (A)	7/20/2004	1 U		0.5 U	0.5 U	0.5 U	0.46
MW-19(A)	MW-19 (A)	7/20/2004	0.13	J	0.5 U	0.5 U	0.5 U	0.31
MW-20(A)	MW-20(A)	10/20/2003	15.9		0.5 U	0.5 U	2.06	16.9
MW-20(A)	MW-20 (A)	1/13/2004	56.2		0.5 U	0.5 U	7.32	3.64
MW-20(A)	MW-20(A)	4/15/2004	5.97		0.5 U	0.5 U	0.59	1.77
MW-20(A)	MW-20 (A)	7/20/2004	19.6		0.5 U	0.5 U	1.89	2.98
MW-21(A)	MW-21(A)	10/20/2003	0.2	J	0.5 U	0.5 U	0.24 J	0.5 U
MW-21(A)	BM-21 (A)	1/13/2004	1 U		0.5 U	0.5 U	0.5 U	0.25
MW-21(A)	MW-21 (A)	1/13/2004	1 U		0.5 U	0.5 U	0.5 U	0.31
MW-21(A)	MW-21(A)	4/16/2004	1.37		0.5 U	0.5 U	0.5 U	0.7
MW-21(A)	MW-21 (A)	7/20/2004	0.22	J	0.5 U	0.5 U	0.5 U	0.26
MW-22(A)	MW-22 (A)	10/16/2003	1 U	B	0.5 U	0.5 U	0.5 U	19.4
MW-22(A)	MW-22(A)	1/19/2004	1 U		0.5 U	0.5 U	0.5 U	0.5 U
MW-22(A)	MW-22(A)	4/15/2004	1 U		0.5 U	0.5 U	0.5 U	0.2 U
MW-22(A)	MW-22 (A)	7/20/2004	1 U		0.5 U	0.5 U	0.5 U	0.26
MW-23(A)	MW-23(A)	10/20/2003	1 U		0.5 U	0.5 U	0.5 U	0.5 U
MW-23(A)	MW-23 (A)	1/15/2004	0.1		0.5 U	0.5 U	0.5 U	0.5 U
MW-23(A)	BM-23(A)	4/15/2004	1.89		0.5 U	0.5 U	0.57	2.75
MW-23(A)	MW-23(A)	4/15/2004	2.7		0.5 U	0.5 U	0.84	3.04
MW-23(A)	MW-23 (A)	7/20/2004	1 U		0.5 U	0.5 U	0.5 U	0.2 U
MW-24(A)	MW-24(A)	10/21/2003	2.05		0.5 U	0.5 U	1.35	0.62
MW-24(A)	MW-24 (A)	1/15/2004	232		5 U	5 U	33.9	2.7
MW-24(A)	MW-24(A)	4/14/2004	55		0.5 U	0.5 U	3.87	0.16

TABLE 5

RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-24(A)	MW-24 (A)	7/22/2004	48.3	0.5 U	0.5 U	1.4	0.55
MW-26(A)	MW-26 (A)	10/17/2003	600	2.5 U	2.5 U	135	3.05
MW-26(A)	MW-26 (A)	1/15/2004	3120	10 U	10 U	682	3
MW-26(A)	MW-26(A)	4/14/2004	2580	10 U	10 U	565	4 U
MW-26(A)	MW-26 (A)	7/22/2004	3300	10 U	10 U	665	4 U
MW-27(A)	MW-27(A)	10/21/2003	1 U	0.5 U	0.5 U	0.5 U	0.98
MW-27(A)	MW-27 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-27(A)	MW-27 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-27(A)	MW-27 (A)	7/22/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-28(A)	MW-28 (A)	10/17/2003	566	5 U	5 U	138	208
MW-28(A)	MW-28(A)	1/19/2004	942	5 U	5 U	204	702
MW-28(A)	MW-28(A)	4/14/2004	250	5 U	5 U	51.2	179
MW-28(A)	MW-28 (A)	7/23/2004	130	2.5 U	2.5 U	28.4	72.2
MW-29(A)	MW-29(A)	10/21/2003	1980	25 U	25 U	446	482
MW-29(A)	MW-29(A)	1/19/2004	2630	25 U	25 U	568	330
MW-29(A)	MW-29(A)	4/16/2004	1770	25 U	25 U	396	148
MW-29(A)	MW-29 (A)	7/22/2004	2260	25 U	25 U	521	380
MW-30(A)	MW-30 (A)	10/16/2003	20 U B	10 U	10 U	34.8	262
MW-30(A)	MW-30 (A)	1/16/2004	33.6	10 U	10 U	14.2	341
MW-30(A)	MW-30 (A)	4/13/2004	75.7	5 U	5 U	85.5	533
MW-30(A)	MW-30 (A)	7/20/2004	3.4 J	10 U	10 U	60.6	407
MW-31(A)	BM-31 (A)	10/16/2003	10 U B	5 U	5 U	3.9 J	1260
MW-31(A)	MW-31 (A)	10/16/2003	10 U B	5 U	5 U	3.9	1170
MW-31(A)	MW-31 (A)	1/12/2004	10 U	5 U	5 U	2.2	1390

TABLE 5

RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-31(A)	BM-31 (A)	4/13/2004	0.9 J	2.5 U	2.5 U	2.7	538
MW-31(A)	MW-31 (A)	4/13/2004	0.85	2.5 U	2.5 U	2.65	574
MW-31(A)	MW-31 (A)	7/20/2004	1.1 J	5 U	5 U	4.8 J	1020
MW-32(A)	MW-32(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-32(A)	MW-32 (A)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-32(A)	MW-32 (A)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-32(A)	MW-32 (A)	7/19/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-33(A)	MW-33(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	3.49
MW-33(A)	MW-33 (A)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	15
MW-33(A)	MW-33 (A)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	12.1
MW-33(A)	MW-33 (A)	7/19/2004	1 U	0.5 U	0.5 U	0.5 U	3.47
MW-34(A)	MW-34(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-34(A)	MW-34 (A)	1/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-34(A)	MW-34 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-34(A)	MW-34 (A)	7/20/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-35(A)	MW-35 (A)	10/16/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-35(A)	MW-35 (A)	1/16/2004	0.13 J	0.5 U	0.5 U	0.5 U	0.5 U
MW-35(A)	MW-35 (A)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-35(A)	MW-35 (A)	7/20/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-36(A)	MW-36(A)	10/21/2003	0.15 J	0.5 U	0.5 U	0.5 U	0.5 U
MW-36(A)	MW-36 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-36(A)	MW-36 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-36(A)	MW-36 (A)	7/22/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U

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RBDM VOCs IN GROUND WATER

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Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L	
MW-37(A)	MW-37 (A)	10/17/2003	12.2	0.5 U	0.5 U	2.96	0.16	J
MW-38(A)	MW-38(A)	10/21/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U	
MW-38(A)	MW-38 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U	
MW-38(A)	MW-38 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U	
MW-38(A)	MW-38 (A)	7/22/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U	
MW-39(A)	MW-39 (A)	10/16/2003	19.7	0.5 U	0.5 U	3.02	3.98	
MW-39(A)	MW-39 (A)	1/16/2004	14.4	0.5 U	0.5 U	2.7	3.37	
MW-39(A)	MW-39 (A)	4/14/2004	6.04	0.5 U	0.5 U	1.12	3.4	
MW-39(A)	MW-39 (A)	7/21/2004	7.49	0.5 U	0.5 U	1.9	1.7	
MW-40(A)	MW-40 (A)	10/17/2003	40.6	2.5 U	2.5 U	8.7	81.2	
MW-40(A)	MW-40(A)	1/20/2004	3170	10 U	10 U	527	7.8	J
MW-40(A)	MW-40(A)	4/16/2004	3170	25 U	25 U	620	83.5	
MW-41(A)	MW-41(A)	10/14/2003	15.4	5 U	5 U	5 U	355	
MW-42(A)	MW-42 (A)	10/15/2003	44.8	10 U	10 U	11.2	3020	
MW-43(A)	MW-43(A)	10/13/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U	
MW-43(A)	MW-43 (A)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	10.9	
MW-43(A)	MW-43 (A)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U	
MW-43(A)	MW-43 (A)	7/21/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U	
MW-44(A)	MW-44 (A)	10/17/2003	3470	25 U	25 U	898	898	
MW-45(A)	MW-45 (A)	10/16/2003	1 U B	0.5 U	0.5 U	0.5 U	0.16	J
MW-45(A)	MW-45 (A)	1/16/2004	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U	
MW-45(A)	MW-45 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U	
MW-45(A)	MW-45 (A)	7/21/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U	
MW-46(A)	MW-46(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U	
MW-46(A)	MW-46(A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U	
MW-46(A)	MW-46 (A)	4/12/2004	0.32 J	0.5 U	0.5 U	0.5 U	0.2 U	
MW-46(A)	MW-46 (A)	7/21/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U	

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RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-47(A)	MW-47(A)	10/13/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-47(A)	MW-47 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.21
MW-47(A)	MW-47 (A)	4/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-47(A)	MW-47 (A)	7/21/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-48(A)	MW-48(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-48(A)	MW-48 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-48(A)	MW-48 (A)	4/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-48(A)	MW-48 (A)	7/21/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
R-1(M)	R-1(M)	10/22/2003	1 U B	0.5 U	0.5 U	0.5 U	0.23 J

TABLE 5

RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
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Locator ID	Sample ID	Sample Date	Ethylbenzene ug/L	Isopropyl benzene ug/L	Methyl-t- butyl ether ug/L	n- Propylbenzene ug/L	Toluene ug/L	Xylenes ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-1(F)	MW-1-082302	8/23/2002	0.5 U				0.5 U	1 U
MW-1(F)	MW-1(F)	10/22/2003	3.65	0.17 J	2 U	0.26 J	7.08	16.3
MW-1(F)	MW-1 (F)	1/15/2004	1.99	2.1	2 U	1.13	0.5 U	1 U
MW-1(F)	MW-1(F)	4/15/2004	0.66	0.19 J	2 U	0.26 J	0.5 U	0.92 J
MW-1(F)	MW-1 (F)	7/20/2004	2.48	0.18 J	2 U	0.4 J	0.32 J	2
MW-2(M)	MW-2(M)	6/19/2003	756	70.2	10 U	270	15.5	369
MW-2(M)	MW-2 (M)	10/15/2003	92.6	42.9	2 U	159	8.5	21.3
MW-2(M)	MW-2 (M)	1/12/2004	2.52	10.2	2 U	47.8	0.51 J+,B	0.86
MW-2(M)	MW-2(M)	4/14/2004	625	54.7	10 U	212	13.4	342
MW-2(M)	MW-2 (M)	7/22/2004	196	50.6	10 U	206	7.35	29.4
MW-6(M)	MW-6(M)	6/19/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-6(M)	MW-6(M)	10/22/2003	0.41 J	2 U	2 U	0.5 U	0.5 U B	1 U
MW-6(M)	MW-6 (M)	1/12/2004	0.5 U	0.27	2 U	0.49	0.5 U	1 U
MW-6(M)	MW-6 (M)	4/13/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-6(M)	MW-6 (M)	7/19/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-7(M)	BM-7(M)	6/19/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-7(M)	MW-7(M)	6/19/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-7(M)	MW-7(M)	10/13/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-7(M)	MW-7 (M)	1/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-7(M)	MW-7 (M)	4/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-7(M)	MW-7 (M)	7/19/2004	0.5 U	0.12 J	2 U	0.17 J	0.5 U	1 U

TABLE 5

RBDM VOCs IN GROUND WATER

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Locator ID	Sample ID	Sample Date	Ethylbenzene ug/L	Isopropyl benzene ug/L	Methyl-t- butyl ether ug/L	n- Propylbenzene ug/L	Toluene ug/L	Xylenes ug/L
MW-10(M)	MW-10(M)	6/19/2003	25	27.8	2 U	26.8	5.55	49
MW-10(M)	MW-10 (M)	10/15/2003	182	18.5	4 U	48.6	19.3	49.6
MW-10(M)	MW-10 (M)	1/13/2004	24.9	27.5	2 U	28.9	15.3	46.9
MW-10(M)	MW-10 (M)	4/13/2004	32.1	23.1	2 U	21.7	10.5	55
MW-10(M)	MW-10 (M)	7/19/2004	7.38	28.9	2 U	37.1	6.09	31.2
MW-11(M)	MW-11(M)	6/19/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-11(M)	MW-11 (M)	10/15/2003	0.38 J	4.37	2 U	7.48	0.96 JB	8.39
MW-11(M)	MW-11 (M)	1/13/2004	0.11	3.15	2 U	1.3	0.5 U B	1 U
MW-11(M)	MW-11 (M)	4/13/2004	0.53	0.43 J	2 U	3.19	0.5 U B	1 U
MW-11(M)	MW-11 (M)	7/21/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-12(A)	MW-12(A)	10/22/2003	1.35	2 U	2 U	0.5 U	2.77	3.77
MW-12(A)	MW-12 (A)	1/15/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-12(A)	MW-12(A)	4/16/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-12(A)	MW-12 (A)	7/22/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-13(A)	MW-13(A)	10/22/2003	915	94.7	10 U	228	26.6	94.6
MW-13(A)	MW-13 (A)	1/15/2004	2270	225	40 U	676	82.4	578
MW-13(A)	MW-13(A)	4/16/2004	2190	233	40 U	657	58	110
MW-13(A)	MW-13 (A)	7/22/2004	1290	137	40 U	355	30	50.4
MW-14(A)	MW-14(A)	10/21/2003	2.36	0.11 J	2 U	0.2 J	5.91	6.82
MW-14(A)	MW-14 (A)	1/15/2004	3.28	0.28 J	2 U	0.66	0.5 U	0.47 J
MW-14(A)	MW-14(A)	4/16/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-14(A)	MW-14 (A)	7/23/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-15(A)	MW-15(A)	10/20/2003	27	42.4	0.93 J	90.3	13.5	40.7
MW-16(A)	MW-16(A)	10/20/2003	1.86	7.81	2 U	12.3	1.43 J,B	9.74
MW-16(A)	MW-16(A)	1/19/2004	0.36 J	3.79	2 U	5.44	0.5 U B	1 U
MW-16(A)	MW-16(A)	4/15/2004	1.1	28.8	0.38 J	29.9	0.71 JB	0.34 J
MW-16(A)	MW-16 (A)	7/22/2004	1.39	13.3	2 U	25.1	2.15	2.83
MW-17 (A)	BM-17 (A)	7/22/2004	0.58	1.75 J	2 U	3.95	1.09	1.12
MW-17(A)	MW-17 (A)	10/17/2003	14.7	2.9	2 U	7.97	25.5	35.3
MW-17(A)	BM-17(A)	1/19/2004	50.3	6.44	2 U	16.4	1.04 JB	18.9
MW-17(A)	MW-17(A)	1/19/2004	51.7	6.55	2 U	17.4	1.05 JB	20.1
MW-17(A)	MW-17(A)	4/15/2004	29.3	7.78	2 U	23	0.67 JB	8.65

TABLE 5

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Locator ID	Sample ID	Sample Date	Ethylbenzene ug/L	Isopropyl benzene ug/L	Methyl-t- butyl ether ug/L	n- Propylbenzene ug/L	Toluene ug/L	Xylenes ug/L
MW-17(A)	MW-17 (A)	7/22/2004	0.86	1.85 J	2 U	4.37	1.46	1.83
MW-18(A)	MW-18(A)	10/21/2003	2.18	25.8	0.98 J	45	21.1	22.4
MW-18(A)	MW-18(A)	1/19/2004	5.45	13.8	2 U	26.9	13.9	18.9
MW-18(A)	MW-18(A)	4/15/2004	0.26 J	2.09	0.2 J	1.6	0.68 JB	0.82 J
MW-18(A)	MW-18 (A)	7/21/2004	1.92	9.41	2 U	19	3.18	1.68
MW-19(A)	BM-19(A)	10/20/2003	0.5 U	2 U	0.23 J	0.5 U	0.5 U	1 U
MW-19(A)	MW-19(A)	10/20/2003	0.5 U	2 U	0.23 J	0.5 U	0.5 U	1 U
MW-19(A)	MW-19 (A)	1/13/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-19(A)	MW-19(A)	4/15/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-19(A)	BM-19 (A)	7/20/2004	2.13	0.11 J	0.11 J	0.21 J	0.25 J	0.73 J
MW-19(A)	MW-19 (A)	7/20/2004	1.58	2 U	2 U	0.2 J	0.19 J	0.61 J
MW-20(A)	MW-20(A)	10/20/2003	20.2	1.88 J	2 U	3.62	1.29 J,B	121
MW-20(A)	MW-20 (A)	1/13/2004	12.5	6.54	2 U	8.92	0.88 J+,B	46.2
MW-20(A)	MW-20(A)	4/15/2004	0.11	1.16	2 U	2.02	0.5 U B	1.08
MW-20(A)	MW-20 (A)	7/20/2004	14.8	4.03	2 U	3	1.18	63.3
MW-21(A)	MW-21(A)	10/20/2003	3.1	2.5	2 U	7.31	0.5 U	1.73
MW-21(A)	BM-21 (A)	1/13/2004	1.2	2.36	2 U	6.9	0.5 U B	0.45
MW-21(A)	MW-21 (A)	1/13/2004	1.45	2.53	2 U	7.59	0.5 U B	0.46
MW-21(A)	MW-21(A)	4/16/2004	2.51	2.59	2 U	3.97	0.52 JB	5.41
MW-21(A)	MW-21 (A)	7/20/2004	3.01	3.9	2 U	13.3	0.17 J	0.88 J
MW-22(A)	MW-22 (A)	10/16/2003	52.9	2.78	2 U	7	2.96	7.82
MW-22(A)	MW-22(A)	1/19/2004	0.3 J	2 U	2 U	0.5 U	0.5 U	1 U
MW-22(A)	MW-22(A)	4/15/2004	0.19	2 U	2 U	0.5 U	0.5 U	1 U
MW-22(A)	MW-22 (A)	7/20/2004	1.25	2 U	2 U	0.18 J	0.5 U	0.46 J
MW-23(A)	MW-23(A)	10/20/2003	0.5 U	2 U	2 U	0.15 J	0.5 U	1 U
MW-23(A)	MW-23 (A)	1/15/2004	0.52	2 U	2 U	0.17	0.5 U	0.38
MW-23(A)	BM-23(A)	4/15/2004	12.1	2.64	2 U	5.04	0.94 JB	10.9
MW-23(A)	MW-23(A)	4/15/2004	14.8	3.27	2 U	6.02	1.13 JB	14.5
MW-23(A)	MW-23 (A)	7/20/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-24(A)	MW-24(A)	10/21/2003	7.69	0.94 J	2 U	2.01	1.17 J,B	10.5
MW-24(A)	MW-24 (A)	1/15/2004	60.1	4.8	20 U	9.7	5 U	116
MW-24(A)	MW-24(A)	4/14/2004	28.4	4.54	2 U	11.1	0.5 U B	30.7

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Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Ethylbenzene ug/L	Isopropyl benzene ug/L	Methyl-t- butyl ether ug/L	n- Propylbenzene ug/L	Toluene ug/L	Xylenes ug/L
MW-24(A)	MW-24 (A)	7/22/2004	29.5	3.2	2 U	6.53	0.98	15.6
MW-26(A)	MW-26 (A)	10/17/2003	373	32	10 U	83.3	18.4	1040
MW-26(A)	MW-26 (A)	1/15/2004	1280	104	40 U	280	24.2 JB	5500
MW-26(A)	MW-26(A)	4/14/2004	852	96	40 U	251	14.8 JB	3060
MW-26(A)	MW-26 (A)	7/22/2004	886	102	40 U	278	17.2	3430
MW-27(A)	MW-27(A)	10/21/2003	0.12 J	2 U	2 U	0.5 U	0.5 U	1 U
MW-27(A)	MW-27 (A)	1/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-27(A)	MW-27 (A)	4/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-27(A)	MW-27 (A)	7/22/2004	0.37 J	2 U	2 U	0.5 U	0.5 U	1 U
MW-28(A)	MW-28 (A)	10/17/2003	334	24.4	20 U	85.6	201	1070
MW-28(A)	MW-28(A)	1/19/2004	902	30.1	20 U	92.4	696	4000
MW-28(A)	MW-28(A)	4/14/2004	247	16.2 J	20 U	37.4	88.9	874
MW-28(A)	MW-28 (A)	7/23/2004	141	6.55 J	10 U	18.2	15.8	412
MW-29(A)	MW-29(A)	10/21/2003	2480	86 J	100 U	234	5160	13300
MW-29(A)	MW-29(A)	1/19/2004	2640	82 J	100 U	241	8170	13500
MW-29(A)	MW-29(A)	4/16/2004	1840	69.5 J	100 U	188	3780	8920
MW-29(A)	MW-29 (A)	7/22/2004	1750	98.5 J	100 U	270	5520	8130
MW-30(A)	MW-30 (A)	10/16/2003	2080	88.8	40 U	238	110	663
MW-30(A)	MW-30 (A)	1/16/2004	1910	79	40 U	232	127	378
MW-30(A)	MW-30 (A)	4/13/2004	1850	70.2	20 U	170	243	2140
MW-30(A)	MW-30 (A)	7/20/2004	2070	83.2	40 U	218	128	1330
MW-31(A)	BM-31 (A)	10/16/2003	728	56.5	20 U	156	41.6	143
MW-31(A)	MW-31 (A)	10/16/2003	706	54.4	20 U	152	38.4	138
MW-31(A)	MW-31 (A)	1/12/2004	798	44.2	20 U	121	109	189

TABLE 5

RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Ethylbenzene ug/L	Isopropyl benzene ug/L	Methyl-t- butyl ether ug/L	n- Propylbenzene ug/L	Toluene ug/L	Xylenes ug/L
MW-31(A)	BM-31 (A)	4/13/2004	432	33	10 U	73	29.2	121
MW-31(A)	MW-31 (A)	4/13/2004	533	35.2	10 U	80.2	35.9	127
MW-31(A)	MW-31 (A)	7/20/2004	911	44.8	20 U	119	67.9	356
MW-32(A)	MW-32(A)	10/14/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-32(A)	MW-32 (A)	1/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-32(A)	MW-32 (A)	4/13/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-32(A)	MW-32 (A)	7/19/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-33(A)	MW-33(A)	10/14/2003	0.5 U	0.35 J	2 U	0.63	0.5 U	0.28 J
MW-33(A)	MW-33 (A)	1/12/2004	0.55	3.71	2 U	8.13	2.16	4.16
MW-33(A)	MW-33 (A)	4/13/2004	1.82	4.07	2 U	8.46	0.83 JB	2.13
MW-33(A)	MW-33 (A)	7/19/2004	0.5 U	0.89 J	2 U	1.61	0.62	0.65 J
MW-34(A)	MW-34(A)	10/14/2003	0.29 J	2 U	2 U	0.5 U	0.5 U	1 U
MW-34(A)	MW-34 (A)	1/13/2004	0.25	2 U	2 U	0.5 U	0.5 U	1 U
MW-34(A)	MW-34 (A)	4/14/2004	0.21	2 U	2 U	0.5 U	0.5 U	1 U
MW-34(A)	MW-34 (A)	7/20/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-35(A)	MW-35 (A)	10/16/2003	1.12	2 U	2 U	0.17 J	0.5 U	1 U
MW-35(A)	MW-35 (A)	1/16/2004	0.42 J	2 U	2 U	0.18 J	0.5 U	1 U
MW-35(A)	MW-35 (A)	4/13/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-35(A)	MW-35 (A)	7/20/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-36(A)	MW-36(A)	10/21/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	0.28 J
MW-36(A)	MW-36 (A)	1/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-36(A)	MW-36 (A)	4/14/2004	0.92	2 U	2 U	0.5 U	0.5 U B	1 U
MW-36(A)	MW-36 (A)	7/22/2004	0.54	2 U	2 U	0.14 J	0.5 U	1 U

TABLE 5

RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Ethylbenzene ug/L	Isopropyl benzene ug/L	Methyl-t- butyl ether ug/L	n- Propylbenzene ug/L	Toluene ug/L	Xylenes ug/L
MW-37(A)	MW-37 (A)	10/17/2003	17	6.72	2 U	10.4	0.72 J	30.6
MW-38(A)	MW-38(A)	10/21/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-38(A)	MW-38 (A)	1/14/2004	0.5 U	2 U	2 U	0.15	0.5 U	1 U
MW-38(A)	MW-38 (A)	4/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-38(A)	MW-38 (A)	7/22/2004	0.73	0.2 J	2 U	0.51	0.5 U	1 U
MW-39(A)	MW-39 (A)	10/16/2003	10.9	3.42	2 U	5.33	0.5 U B	21.6
MW-39(A)	MW-39 (A)	1/16/2004	10.8	3.34	2 U	4.57	0.5 U B	28.8
MW-39(A)	MW-39 (A)	4/14/2004	9.92	3.36	2 U	6.58	0.6 JB	11.7
MW-39(A)	MW-39 (A)	7/21/2004	6.32	2.77	2 U	4.4	0.26 J	13.2
MW-40(A)	MW-40 (A)	10/17/2003	650	44.8	10 U	86.4	57.6	367
MW-40(A)	MW-40(A)	1/20/2004	2230	98	40 U	334	833	6460
MW-40(A)	MW-40(A)	4/16/2004	2510	98.5 J	100 U	325	1530	8150
MW-41(A)	MW-41(A)	10/14/2003	1260	38.1	20 U	88.9	103	192
MW-42(A)	MW-42 (A)	10/15/2003	1850	63.4	40 U	226	163	370
MW-43(A)	MW-43(A)	10/13/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-43(A)	MW-43 (A)	1/12/2004	3.56	2 U	2 U	0.5 U	0.5 U B	1 U
MW-43(A)	MW-43 (A)	4/13/2004	0.48 J	2 U	2 U	3.76	0.5 U	1 U
MW-43(A)	MW-43 (A)	7/21/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-44(A)	MW-44 (A)	10/17/2003	2890	94 J	100 U	388	5320	14900
MW-45(A)	MW-45 (A)	10/16/2003	0.32 J	2 U	2 U	0.21 J	0.5 U	1 U
MW-45(A)	MW-45 (A)	1/16/2004	0.23 J	2 U	2 U	0.5 U	0.5 U	1 U
MW-45(A)	MW-45 (A)	4/14/2004	0.11 J	2 U	2 U	0.5 U	0.5 U	1 U
MW-45(A)	MW-45 (A)	7/21/2004	0.11 J	2 U	2 U	0.5 U	0.5 U	1 U
MW-46(A)	MW-46(A)	10/14/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-46(A)	MW-46(A)	1/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-46(A)	MW-46 (A)	4/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-46(A)	MW-46 (A)	7/21/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U

TABLE 5

RBDM VOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Ethylbenzene ug/L	Isopropyl benzene ug/L	Methyl-t- butyl ether ug/L	n- Propylbenzene ug/L	Toluene ug/L	Xylenes ug/L
MW-47(A)	MW-47(A)	10/13/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-47(A)	MW-47 (A)	1/14/2004	0.13	2 U	2 U	0.5 U	0.5 U	1 U
MW-47(A)	MW-47 (A)	4/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-47(A)	MW-47 (A)	7/21/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-48(A)	MW-48(A)	10/14/2003	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-48(A)	MW-48 (A)	1/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-48(A)	MW-48 (A)	4/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
MW-48(A)	MW-48 (A)	7/21/2004	0.5 U	2 U	2 U	0.5 U	0.5 U	1 U
R-1(M)	R-1(M)	10/22/2003	0.63	2 U	2 U	0.5 U	0.5 U B	1 U

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-1(F)	MW-1-082302	8/23/2002					
MW-1(F)	MW-1(F)	10/22/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-1(F)	MW-1(F)	10/22/2003					
MW-1(F)	MW-1 (F)	1/15/2004	0.186	0.0998	0.05 U	0.01 U	0.01 U
MW-1(F)	MW-1 (F)	1/15/2004					
MW-1(F)	MW-1(F)	4/15/2004	0.112	0.0544	0.05 U	0.01 U	0.01 U
MW-1(F)	MW-1(F)	4/15/2004					
MW-1(F)	MW-1 (F)	7/20/2004	0.102	0.05 U	0.05 U	0.01 U	0.01 U
MW-1(F)	MW-1 (F)	7/20/2004					
MW-2(M)	MW-2(M)	6/19/2003	1.44	0.5 U	0.5 U	0.5 U	0.5 U
MW-2(M)	MW-2(M)	6/19/2003					
MW-2(M)	MW-2 (M)	10/15/2003	0.638	0.05 U	0.0568	0.01 U	0.01 U
MW-2(M)	MW-2 (M)	10/15/2003					
MW-2(M)	MW-2 (M)	1/12/2004	0.54	0.15 U	0.1 U	0.02 U	0.02 U
MW-2(M)	MW-2 (M)	1/12/2004					
MW-2(M)	MW-2(M)	4/14/2004	0.644	0.5 U	0.5 U	0.1 U	0.1 U
MW-2(M)	MW-2(M)	4/14/2004					
MW-2(M)	MW-2 (M)	7/22/2004	1.41	0.5 U	0.5 U	0.1 U	0.1 U
MW-2(M)	MW-2 (M)	7/22/2004					
MW-6(M)	MW-6(M)	6/19/2003	0.214	0.1 U	0.1 U	0.1 U	0.1 U
MW-6(M)	MW-6(M)	6/19/2003					
MW-6(M)	MW-6(M)	10/22/2003	0.146	0.05 U U	0.05 U	0.01 U	0.01 U
MW-6(M)	MW-6(M)	10/22/2003					
MW-6(M)	MW-6 (M)	1/12/2004	0.167	0.05 U	0.05 U	0.011	0.01 U
MW-6(M)	MW-6 (M)	1/12/2004					
MW-6(M)	MW-6 (M)	4/13/2004	0.153	0.05 U	0.05 U	0.01 U	0.01 U
MW-6(M)	MW-6 (M)	4/13/2004					
MW-6(M)	MW-6 (M)	7/19/2004	0.228	0.05 U	0.05 U	0.01 U	0.01 U
MW-6(M)	MW-6 (M)	7/19/2004					
MW-7(M)	BM-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-7(M)	BM-7(M)	6/19/2003					
MW-7(M)	MW-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-7(M)	MW-7(M)	6/19/2003					
MW-7(M)	MW-7(M)	10/13/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-7(M)	MW-7(M)	10/13/2003					
MW-7(M)	MW-7 (M)	1/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-7(M)	MW-7 (M)	1/12/2004					

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-7(M)	MW-7 (M)	4/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-7(M)	MW-7 (M)	4/12/2004					
MW-7(M)	MW-7 (M)	7/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-7(M)	MW-7 (M)	7/19/2004					
MW-10(M)	MW-10(M)	6/19/2003	2 U	2 U	0.5 U	0.5 U	0.5 U
MW-10(M)	MW-10(M)	6/19/2003					
MW-10(M)	MW-10 (M)	10/15/2003	0.28	0.05 U	0.05 U	0.0475	0.069
MW-10(M)	MW-10 (M)	10/15/2003					
MW-10(M)	MW-10 (M)	1/13/2004	1 U	1 U	0.05 U	0.0114	0.0105
MW-10(M)	MW-10 (M)	1/13/2004					
MW-10(M)	MW-10 (M)	4/13/2004	0.375	0.1 U	0.1 U	0.02 U	0.02 U
MW-10(M)	MW-10 (M)	4/13/2004					
MW-10(M)	MW-10 (M)	7/19/2004	0.365	0.05 U	0.05 U	0.0147	0.0111
MW-10(M)	MW-10 (M)	7/19/2004					
MW-11(M)	MW-11(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-11(M)	MW-11(M)	6/19/2003					
MW-11(M)	MW-11 (M)	10/15/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	10/15/2003					
MW-11(M)	MW-11 (M)	1/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	1/13/2004					
MW-11(M)	MW-11 (M)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	4/13/2004					
MW-11(M)	MW-11 (M)	7/21/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	7/21/2004					
MW-12(A)	MW-12(A)	10/22/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-12(A)	MW-12(A)	10/22/2003					
MW-12(A)	MW-12 (A)	1/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-12(A)	MW-12 (A)	1/15/2004					
MW-12(A)	MW-12(A)	4/16/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-12(A)	MW-12(A)	4/16/2004					
MW-12(A)	MW-12 (A)	7/22/2004	0.05 U	0.05 U	0.05 U	0.0139	0.01 U
MW-12(A)	MW-12 (A)	7/22/2004					
MW-13(A)	MW-13(A)	10/22/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-13(A)	MW-13(A)	10/22/2003					
MW-13(A)	MW-13 (A)	1/15/2004	0.1 U	0.1 U	0.1 U	0.02 U	0.02 U
MW-13(A)	MW-13 (A)	1/15/2004					
MW-13(A)	MW-13(A)	4/16/2004	0.1 U	0.1 U	0.1 U	0.02 U	0.02 U

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-13(A)	MW-13(A)	4/16/2004					
MW-13(A)	MW-13 (A)	7/22/2004	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U
MW-13(A)	MW-13 (A)	7/22/2004					
MW-14(A)	MW-14(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-14(A)	MW-14(A)	10/21/2003					
MW-14(A)	MW-14 (A)	1/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-14(A)	MW-14 (A)	1/15/2004					
MW-14(A)	MW-14(A)	4/16/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-14(A)	MW-14(A)	4/16/2004					
MW-14(A)	MW-14 (A)	7/23/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-14(A)	MW-14 (A)	7/23/2004					
MW-15(A)	MW-15(A)	10/20/2003	0.0916	0.05 U	0.05 U	0.01 U	0.01 U
MW-15(A)	MW-15(A)	10/20/2003					
MW-16(A)	MW-16(A)	10/20/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	10/20/2003					
MW-16(A)	MW-16(A)	1/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	1/19/2004					
MW-16(A)	MW-16(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	4/15/2004					
MW-16(A)	MW-16 (A)	7/22/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-16(A)	MW-16 (A)	7/22/2004					
MW-17 (A)	BM-17 (A)	7/22/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-17 (A)	BM-17 (A)	7/22/2004					
MW-17(A)	MW-17 (A)	10/17/2003	0.0612	0.05 U	0.05 U	0.01 U	0.01 U
MW-17(A)	MW-17 (A)	10/17/2003					
MW-17(A)	BM-17(A)	1/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-17(A)	BM-17(A)	1/19/2004					
MW-17(A)	MW-17(A)	1/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-17(A)	MW-17(A)	1/19/2004					
MW-17(A)	MW-17(A)	4/15/2004	0.0532	0.05 U	0.05 U	0.01 U	0.01 U
MW-17(A)	MW-17(A)	4/15/2004					
MW-17(A)	MW-17 (A)	7/22/2004	0.0864	0.05 U	0.05 U	0.01 U	0.01 U
MW-17(A)	MW-17 (A)	7/22/2004					
MW-18(A)	MW-18(A)	10/21/2003	0.517	0.05 U	0.05 U	0.01 U	0.01 U
MW-18(A)	MW-18(A)	10/21/2003					
MW-18(A)	MW-18(A)	1/19/2004	0.632	0.1 U	0.05 U	0.01 U	0.01 U

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-18(A)	MW-18(A)	1/19/2004					
MW-18(A)	MW-18(A)	4/15/2004	0.312	0.05 U	0.05 U	0.01 U	0.01 U
MW-18(A)	MW-18(A)	4/15/2004					
MW-18(A)	MW-18 (A)	7/21/2004	0.428	0.05 U	0.05 U	0.01 U	0.01 U
MW-18(A)	MW-18 (A)	7/21/2004					
MW-19(A)	BM-19(A)	10/20/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	BM-19(A)	10/20/2003					
MW-19(A)	MW-19(A)	10/20/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	MW-19(A)	10/20/2003					
MW-19(A)	MW-19 (A)	1/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	MW-19 (A)	1/13/2004					
MW-19(A)	MW-19(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	MW-19(A)	4/15/2004					
MW-19(A)	BM-19 (A)	7/20/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	BM-19 (A)	7/20/2004					
MW-19(A)	MW-19 (A)	7/20/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	MW-19 (A)	7/20/2004					
MW-20(A)	MW-20(A)	10/20/2003	0.318	0.05 U	0.05 U	0.01 U	0.01 U
MW-20(A)	MW-20(A)	10/20/2003					
MW-20(A)	MW-20 (A)	1/13/2004	0.345	0.075 U	0.05 U	0.01 U	0.01 U
MW-20(A)	MW-20 (A)	1/13/2004					
MW-20(A)	MW-20(A)	4/15/2004	0.184	0.1 U	0.1 U	0.02 U	0.02 U
MW-20(A)	MW-20(A)	4/15/2004					
MW-20(A)	MW-20 (A)	7/20/2004	0.306	0.1 U	0.1 U	0.02 U	0.02 U
MW-20(A)	MW-20 (A)	7/20/2004					
MW-21(A)	MW-21(A)	10/20/2003	0.224	0.05 U	0.05 U	0.01 U	0.01 U
MW-21(A)	MW-21(A)	10/20/2003					
MW-21(A)	BM-21 (A)	1/13/2004	0.253	0.05 U	0.05 U	0.01 U	0.01 U
MW-21(A)	BM-21 (A)	1/13/2004					
MW-21(A)	MW-21 (A)	1/13/2004	0.185	0.05 U	0.05 U	0.01 U	0.01 U
MW-21(A)	MW-21 (A)	1/13/2004					
MW-21(A)	MW-21(A)	4/16/2004	0.5 U	0.5 U	0.5 U	0.02 U	0.02 U
MW-21(A)	MW-21(A)	4/16/2004					
MW-21(A)	MW-21 (A)	7/20/2004	0.318	0.05 U	0.05 U	0.01 U	0.01 U
MW-21(A)	MW-21 (A)	7/20/2004					
MW-22(A)	MW-22 (A)	10/16/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-22(A)	MW-22 (A)	10/16/2003					

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Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-22(A)	MW-22(A)	1/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-22(A)	MW-22(A)	1/19/2004					
MW-22(A)	MW-22(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-22(A)	MW-22(A)	4/15/2004					
MW-22(A)	MW-22 (A)	7/20/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-22(A)	MW-22 (A)	7/20/2004					
MW-23(A)	MW-23(A)	10/20/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-23(A)	MW-23(A)	10/20/2003					
MW-23(A)	MW-23 (A)	1/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-23(A)	MW-23 (A)	1/15/2004					
MW-23(A)	BM-23(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-23(A)	BM-23(A)	4/15/2004					
MW-23(A)	MW-23(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-23(A)	MW-23(A)	4/15/2004					
MW-23(A)	MW-23 (A)	7/20/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-23(A)	MW-23 (A)	7/20/2004					
MW-24(A)	MW-24(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-24(A)	MW-24(A)	10/21/2003					
MW-24(A)	MW-24 (A)	1/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-24(A)	MW-24 (A)	1/15/2004					
MW-24(A)	MW-24(A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-24(A)	MW-24(A)	4/14/2004					
MW-24(A)	MW-24 (A)	7/22/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-24(A)	MW-24 (A)	7/22/2004					
MW-26(A)	MW-26 (A)	10/17/2003	5 U	5 U	5 U	0.01 U	0.01 U
MW-26(A)	MW-26 (A)	10/17/2003					
MW-26(A)	MW-26 (A)	1/15/2004	0.0687	0.05 U	0.05 U	0.01 U	0.01 U
MW-26(A)	MW-26 (A)	1/15/2004					
MW-26(A)	MW-26(A)	4/14/2004	0.0548	0.05 U	0.05 U	0.01 U	0.01 U
MW-26(A)	MW-26(A)	4/14/2004					
MW-26(A)	MW-26 (A)	7/22/2004	2.5 U	2.5 U	2.5 U	0.5 U	0.5 U
MW-26(A)	MW-26 (A)	7/22/2004					
MW-27(A)	MW-27(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-27(A)	MW-27(A)	10/21/2003					
MW-27(A)	MW-27 (A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-27(A)	MW-27 (A)	1/14/2004					
MW-27(A)	MW-27 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U

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Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-27(A)	MW-27 (A)	4/14/2004					
MW-27(A)	MW-27 (A)	7/22/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-27(A)	MW-27 (A)	7/22/2004					
MW-28(A)	MW-28 (A)	10/17/2003	5 U	5 U	5 U	0.01 U	0.01 U
MW-28(A)	MW-28 (A)	10/17/2003					
MW-28(A)	MW-28(A)	1/19/2004	0.0548	0.05 U	0.05 U	0.01 U	0.01 U
MW-28(A)	MW-28(A)	1/19/2004					
MW-28(A)	MW-28(A)	4/14/2004	0.0555	0.05 U	0.05 U	0.01 U	0.01 U
MW-28(A)	MW-28(A)	4/14/2004					
MW-28(A)	MW-28 (A)	7/23/2004	0.5 U	0.5 U	0.5 U	0.1 U	0.1 U
MW-28(A)	MW-28 (A)	7/23/2004					
MW-29(A)	MW-29(A)	10/21/2003	0.0959	0.05 U	0.05 U	0.01 U	0.01 U
MW-29(A)	MW-29(A)	10/21/2003					
MW-29(A)	MW-29(A)	1/19/2004	0.126	0.05 U	0.05 U	0.01 U	0.01 U
MW-29(A)	MW-29(A)	1/19/2004					
MW-29(A)	MW-29(A)	4/16/2004	0.1 U	0.1 U	0.1 U	0.02 U	0.02 U
MW-29(A)	MW-29(A)	4/16/2004					
MW-29(A)	MW-29 (A)	7/22/2004	2.5 U	2.5 U	2.5 U	0.5 U	0.5 U
MW-29(A)	MW-29 (A)	7/22/2004					
MW-30(A)	MW-30 (A)	10/16/2003	0.0531	0.05 U	0.05 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	10/16/2003					
MW-30(A)	MW-30 (A)	1/16/2004	0.0751	0.05 U	0.05 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	1/16/2004					
MW-30(A)	MW-30 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	4/13/2004					
MW-30(A)	MW-30 (A)	7/20/2004	0.0744	0.05 U	0.05 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	7/20/2004					
MW-31(A)	BM-31 (A)	10/16/2003	0.0594	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	BM-31 (A)	10/16/2003					
MW-31(A)	MW-31 (A)	10/16/2003	0.0661	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	MW-31 (A)	10/16/2003					
MW-31(A)	MW-31 (A)	1/12/2004	0.096	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	MW-31 (A)	1/12/2004					
MW-31(A)	BM-31 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	BM-31 (A)	4/13/2004					
MW-31(A)	MW-31 (A)	4/13/2004	0.1 U	0.1 U	0.1 U	0.02 U	0.02 U
MW-31(A)	MW-31 (A)	4/13/2004					

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Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-31(A)	MW-31 (A)	7/20/2004	0.0652	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	MW-31 (A)	7/20/2004					
MW-32(A)	MW-32(A)	10/14/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-32(A)	MW-32(A)	10/14/2003					
MW-32(A)	MW-32 (A)	1/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-32(A)	MW-32 (A)	1/12/2004					
MW-32(A)	MW-32 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-32(A)	MW-32 (A)	4/13/2004					
MW-32(A)	MW-32 (A)	7/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-32(A)	MW-32 (A)	7/19/2004					
MW-33(A)	MW-33(A)	10/14/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-33(A)	MW-33(A)	10/14/2003					
MW-33(A)	MW-33 (A)	1/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-33(A)	MW-33 (A)	1/12/2004					
MW-33(A)	MW-33 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-33(A)	MW-33 (A)	4/13/2004					
MW-33(A)	MW-33 (A)	7/19/2004	0.0528	0.05 U	0.05 U	0.01 U	0.01 U
MW-33(A)	MW-33 (A)	7/19/2004					
MW-34(A)	MW-34(A)	10/14/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-34(A)	MW-34(A)	10/14/2003					
MW-34(A)	MW-34 (A)	1/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-34(A)	MW-34 (A)	1/13/2004					
MW-34(A)	MW-34 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-34(A)	MW-34 (A)	4/14/2004					
MW-34(A)	MW-34 (A)	7/20/2004	0.05 U	0.05 U	0.05 U	0.0262	0.01 U
MW-34(A)	MW-34 (A)	7/20/2004					
MW-35(A)	MW-35 (A)	10/16/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	10/16/2003					
MW-35(A)	MW-35 (A)	1/16/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	1/16/2004					
MW-35(A)	MW-35 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	4/13/2004					
MW-35(A)	MW-35 (A)	7/20/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	7/20/2004					
MW-36(A)	MW-36(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-36(A)	MW-36(A)	10/21/2003					

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Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-36(A)	MW-36 (A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-36(A)	MW-36 (A)	1/14/2004					
MW-36(A)	MW-36 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-36(A)	MW-36 (A)	4/14/2004					
MW-36(A)	MW-36 (A)	7/22/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-36(A)	MW-36 (A)	7/22/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-36(A)	MW-36 (A)	7/22/2004					
MW-37(A)	MW-37 (A)	10/17/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-37(A)	MW-37 (A)	10/17/2003					
MW-38(A)	MW-38(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-38(A)	MW-38(A)	10/21/2003					
MW-38(A)	MW-38 (A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-38(A)	MW-38 (A)	1/14/2004					
MW-38(A)	MW-38 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-38(A)	MW-38 (A)	4/14/2004					
MW-38(A)	MW-38 (A)	7/22/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-38(A)	MW-38 (A)	7/22/2004					
MW-39(A)	MW-39 (A)	10/16/2003	1.04	0.05 U	0.137	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	10/16/2003					
MW-39(A)	MW-39 (A)	1/16/2004	0.598	0.125 U	0.0715	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	1/16/2004					
MW-39(A)	MW-39 (A)	4/14/2004	0.462	0.1 U	0.0707	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	4/14/2004					
MW-39(A)	MW-39 (A)	7/21/2004	1.4	0.5 U	0.156	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	7/21/2004					
MW-40(A)	MW-40 (A)	10/17/2003	0.727	0.05 U	0.05 U	0.01 U	0.01 U
MW-40(A)	MW-40 (A)	10/17/2003					
MW-40(A)	MW-40(A)	1/20/2004	0.553	0.15 U	0.1 U	0.02 U	0.02 U
MW-40(A)	MW-40(A)	1/20/2004					
MW-40(A)	MW-40(A)	4/16/2004	0.822	0.3 U	0.2 U	0.04 U	0.04 U
MW-40(A)	MW-40(A)	4/16/2004					
MW-41(A)	MW-41(A)	10/14/2003	2.45	1.25 U	1.25 U	0.01 U	0.01 U
MW-41(A)	MW-41(A)	10/14/2003					
MW-42(A)	MW-42 (A)	10/15/2003	1.1	0.05 U	0.0893	0.01 U	0.01 U
MW-42(A)	MW-42 (A)	10/15/2003					

TABLE 6**SVOCs IN GROUND WATER**

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Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-43(A)	MW-43(A)	10/13/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-43(A)	MW-43(A)	10/13/2003					
MW-43(A)	MW-43 (A)	1/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-43(A)	MW-43 (A)	1/12/2004					
MW-43(A)	MW-43 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-43(A)	MW-43 (A)	4/13/2004					
MW-43(A)	MW-43 (A)	7/21/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-43(A)	MW-43 (A)	7/21/2004					

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Astoria, Oregon

Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-44(A)	MW-44 (A)	10/17/2003	0.194	0.05 U	0.08 U	0.01 U	0.01 U
MW-44(A)	MW-44 (A)	10/17/2003					
MW-45(A)	MW-45 (A)	10/16/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	10/16/2003					
MW-45(A)	MW-45 (A)	1/16/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	1/16/2004					
MW-45(A)	MW-45 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	4/14/2004					
MW-45(A)	MW-45 (A)	7/21/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	7/21/2004					
MW-46(A)	MW-46(A)	10/14/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-46(A)	MW-46(A)	10/14/2003					
MW-46(A)	MW-46(A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-46(A)	MW-46(A)	1/14/2004					
MW-46(A)	MW-46 (A)	4/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-46(A)	MW-46 (A)	4/12/2004					
MW-46(A)	MW-46 (A)	7/21/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-46(A)	MW-46 (A)	7/21/2004					
MW-47(A)	MW-47(A)	10/13/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-47(A)	MW-47(A)	10/13/2003					
MW-47(A)	MW-47 (A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-47(A)	MW-47 (A)	1/14/2004					
MW-47(A)	MW-47 (A)	4/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-47(A)	MW-47 (A)	4/12/2004					
MW-47(A)	MW-47 (A)	7/21/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-47(A)	MW-47 (A)	7/21/2004					
MW-48(A)	MW-48(A)	10/14/2003	0.362	0.05 U	0.05 U	0.0127	0.01 U
MW-48(A)	MW-48(A)	10/14/2003					
MW-48(A)	MW-48 (A)	1/14/2004	0.176	0.05 U	0.05 U	0.01 U	0.01 U
MW-48(A)	MW-48 (A)	1/14/2004					
MW-48(A)	MW-48 (A)	4/12/2004	0.117	0.05 U	0.05 U	0.0109	0.0104
MW-48(A)	MW-48 (A)	4/12/2004					
MW-48(A)	MW-48 (A)	7/21/2004	0.201	0.05 U	0.05 U	0.0243	0.0177
MW-48(A)	MW-48 (A)	7/21/2004					
R-1(M)	R-1(M)	10/22/2003	0.0873	0.05 U	0.05 U	0.01 U	0.01 U
R-1(M)	R-1(M)	10/22/2003					

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-1(F)	MW-1-082302	8/23/2002						
MW-1(F)	MW-1(F)	10/22/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-1(F)	MW-1(F)	10/22/2003						
MW-1(F)	MW-1 (F)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-1(F)	MW-1 (F)	1/15/2004						
MW-1(F)	MW-1(F)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-1(F)	MW-1(F)	4/15/2004						
MW-1(F)	MW-1 (F)	7/20/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-1(F)	MW-1 (F)	7/20/2004						
MW-2(M)	MW-2(M)	6/19/2003	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
MW-2(M)	MW-2(M)	6/19/2003						
MW-2(M)	MW-2 (M)	10/15/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.0693
MW-2(M)	MW-2 (M)	10/15/2003						
MW-2(M)	MW-2 (M)	1/12/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.1 U
MW-2(M)	MW-2 (M)	1/12/2004						
MW-2(M)	MW-2(M)	4/14/2004	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U
MW-2(M)	MW-2(M)	4/14/2004						
MW-2(M)	MW-2 (M)	7/22/2004	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U
MW-2(M)	MW-2 (M)	7/22/2004						
MW-6(M)	MW-6(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U
MW-6(M)	MW-6(M)	6/19/2003						
MW-6(M)	MW-6(M)	10/22/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-6(M)	MW-6(M)	10/22/2003						
MW-6(M)	MW-6 (M)	1/12/2004	0.01 U	0.05 U	0.01 U	0.013	0.01 U	0.05 U
MW-6(M)	MW-6 (M)	1/12/2004						
MW-6(M)	MW-6 (M)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-6(M)	MW-6 (M)	4/13/2004						
MW-6(M)	MW-6 (M)	7/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-6(M)	MW-6 (M)	7/19/2004						
MW-7(M)	BM-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U
MW-7(M)	BM-7(M)	6/19/2003						
MW-7(M)	MW-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U
MW-7(M)	MW-7(M)	6/19/2003						
MW-7(M)	MW-7(M)	10/13/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-7(M)	MW-7(M)	10/13/2003						
MW-7(M)	MW-7 (M)	1/12/2004	0.01 U	0.05 U	0.01 U	0.0104	0.01 U	0.05 U
MW-7(M)	MW-7 (M)	1/12/2004						

TABLE 6

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Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-7(M)	MW-7 (M)	4/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-7(M)	MW-7 (M)	4/12/2004						
MW-7(M)	MW-7 (M)	7/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-7(M)	MW-7 (M)	7/19/2004						
MW-10(M)	MW-10(M)	6/19/2003	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
MW-10(M)	MW-10(M)	6/19/2003						
MW-10(M)	MW-10 (M)	10/15/2003	0.0625	0.05 U	0.0548	0.0554	0.0172	0.0655
MW-10(M)	MW-10 (M)	10/15/2003						
MW-10(M)	MW-10 (M)	1/13/2004	0.0124	0.05 U	0.01 U	0.0144	0.01 U	0.05 U
MW-10(M)	MW-10 (M)	1/13/2004						
MW-10(M)	MW-10 (M)	4/13/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.1 U
MW-10(M)	MW-10 (M)	4/13/2004						
MW-10(M)	MW-10 (M)	7/19/2004	0.0118	0.05 U	0.0106	0.0133	0.01 U	0.05 U
MW-10(M)	MW-10 (M)	7/19/2004						
MW-11(M)	MW-11(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U
MW-11(M)	MW-11(M)	6/19/2003						
MW-11(M)	MW-11 (M)	10/15/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-11(M)	MW-11 (M)	10/15/2003						
MW-11(M)	MW-11 (M)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-11(M)	MW-11 (M)	1/13/2004						
MW-11(M)	MW-11 (M)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-11(M)	MW-11 (M)	4/13/2004						
MW-11(M)	MW-11 (M)	7/21/2004	0.01 U	0.05 U	0.015 U	0.01 U	0.01 U	0.05 U
MW-11(M)	MW-11 (M)	7/21/2004						
MW-12(A)	MW-12(A)	10/22/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-12(A)	MW-12(A)	10/22/2003						
MW-12(A)	MW-12 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-12(A)	MW-12 (A)	1/15/2004						
MW-12(A)	MW-12(A)	4/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-12(A)	MW-12(A)	4/16/2004						
MW-12(A)	MW-12 (A)	7/22/2004	0.0102	0.05 U	0.015	0.0144	0.01 U	0.05 U
MW-12(A)	MW-12 (A)	7/22/2004						
MW-13(A)	MW-13(A)	10/22/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-13(A)	MW-13(A)	10/22/2003						
MW-13(A)	MW-13 (A)	1/15/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.1 U
MW-13(A)	MW-13 (A)	1/15/2004						
MW-13(A)	MW-13(A)	4/16/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.1 U

TABLE 6

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Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Dibenzo(a,h) anthracene ug/L	Fluoranthene ug/L
MW-13(A)	MW-13(A)	4/16/2004						
MW-13(A)	MW-13 (A)	7/22/2004	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U
MW-13(A)	MW-13 (A)	7/22/2004						
MW-14(A)	MW-14(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-14(A)	MW-14(A)	10/21/2003						
MW-14(A)	MW-14 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-14(A)	MW-14 (A)	1/15/2004						
MW-14(A)	MW-14(A)	4/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-14(A)	MW-14(A)	4/16/2004						
MW-14(A)	MW-14 (A)	7/23/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-14(A)	MW-14 (A)	7/23/2004						
MW-15(A)	MW-15(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-15(A)	MW-15(A)	10/20/2003						
MW-16(A)	MW-16(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-16(A)	MW-16(A)	10/20/2003						
MW-16(A)	MW-16(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-16(A)	MW-16(A)	1/19/2004						
MW-16(A)	MW-16(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-16(A)	MW-16(A)	4/15/2004						
MW-16(A)	MW-16 (A)	7/22/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-16(A)	MW-16 (A)	7/22/2004						
MW-17 (A)	BM-17 (A)	7/22/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-17 (A)	BM-17 (A)	7/22/2004						
MW-17(A)	MW-17 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-17(A)	MW-17 (A)	10/17/2003						
MW-17(A)	BM-17(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-17(A)	BM-17(A)	1/19/2004						
MW-17(A)	MW-17(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-17(A)	MW-17(A)	1/19/2004						
MW-17(A)	MW-17(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-17(A)	MW-17(A)	4/15/2004						
MW-17(A)	MW-17 (A)	7/22/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-17(A)	MW-17 (A)	7/22/2004						
MW-18(A)	MW-18(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-18(A)	MW-18(A)	10/21/2003						
MW-18(A)	MW-18(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U

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Astoria, Oregon

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Dibenzo(a,h) anthracene ug/L	Fluoranthene ug/L
MW-18(A)	MW-18(A)	1/19/2004						
MW-18(A)	MW-18(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-18(A)	MW-18(A)	4/15/2004						
MW-18(A)	MW-18 (A)	7/21/2004	0.01 U	0.05 U	0.02 U	0.01 U	0.01 U	0.05 U
MW-18(A)	MW-18 (A)	7/21/2004						
MW-19(A)	BM-19(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-19(A)	BM-19(A)	10/20/2003						
MW-19(A)	MW-19(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-19(A)	MW-19(A)	10/20/2003						
MW-19(A)	MW-19 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-19(A)	MW-19 (A)	1/13/2004						
MW-19(A)	MW-19(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-19(A)	MW-19(A)	4/15/2004						
MW-19(A)	BM-19 (A)	7/20/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-19(A)	BM-19 (A)	7/20/2004						
MW-19(A)	MW-19 (A)	7/20/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-19(A)	MW-19 (A)	7/20/2004						
MW-20(A)	MW-20(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U U
MW-20(A)	MW-20(A)	10/20/2003						
MW-20(A)	MW-20 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-20(A)	MW-20 (A)	1/13/2004						
MW-20(A)	MW-20(A)	4/15/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.1 U
MW-20(A)	MW-20(A)	4/15/2004						
MW-20(A)	MW-20 (A)	7/20/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.1 U
MW-20(A)	MW-20 (A)	7/20/2004						
MW-21(A)	MW-21(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U U
MW-21(A)	MW-21(A)	10/20/2003						
MW-21(A)	BM-21 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-21(A)	BM-21 (A)	1/13/2004						
MW-21(A)	MW-21 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-21(A)	MW-21 (A)	1/13/2004						
MW-21(A)	MW-21(A)	4/16/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.5 U
MW-21(A)	MW-21(A)	4/16/2004						
MW-21(A)	MW-21 (A)	7/20/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-21(A)	MW-21 (A)	7/20/2004						
MW-22(A)	MW-22 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U U
MW-22(A)	MW-22 (A)	10/16/2003						

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Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-22(A)	MW-22(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-22(A)	MW-22(A)	1/19/2004						
MW-22(A)	MW-22(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-22(A)	MW-22(A)	4/15/2004						
MW-22(A)	MW-22 (A)	7/20/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-22(A)	MW-22 (A)	7/20/2004						
MW-23(A)	MW-23(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U U
MW-23(A)	MW-23(A)	10/20/2003						
MW-23(A)	MW-23 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-23(A)	MW-23 (A)	1/15/2004						
MW-23(A)	BM-23(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-23(A)	BM-23(A)	4/15/2004						
MW-23(A)	MW-23(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-23(A)	MW-23(A)	4/15/2004						
MW-23(A)	MW-23 (A)	7/20/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-23(A)	MW-23 (A)	7/20/2004						
MW-24(A)	MW-24(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-24(A)	MW-24(A)	10/21/2003						
MW-24(A)	MW-24 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-24(A)	MW-24 (A)	1/15/2004						
MW-24(A)	MW-24(A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-24(A)	MW-24(A)	4/14/2004						
MW-24(A)	MW-24 (A)	7/22/2004	0.01 U	0.05 U	0.015 U	0.01 U	0.01 U	0.05 U
MW-24(A)	MW-24 (A)	7/22/2004						
MW-26(A)	MW-26 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-26(A)	MW-26 (A)	10/17/2003						
MW-26(A)	MW-26 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-26(A)	MW-26 (A)	1/15/2004						
MW-26(A)	MW-26(A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-26(A)	MW-26(A)	4/14/2004						
MW-26(A)	MW-26 (A)	7/22/2004	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	2.5 U
MW-26(A)	MW-26 (A)	7/22/2004						
MW-27(A)	MW-27(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-27(A)	MW-27(A)	10/21/2003						
MW-27(A)	MW-27 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-27(A)	MW-27 (A)	1/14/2004						
MW-27(A)	MW-27 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U

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Astoria, Oregon

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-27(A)	MW-27 (A)	4/14/2004						
MW-27(A)	MW-27 (A)	7/22/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-27(A)	MW-27 (A)	7/22/2004						
MW-28(A)	MW-28 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	5 U
MW-28(A)	MW-28 (A)	10/17/2003						
MW-28(A)	MW-28(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-28(A)	MW-28(A)	1/19/2004						
MW-28(A)	MW-28(A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-28(A)	MW-28(A)	4/14/2004						
MW-28(A)	MW-28 (A)	7/23/2004	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.5 U
MW-28(A)	MW-28 (A)	7/23/2004						
MW-29(A)	MW-29(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-29(A)	MW-29(A)	10/21/2003						
MW-29(A)	MW-29(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.0125	0.01 U	0.05 U
MW-29(A)	MW-29(A)	1/19/2004						
MW-29(A)	MW-29(A)	4/16/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.1 U
MW-29(A)	MW-29(A)	4/16/2004						
MW-29(A)	MW-29 (A)	7/22/2004	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	2.5 U
MW-29(A)	MW-29 (A)	7/22/2004						
MW-30(A)	MW-30 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-30(A)	MW-30 (A)	10/16/2003						
MW-30(A)	MW-30 (A)	1/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-30(A)	MW-30 (A)	1/16/2004						
MW-30(A)	MW-30 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-30(A)	MW-30 (A)	4/13/2004						
MW-30(A)	MW-30 (A)	7/20/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-30(A)	MW-30 (A)	7/20/2004						
MW-31(A)	BM-31 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-31(A)	BM-31 (A)	10/16/2003						
MW-31(A)	MW-31 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-31(A)	MW-31 (A)	10/16/2003						
MW-31(A)	MW-31 (A)	1/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-31(A)	MW-31 (A)	1/12/2004						
MW-31(A)	BM-31 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-31(A)	BM-31 (A)	4/13/2004						
MW-31(A)	MW-31 (A)	4/13/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.1 U
MW-31(A)	MW-31 (A)	4/13/2004						

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Dibenzo(a,h) anthracene ug/L	Fluoranthene ug/L
MW-31(A)	MW-31 (A)	7/20/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-31(A)	MW-31 (A)	7/20/2004						
MW-32(A)	MW-32(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-32(A)	MW-32(A)	10/14/2003						
MW-32(A)	MW-32 (A)	1/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-32(A)	MW-32 (A)	1/12/2004						
MW-32(A)	MW-32 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-32(A)	MW-32 (A)	4/13/2004						
MW-32(A)	MW-32 (A)	7/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-32(A)	MW-32 (A)	7/19/2004						
MW-33(A)	MW-33(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-33(A)	MW-33(A)	10/14/2003						
MW-33(A)	MW-33 (A)	1/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-33(A)	MW-33 (A)	1/12/2004						
MW-33(A)	MW-33 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-33(A)	MW-33 (A)	4/13/2004						
MW-33(A)	MW-33 (A)	7/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-33(A)	MW-33 (A)	7/19/2004						
MW-34(A)	MW-34(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-34(A)	MW-34(A)	10/14/2003						
MW-34(A)	MW-34 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-34(A)	MW-34 (A)	1/13/2004						
MW-34(A)	MW-34 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-34(A)	MW-34 (A)	4/14/2004						
MW-34(A)	MW-34 (A)	7/20/2004	0.0267	0.05 U	0.0261	0.0306	0.0111	0.05 U
MW-34(A)	MW-34 (A)	7/20/2004						
MW-35(A)	MW-35 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-35(A)	MW-35 (A)	10/16/2003						
MW-35(A)	MW-35 (A)	1/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-35(A)	MW-35 (A)	1/16/2004						
MW-35(A)	MW-35 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-35(A)	MW-35 (A)	4/13/2004						
MW-35(A)	MW-35 (A)	7/20/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-35(A)	MW-35 (A)	7/20/2004						
MW-36(A)	MW-36(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-36(A)	MW-36(A)	10/21/2003						

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-36(A)	MW-36 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-36(A)	MW-36 (A)	1/14/2004						
MW-36(A)	MW-36 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-36(A)	MW-36 (A)	4/14/2004						
MW-36(A)	MW-36 (A)	7/22/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-36(A)	MW-36 (A)	7/22/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-36(A)	MW-36 (A)	7/22/2004						
MW-37(A)	MW-37 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-37(A)	MW-37 (A)	10/17/2003						
MW-38(A)	MW-38(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-38(A)	MW-38(A)	10/21/2003						
MW-38(A)	MW-38 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-38(A)	MW-38 (A)	1/14/2004						
MW-38(A)	MW-38 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-38(A)	MW-38 (A)	4/14/2004						
MW-38(A)	MW-38 (A)	7/22/2004	0.02 U	0.05 U	0.02 U	0.0412	0.01 U	0.05 U
MW-38(A)	MW-38 (A)	7/22/2004						
MW-39(A)	MW-39 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-39(A)	MW-39 (A)	10/16/2003						
MW-39(A)	MW-39 (A)	1/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-39(A)	MW-39 (A)	1/16/2004						
MW-39(A)	MW-39 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-39(A)	MW-39 (A)	4/14/2004						
MW-39(A)	MW-39 (A)	7/21/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-39(A)	MW-39 (A)	7/21/2004						
MW-40(A)	MW-40 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-40(A)	MW-40 (A)	10/17/2003						
MW-40(A)	MW-40(A)	1/20/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U	0.1 U
MW-40(A)	MW-40(A)	1/20/2004						
MW-40(A)	MW-40(A)	4/16/2004	0.04 U	0.2 U	0.04 U	0.04 U	0.04 U	0.2 U
MW-40(A)	MW-40(A)	4/16/2004						
MW-41(A)	MW-41(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.02 U	0.01 U	1.25 U
MW-41(A)	MW-41(A)	10/14/2003						
MW-42(A)	MW-42 (A)	10/15/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-42(A)	MW-42 (A)	10/15/2003						

TABLE 6**SVOCs IN GROUND WATER**

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-43(A)	MW-43(A)	10/13/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-43(A)	MW-43(A)	10/13/2003						
MW-43(A)	MW-43 (A)	1/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-43(A)	MW-43 (A)	1/12/2004						
MW-43(A)	MW-43 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-43(A)	MW-43 (A)	4/13/2004						
MW-43(A)	MW-43 (A)	7/21/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-43(A)	MW-43 (A)	7/21/2004						

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Dibenzo(a,h) anthracene ug/L	Fluoranthene ug/L
MW-44(A)	MW-44 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-44(A)	MW-44 (A)	10/17/2003						
MW-45(A)	MW-45 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-45(A)	MW-45 (A)	10/16/2003						
MW-45(A)	MW-45 (A)	1/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-45(A)	MW-45 (A)	1/16/2004						
MW-45(A)	MW-45 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-45(A)	MW-45 (A)	4/14/2004						
MW-45(A)	MW-45 (A)	7/21/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-45(A)	MW-45 (A)	7/21/2004						
MW-46(A)	MW-46(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-46(A)	MW-46(A)	10/14/2003						
MW-46(A)	MW-46(A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-46(A)	MW-46(A)	1/14/2004						
MW-46(A)	MW-46 (A)	4/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-46(A)	MW-46 (A)	4/12/2004						
MW-46(A)	MW-46 (A)	7/21/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-46(A)	MW-46 (A)	7/21/2004						
MW-47(A)	MW-47(A)	10/13/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-47(A)	MW-47(A)	10/13/2003						
MW-47(A)	MW-47 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-47(A)	MW-47 (A)	1/14/2004						
MW-47(A)	MW-47 (A)	4/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-47(A)	MW-47 (A)	4/12/2004						
MW-47(A)	MW-47 (A)	7/21/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-47(A)	MW-47 (A)	7/21/2004						
MW-48(A)	MW-48(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.0157	0.01 U	0.123
MW-48(A)	MW-48(A)	10/14/2003						
MW-48(A)	MW-48 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U	0.05 U
MW-48(A)	MW-48 (A)	1/14/2004						
MW-48(A)	MW-48 (A)	4/12/2004	0.0105	0.05 U	0.01 U	0.0122	0.01 U	0.0507
MW-48(A)	MW-48 (A)	4/12/2004						
MW-48(A)	MW-48 (A)	7/21/2004	0.0202	0.05 U	0.0176	0.0282	0.01 U	0.106
MW-48(A)	MW-48 (A)	7/21/2004						
R-1(M)	R-1(M)	10/22/2003	0.01 U	0.05 U	0.01 U	0.015	0.01 U	0.05 U
R-1(M)	R-1(M)	10/22/2003						

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.12	0.01 U	2 U	0.05 U	0.05 U
MW-1(F)	MW-1-082302	8/23/2002			0.1 U		
MW-1(F)	MW-1(F)	10/22/2003	0.05 U	0.01 U	2 U B	0.05 U	0.05 U
MW-1(F)	MW-1(F)	10/22/2003			0.947		
MW-1(F)	MW-1 (F)	1/15/2004	0.209	0.01 U	0.3 J	0.0523	0.05 U
MW-1(F)	MW-1 (F)	1/15/2004			1.5 U		
MW-1(F)	MW-1(F)	4/15/2004	0.134	0.01 U	0.72 J	0.05 U	0.05 U
MW-1(F)	MW-1(F)	4/15/2004			2.3 U		
MW-1(F)	MW-1 (F)	7/20/2004	0.0967	0.01 U	1.25 U	0.05 U	0.05 U
MW-1(F)	MW-1 (F)	7/20/2004			2.05		
MW-2(M)	MW-2(M)	6/19/2003	2.16	0.5 U	656	1.45	0.5 U
MW-2(M)	MW-2(M)	6/19/2003			524		
MW-2(M)	MW-2 (M)	10/15/2003	1.33	0.01 U	125	1.07	0.051
MW-2(M)	MW-2 (M)	10/15/2003			89.4		
MW-2(M)	MW-2 (M)	1/12/2004	0.78	0.02 U	4.08	0.669	0.1 U
MW-2(M)	MW-2 (M)	1/12/2004			3.42		
MW-2(M)	MW-2(M)	4/14/2004	0.88	0.1 U	334	0.748	0.5 U
MW-2(M)	MW-2(M)	4/14/2004			143		
MW-2(M)	MW-2 (M)	7/22/2004	1.83	0.1 U	132	1.55	0.5 U
MW-2(M)	MW-2 (M)	7/22/2004			179		
MW-6(M)	MW-6(M)	6/19/2003	0.1 U	0.1 U	2 U	0.1 U	0.1 U
MW-6(M)	MW-6(M)	6/19/2003			0.1 U		
MW-6(M)	MW-6(M)	10/22/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-6(M)	MW-6(M)	10/22/2003			0.05 U		
MW-6(M)	MW-6 (M)	1/12/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-6(M)	MW-6 (M)	1/12/2004			0.4		
MW-6(M)	MW-6 (M)	4/13/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-6(M)	MW-6 (M)	4/13/2004			0.05 U		
MW-6(M)	MW-6 (M)	7/19/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-6(M)	MW-6 (M)	7/19/2004			0.05 U		
MW-7(M)	BM-7(M)	6/19/2003	0.1 U	0.1 U	2 U	0.1 U	0.1 U
MW-7(M)	BM-7(M)	6/19/2003			0.1 U		
MW-7(M)	MW-7(M)	6/19/2003	0.1 U	0.1 U	2 U	0.1 U	0.1 U
MW-7(M)	MW-7(M)	6/19/2003			0.1 U		
MW-7(M)	MW-7(M)	10/13/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-7(M)	MW-7(M)	10/13/2003			0.05 U		
MW-7(M)	MW-7 (M)	1/12/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-7(M)	MW-7 (M)	1/12/2004			0.05 U		

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-7(M)	MW-7 (M)	4/12/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-7(M)	MW-7 (M)	4/12/2004			0.05 U		
MW-7(M)	MW-7 (M)	7/19/2004	0.05 U	0.01 U	0.26 J	0.05 U	0.05 U
MW-7(M)	MW-7 (M)	7/19/2004			0.0868		
MW-10(M)	MW-10(M)	6/19/2003	2 U	0.5 U	20.6	0.5 U	0.5 U
MW-10(M)	MW-10(M)	6/19/2003			16.3		
MW-10(M)	MW-10 (M)	10/15/2003	0.238	0.0408	65.3	0.104	0.0589
MW-10(M)	MW-10 (M)	10/15/2003			12		
MW-10(M)	MW-10 (M)	1/13/2004	1 U	0.01 U	3 U	0.05 U	0.05 U
MW-10(M)	MW-10 (M)	1/13/2004			1.64		
MW-10(M)	MW-10 (M)	4/13/2004	0.187	0.02 U	5.07	0.1 U	0.1 U
MW-10(M)	MW-10 (M)	4/13/2004			5 U		
MW-10(M)	MW-10 (M)	7/19/2004	0.154	0.01 U	2.57	0.05 U	0.05 U
MW-10(M)	MW-10 (M)	7/19/2004			2.5 U		
MW-11(M)	MW-11(M)	6/19/2003	0.1 U	0.1 U	2 U	0.1 U	0.1 U
MW-11(M)	MW-11(M)	6/19/2003			0.35 U		
MW-11(M)	MW-11 (M)	10/15/2003	0.05 U	0.01 U	0.66 J	0.05 U	0.05 U
MW-11(M)	MW-11 (M)	10/15/2003			0.4 U		
MW-11(M)	MW-11 (M)	1/13/2004	0.05 U	0.01 U	0.325 U	0.05 U	0.05 U
MW-11(M)	MW-11 (M)	1/13/2004			2 U		
MW-11(M)	MW-11 (M)	4/13/2004	0.05 U	0.01 U	0.25 U	0.05 U	0.05 U
MW-11(M)	MW-11 (M)	4/13/2004			0.51 J		
MW-11(M)	MW-11 (M)	7/21/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-11(M)	MW-11 (M)	7/21/2004			0.11 U		
MW-12(A)	MW-12(A)	10/22/2003	0.05 U	0.01 U	2 U B	0.05 U	0.05 U
MW-12(A)	MW-12(A)	10/22/2003			0.05 U		
MW-12(A)	MW-12 (A)	1/15/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-12(A)	MW-12 (A)	1/15/2004			2 U		
MW-12(A)	MW-12(A)	4/16/2004	0.05 U	0.01 U	0.0873	0.05 U	0.05 U
MW-12(A)	MW-12(A)	4/16/2004			2 U		
MW-12(A)	MW-12 (A)	7/22/2004	0.05 U	0.01 U	0.0584	0.05 U	0.05 U
MW-12(A)	MW-12 (A)	7/22/2004			2 U		
MW-13(A)	MW-13(A)	10/22/2003	0.05 U	0.01 U	122	0.05 U	0.05 U
MW-13(A)	MW-13(A)	10/22/2003			65.4		
MW-13(A)	MW-13 (A)	1/15/2004	0.1 U	0.02 U	75.7	0.1 U	0.1 U
MW-13(A)	MW-13 (A)	1/15/2004			223		
MW-13(A)	MW-13(A)	4/16/2004	0.1 U	0.02 U	282	0.1 U	0.1 U

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Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-13(A)	MW-13(A)	4/16/2004			94.5		
MW-13(A)	MW-13 (A)	7/22/2004	0.5 U	0.1 U	118	0.5 U	0.5 U
MW-13(A)	MW-13 (A)	7/22/2004			122		
MW-14(A)	MW-14(A)	10/21/2003	0.05 U	0.01 U	2 U B	0.05 U	0.05 U
MW-14(A)	MW-14(A)	10/21/2003			0.977		
MW-14(A)	MW-14 (A)	1/15/2004	0.05 U	0.01 U	0.19 J	0.05 U	0.05 U
MW-14(A)	MW-14 (A)	1/15/2004			0.05 U		
MW-14(A)	MW-14(A)	4/16/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-14(A)	MW-14(A)	4/16/2004			2 U		
MW-14(A)	MW-14 (A)	7/23/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-14(A)	MW-14 (A)	7/23/2004			0.0668		
MW-15(A)	MW-15(A)	10/20/2003	0.0941	0.01 U	2.11 J,B	0.106	0.05 U
MW-15(A)	MW-15(A)	10/20/2003			1.28		
MW-16(A)	MW-16(A)	10/20/2003	0.05 U	0.01 U	2 U B	0.05 U	0.05 U
MW-16(A)	MW-16(A)	10/20/2003			0.35 U		
MW-16(A)	MW-16(A)	1/19/2004	0.05 U	0.01 U	0.28 J	0.05 U	0.05 U
MW-16(A)	MW-16(A)	1/19/2004			0.15 U		
MW-16(A)	MW-16(A)	4/15/2004	0.05 U	0.01 U	0.86 J	0.05 U	0.05 U
MW-16(A)	MW-16(A)	4/15/2004			0.45 U		
MW-16(A)	MW-16 (A)	7/22/2004	0.05 U	0.01 U	0.74	0.05 U	0.05 U
MW-16(A)	MW-16 (A)	7/22/2004			0.49 J		
MW-17 (A)	BM-17 (A)	7/22/2004	0.05 U	0.01 U	0.68 J	0.05 U	0.05 U
MW-17 (A)	BM-17 (A)	7/22/2004			0.246		
MW-17(A)	MW-17 (A)	10/17/2003	0.05 U	0.01 U	2.37	0.05 U	0.05 U
MW-17(A)	MW-17 (A)	10/17/2003			4.88		
MW-17(A)	BM-17(A)	1/19/2004	0.05 U	0.01 U	19.5	0.05 U	0.05 U
MW-17(A)	BM-17(A)	1/19/2004			0.125 U		
MW-17(A)	MW-17(A)	1/19/2004	0.05 U	0.01 U	19	0.05 U	0.05 U
MW-17(A)	MW-17(A)	1/19/2004			0.25 U		
MW-17(A)	MW-17(A)	4/15/2004	0.05 U	0.01 U	15.6	0.05 U	0.05 U
MW-17(A)	MW-17(A)	4/15/2004			5.04		
MW-17(A)	MW-17 (A)	7/22/2004	0.05 U	0.01 U	0.649	0.05 U	0.05 U
MW-17(A)	MW-17 (A)	7/22/2004			0.66 J		
MW-18(A)	MW-18(A)	10/21/2003	0.22	0.01 U	4 U B	0.05 U	0.05 U
MW-18(A)	MW-18(A)	10/21/2003			0.44		
MW-18(A)	MW-18(A)	1/19/2004	0.39	0.01 U	1.53 J	0.05 U	0.05 U

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Astoria, Oregon

Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-18(A)	MW-18(A)	1/19/2004			0.688		
MW-18(A)	MW-18(A)	4/15/2004	0.197	0.01 U	0.119	0.05 U	0.05 U
MW-18(A)	MW-18(A)	4/15/2004			0.99 J		
MW-18(A)	MW-18 (A)	7/21/2004	0.113	0.01 U	0.52 J	0.05 U	0.05 U
MW-18(A)	MW-18 (A)	7/21/2004			0.483		
MW-19(A)	BM-19(A)	10/20/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-19(A)	BM-19(A)	10/20/2003			0.05 U		
MW-19(A)	MW-19(A)	10/20/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-19(A)	MW-19(A)	10/20/2003			0.05 U		
MW-19(A)	MW-19 (A)	1/13/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-19(A)	MW-19 (A)	1/13/2004			2 U		
MW-19(A)	MW-19(A)	4/15/2004	0.05 U	0.01 U	0.128	0.05 U	0.05 U
MW-19(A)	MW-19(A)	4/15/2004			2 U		
MW-19(A)	BM-19 (A)	7/20/2004	0.05 U	0.01 U	0.168	0.05 U	0.05 U
MW-19(A)	BM-19 (A)	7/20/2004			0.92 J		
MW-19(A)	MW-19 (A)	7/20/2004	0.05 U	0.01 U	1.09 J	0.05 U	0.05 U
MW-19(A)	MW-19 (A)	7/20/2004			0.15		
MW-20(A)	MW-20(A)	10/20/2003	0.434	0.01 U	11.1	0.0697	0.05 U
MW-20(A)	MW-20(A)	10/20/2003			3.93		
MW-20(A)	MW-20 (A)	1/13/2004	0.527	0.01 U	9.6	0.0981	0.05 U
MW-20(A)	MW-20 (A)	1/13/2004			36.5		
MW-20(A)	MW-20(A)	4/15/2004	0.312	0.02 U	0.8 U	0.1 U	0.1 U
MW-20(A)	MW-20(A)	4/15/2004			1.94		
MW-20(A)	MW-20 (A)	7/20/2004	0.504	0.02 U	2.77	0.128	0.1 U
MW-20(A)	MW-20 (A)	7/20/2004			5.12		
MW-21(A)	MW-21(A)	10/20/2003	0.327	0.01 U	3.04	0.09 U	0.05 U
MW-21(A)	MW-21(A)	10/20/2003			1.83		
MW-21(A)	BM-21 (A)	1/13/2004	0.374	0.01 U	1.75	0.0902	0.05 U
MW-21(A)	BM-21 (A)	1/13/2004			3.76		
MW-21(A)	MW-21 (A)	1/13/2004	0.256	0.01 U	0.765	0.05 U	0.05 U
MW-21(A)	MW-21 (A)	1/13/2004			4.01		
MW-21(A)	MW-21(A)	4/16/2004	0.5 U	0.02 U	1.27	0.5 U	0.1 U
MW-21(A)	MW-21(A)	4/16/2004			1.11 J		
MW-21(A)	MW-21 (A)	7/20/2004	0.516	0.01 U	2.96	0.108	0.05 U
MW-21(A)	MW-21 (A)	7/20/2004			2.09		
MW-22(A)	MW-22 (A)	10/16/2003	0.05 U	0.01 U	2.61	0.05 U	0.05 U
MW-22(A)	MW-22 (A)	10/16/2003			40.5		

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Astoria, Oregon

Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-22(A)	MW-22(A)	1/19/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-22(A)	MW-22(A)	1/19/2004			0.0931		
MW-22(A)	MW-22(A)	4/15/2004	0.05 U	0.01 U	0.0757	0.05 U	0.05 U
MW-22(A)	MW-22(A)	4/15/2004			0.32		
MW-22(A)	MW-22 (A)	7/20/2004	0.05 U	0.01 U	0.93	0.05 U	0.05 U
MW-22(A)	MW-22 (A)	7/20/2004			0.81 J		
MW-23(A)	MW-23(A)	10/20/2003	0.05 U	0.01 U	0.0617	0.05 U	0.05 U
MW-23(A)	MW-23(A)	10/20/2003			2 U		
MW-23(A)	MW-23 (A)	1/15/2004	0.05 U	0.01 U	0.225 U	0.05 U	0.05 U
MW-23(A)	MW-23 (A)	1/15/2004			2 U		
MW-23(A)	BM-23(A)	4/15/2004	0.05 U	0.01 U	1.21	0.05 U	0.05 U
MW-23(A)	BM-23(A)	4/15/2004			7.47		
MW-23(A)	MW-23(A)	4/15/2004	0.05 U	0.01 U	9.17	0.05 U	0.05 U
MW-23(A)	MW-23(A)	4/15/2004			1.14		
MW-23(A)	MW-23 (A)	7/20/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-23(A)	MW-23 (A)	7/20/2004			0.0525		
MW-24(A)	MW-24(A)	10/21/2003	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-24(A)	MW-24(A)	10/21/2003			2 U B		
MW-24(A)	MW-24 (A)	1/15/2004	0.05 U	0.01 U	114	0.05 U	0.05 U
MW-24(A)	MW-24 (A)	1/15/2004			44.6		
MW-24(A)	MW-24(A)	4/14/2004	0.05 U	0.01 U	20.8	0.05 U	0.05 U
MW-24(A)	MW-24(A)	4/14/2004			40.9		
MW-24(A)	MW-24 (A)	7/22/2004	0.05 U	0.01 U	23	0.05 U	0.05 U
MW-24(A)	MW-24 (A)	7/22/2004			13.4		
MW-26(A)	MW-26 (A)	10/17/2003	5 U	0.01 U	280	5 U	0.05 U
MW-26(A)	MW-26 (A)	10/17/2003			107		
MW-26(A)	MW-26 (A)	1/15/2004	0.0718	0.01 U	564	0.05 U	0.05 U
MW-26(A)	MW-26 (A)	1/15/2004			1030		
MW-26(A)	MW-26(A)	4/14/2004	0.0595	0.01 U	801	0.05 U	0.05 U
MW-26(A)	MW-26(A)	4/14/2004			464		
MW-26(A)	MW-26 (A)	7/22/2004	2.5 U	0.5 U	869	2.5 U	2.5 U
MW-26(A)	MW-26 (A)	7/22/2004			534		
MW-27(A)	MW-27(A)	10/21/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-27(A)	MW-27(A)	10/21/2003			0.158		
MW-27(A)	MW-27 (A)	1/14/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-27(A)	MW-27 (A)	1/14/2004			0.0512		
MW-27(A)	MW-27 (A)	4/14/2004	0.05 U	0.01 U	0.0763	0.05 U	0.05 U

TABLE 6

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Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-27(A)	MW-27 (A)	4/14/2004			2 U		
MW-27(A)	MW-27 (A)	7/22/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-27(A)	MW-27 (A)	7/22/2004			0.125 U		
MW-28(A)	MW-28 (A)	10/17/2003	5 U	0.01 U	157	5 U	0.05 U
MW-28(A)	MW-28 (A)	10/17/2003			112		
MW-28(A)	MW-28(A)	1/19/2004	0.076	0.01 U	398	0.07	0.05 U
MW-28(A)	MW-28(A)	1/19/2004			78.4		
MW-28(A)	MW-28(A)	4/14/2004	0.0763	0.01 U	118	0.0564	0.05 U
MW-28(A)	MW-28(A)	4/14/2004			66.9		
MW-28(A)	MW-28 (A)	7/23/2004	0.5 U	0.1 U	68.6	0.5 U	0.5 U
MW-28(A)	MW-28 (A)	7/23/2004			113		
MW-29(A)	MW-29(A)	10/21/2003	0.0811	0.01 U	1340	0.0638	0.05 U
MW-29(A)	MW-29(A)	10/21/2003			1640		
MW-29(A)	MW-29(A)	1/19/2004	0.101	0.01 U	1310	0.0802	0.05 U
MW-29(A)	MW-29(A)	1/19/2004			867		
MW-29(A)	MW-29(A)	4/16/2004	0.1 U	0.02 U	806	0.1 U	0.1 U
MW-29(A)	MW-29(A)	4/16/2004			1000		
MW-29(A)	MW-29 (A)	7/22/2004	2.5 U	0.5 U	1360	2.5 U	2.5 U
MW-29(A)	MW-29 (A)	7/22/2004			1040		
MW-30(A)	MW-30 (A)	10/16/2003	0.0569	0.01 U	531	0.05 U	0.05 U
MW-30(A)	MW-30 (A)	10/16/2003			1130		
MW-30(A)	MW-30 (A)	1/16/2004	0.0613	0.01 U	1200	0.05 U	0.05 U
MW-30(A)	MW-30 (A)	1/16/2004			696		
MW-30(A)	MW-30 (A)	4/13/2004	0.05 U	0.01 U	1030	0.05 U	0.05 U
MW-30(A)	MW-30 (A)	4/13/2004			381		
MW-30(A)	MW-30 (A)	7/20/2004	0.0577	0.01 U	1240	0.0513	0.05 U
MW-30(A)	MW-30 (A)	7/20/2004			1130		
MW-31(A)	BM-31 (A)	10/16/2003	0.0515	0.01 U	15.3 J	0.05 U	0.05 U
MW-31(A)	BM-31 (A)	10/16/2003			8.36		
MW-31(A)	MW-31 (A)	10/16/2003	0.0582	0.01 U	10	0.05 U	0.05 U
MW-31(A)	MW-31 (A)	10/16/2003			16.2		
MW-31(A)	MW-31 (A)	1/12/2004	0.0661	0.01 U	9.96	0.05 U	0.05 U
MW-31(A)	MW-31 (A)	1/12/2004			13.5		
MW-31(A)	BM-31 (A)	4/13/2004	0.05 U	0.01 U	116	0.05 U	0.05 U
MW-31(A)	BM-31 (A)	4/13/2004			67.6		
MW-31(A)	MW-31 (A)	4/13/2004	0.1 U	0.02 U	64.1	0.1 U	0.1 U
MW-31(A)	MW-31 (A)	4/13/2004			145		

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Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-31(A)	MW-31 (A)	7/20/2004	0.05 U	0.01 U	167	0.05 U	0.05 U
MW-31(A)	MW-31 (A)	7/20/2004			191		
MW-32(A)	MW-32(A)	10/14/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-32(A)	MW-32(A)	10/14/2003			0.05 U		
MW-32(A)	MW-32 (A)	1/12/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-32(A)	MW-32 (A)	1/12/2004			2 U		
MW-32(A)	MW-32 (A)	4/13/2004	0.05 U	0.01 U	0.075 U	0.05 U	0.05 U
MW-32(A)	MW-32 (A)	4/13/2004			2 U		
MW-32(A)	MW-32 (A)	7/19/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-32(A)	MW-32 (A)	7/19/2004			0.05 U		
MW-33(A)	MW-33(A)	10/14/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-33(A)	MW-33(A)	10/14/2003			0.07 U		
MW-33(A)	MW-33 (A)	1/12/2004	0.05 U	0.01 U	0.175 U B	0.05 U	0.05 U
MW-33(A)	MW-33 (A)	1/12/2004			0.19 J		
MW-33(A)	MW-33 (A)	4/13/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-33(A)	MW-33 (A)	4/13/2004			0.65 U		
MW-33(A)	MW-33 (A)	7/19/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-33(A)	MW-33 (A)	7/19/2004			0.825 U		
MW-34(A)	MW-34(A)	10/14/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-34(A)	MW-34(A)	10/14/2003			0.0623		
MW-34(A)	MW-34 (A)	1/13/2004	0.05 U	0.01 U	0.116	0.05 U	0.05 U
MW-34(A)	MW-34 (A)	1/13/2004			2 U		
MW-34(A)	MW-34 (A)	4/14/2004	0.05 U	0.01 U	0.162	0.05 U	0.05 U
MW-34(A)	MW-34 (A)	4/14/2004			2 U		
MW-34(A)	MW-34 (A)	7/20/2004	0.05 U	0.012	2 U	0.05 U	0.05 U
MW-34(A)	MW-34 (A)	7/20/2004			0.05 U		
MW-35(A)	MW-35 (A)	10/16/2003	0.05 U	0.01 U	1.04 J	0.05 U	0.05 U
MW-35(A)	MW-35 (A)	10/16/2003			0.124		
MW-35(A)	MW-35 (A)	1/16/2004	0.05 U	0.01 U	0.31 J	0.05 U	0.05 U
MW-35(A)	MW-35 (A)	1/16/2004			0.349		
MW-35(A)	MW-35 (A)	4/13/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-35(A)	MW-35 (A)	4/13/2004			2 U		
MW-35(A)	MW-35 (A)	7/20/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-35(A)	MW-35 (A)	7/20/2004			0.05 U		
MW-36(A)	MW-36(A)	10/21/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-36(A)	MW-36(A)	10/21/2003			0.05 U		

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Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-36(A)	MW-36 (A)	1/14/2004	0.05 U	0.01 U	0.68 J	0.05 U	0.05 U
MW-36(A)	MW-36 (A)	1/14/2004			0.05 U		
MW-36(A)	MW-36 (A)	4/14/2004	0.05 U	0.01 U	0.84 J	0.05 U	0.05 U
MW-36(A)	MW-36 (A)	4/14/2004			0.214		
MW-36(A)	MW-36 (A)	7/22/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-36(A)	MW-36 (A)	7/22/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-36(A)	MW-36 (A)	7/22/2004			2 U		
MW-37(A)	MW-37 (A)	10/17/2003	0.05 U	0.01 U	21.5	0.05 U	0.05 U
MW-37(A)	MW-37 (A)	10/17/2003			11.1		
MW-38(A)	MW-38(A)	10/21/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-38(A)	MW-38(A)	10/21/2003			0.05 U		
MW-38(A)	MW-38 (A)	1/14/2004	0.05 U	0.01 U	2 U B	0.05 U	0.05 U
MW-38(A)	MW-38 (A)	1/14/2004			0.121		
MW-38(A)	MW-38 (A)	4/14/2004	0.05 U	0.01 U	0.5 J	0.05 U	0.05 U
MW-38(A)	MW-38 (A)	4/14/2004			0.05 U		
MW-38(A)	MW-38 (A)	7/22/2004	0.05 U	0.01 U	0.48 J	0.05 U	0.05 U
MW-38(A)	MW-38 (A)	7/22/2004			0.05 U		
MW-39(A)	MW-39 (A)	10/16/2003	2.24	0.01 U	17.7	0.806	0.05 U
MW-39(A)	MW-39 (A)	10/16/2003			22.8		
MW-39(A)	MW-39 (A)	1/16/2004	1.04	0.01 U	23.4	0.629	0.05 U
MW-39(A)	MW-39 (A)	1/16/2004			17.3		
MW-39(A)	MW-39 (A)	4/14/2004	0.633	0.01 U	18.7	0.357	0.05 U
MW-39(A)	MW-39 (A)	4/14/2004			4.14		
MW-39(A)	MW-39 (A)	7/21/2004	1.67	0.01 U	13.8	0.631	0.05 U
MW-39(A)	MW-39 (A)	7/21/2004			10.7		
MW-40(A)	MW-40 (A)	10/17/2003	0.618	0.01 U	82.5	0.317	0.05 U
MW-40(A)	MW-40 (A)	10/17/2003			43.8		
MW-40(A)	MW-40(A)	1/20/2004	0.72	0.02 U	1220	1.11	0.1 U
MW-40(A)	MW-40(A)	1/20/2004			682		
MW-40(A)	MW-40(A)	4/16/2004	1.16	0.04 U	1500	2.13	0.2 U
MW-40(A)	MW-40(A)	4/16/2004			850		
MW-41(A)	MW-41(A)	10/14/2003	4.97	0.01 U	105	6.93	0.2
MW-41(A)	MW-41(A)	10/14/2003			82.3		
MW-42(A)	MW-42 (A)	10/15/2003	2.56	0.01 U	141	2.16	0.05 U
MW-42(A)	MW-42 (A)	10/15/2003			190		

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-43(A)	MW-43(A)	10/13/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-43(A)	MW-43(A)	10/13/2003			0.05 U		
MW-43(A)	MW-43 (A)	1/12/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-43(A)	MW-43 (A)	1/12/2004			0.05 U		
MW-43(A)	MW-43 (A)	4/13/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-43(A)	MW-43 (A)	4/13/2004			0.05 U		
MW-43(A)	MW-43 (A)	7/21/2004	0.05 U	0.01 U	0.0605	0.05 U	0.05 U
MW-43(A)	MW-43 (A)	7/21/2004			2 U		

TABLE 6

SVOCs IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Fluorene ug/L	Indeno(1,2,3- cd) pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Pyrene ug/L
MW-44(A)	MW-44 (A)	10/17/2003	0.362	0.01 U	1050	0.44	0.05 U
MW-44(A)	MW-44 (A)	10/17/2003			696		
MW-45(A)	MW-45 (A)	10/16/2003	0.05 U	0.01 U	1.11 J	0.05 U	0.05 U
MW-45(A)	MW-45 (A)	10/16/2003			0.0896		
MW-45(A)	MW-45 (A)	1/16/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-45(A)	MW-45 (A)	1/16/2004			0.05 U		
MW-45(A)	MW-45 (A)	4/14/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-45(A)	MW-45 (A)	4/14/2004			0.0798		
MW-45(A)	MW-45 (A)	7/21/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-45(A)	MW-45 (A)	7/21/2004			0.225 U		
MW-46(A)	MW-46(A)	10/14/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-46(A)	MW-46(A)	10/14/2003			0.05 U		
MW-46(A)	MW-46(A)	1/14/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-46(A)	MW-46(A)	1/14/2004			2 U		
MW-46(A)	MW-46 (A)	4/12/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-46(A)	MW-46 (A)	4/12/2004			0.0526		
MW-46(A)	MW-46 (A)	7/21/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-46(A)	MW-46 (A)	7/21/2004			2 U		
MW-47(A)	MW-47(A)	10/13/2003	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-47(A)	MW-47(A)	10/13/2003			0.05 U		
MW-47(A)	MW-47 (A)	1/14/2004	0.05 U	0.01 U	0.0783	0.05 U	0.05 U
MW-47(A)	MW-47 (A)	1/14/2004			2 U		
MW-47(A)	MW-47 (A)	4/12/2004	0.05 U	0.01 U	2 U	0.05 U	0.05 U
MW-47(A)	MW-47 (A)	4/12/2004			0.05 U		
MW-47(A)	MW-47 (A)	7/21/2004	0.05 U	0.01 U	0.05 U	0.05 U	0.05 U
MW-47(A)	MW-47 (A)	7/21/2004			2 U		
MW-48(A)	MW-48(A)	10/14/2003	0.204	0.01 U	0.76 J	0.345	0.0812
MW-48(A)	MW-48(A)	10/14/2003			0.538		
MW-48(A)	MW-48 (A)	1/14/2004	0.0763	0.01 U	0.397	0.131	0.05 U
MW-48(A)	MW-48 (A)	1/14/2004			2 U		
MW-48(A)	MW-48 (A)	4/12/2004	0.0569	0.01 U	0.244	0.101	0.0729
MW-48(A)	MW-48 (A)	4/12/2004			2 U		
MW-48(A)	MW-48 (A)	7/21/2004	0.0602	0.014	2 U	0.108	0.0883
MW-48(A)	MW-48 (A)	7/21/2004			0.457		
R-1(M)	R-1(M)	10/22/2003	0.05 U	0.01 U	2 U B	0.05 U	0.05 U
R-1(M)	R-1(M)	10/22/2003			0.0972		

TABLE 7

METALS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L	Mercury ug/L	Selenium ug/L	Silver ug/L
MW-1(F)	MW-1(F)	10/22/2003	9.53	254	0.24 J	23.7	25.5	0.2 U B	2.22	0.18 J
MW-1(F)	MW-1 (F)	1/15/2004	2.34	64.9	1 U	1 U	1 U B	0.2 U B	1.29	1 U
MW-1(F)	MW-1(F)	4/15/2004					1.89			
MW-1(F)	MW-1 (F)	7/20/2004					0.39 J			
MW-2(M)	MW-2(M)	6/19/2003					10 U			
MW-2(M)	MW-2 (M)	10/15/2003	21.6	32	1 U	4.98	8.72	0.2 U	1 U	1 U
MW-2(M)	MW-2 (M)	1/12/2004	17.2	13.8	1 U	1 U	1.77 J+,B	0.2 U B	1 U	1 U
MW-2(M)	MW-2(M)	4/14/2004					60.5			
MW-2(M)	MW-2 (M)	7/22/2004					21.7			
MW-6(M)	MW-6(M)	10/22/2003	13.3	20	1 U	2.07	7.57	0.2 U B	0.98 J	1 U
MW-6(M)	MW-6 (M)	1/12/2004	10.4	16	0.25 J	1.85	3.79 JB	0.288 J+,B	1.11	0.08 J
MW-6(M)	MW-6 (M)	4/13/2004					2.32			
MW-6(M)	MW-6 (M)	7/19/2004					0.67 J			
MW-7(M)	MW-7(M)	10/13/2003	12.6	32.3	1 U	3.54	8.4	0.2 U B	2 U	0.11 J
MW-7(M)	MW-7 (M)	1/12/2004	8.04	33.1	1 U	2.26	8.07	0.2 U	1 U	1 U
MW-7(M)	MW-7 (M)	4/12/2004					20.3			
MW-7(M)	MW-7 (M)	7/19/2004					6.63			
MW-10(M)	MW-10(M)	6/19/2003					10 U			
MW-10(M)	MW-10 (M)	10/15/2003	25.7	111	0.7 J	13.3	11.5	0.262 J+, B	1 U	1 U
MW-10(M)	MW-10 (M)	1/13/2004	25.3	42.6	1 U	1 U	1 U B	0.2 U	1 U	1 U
MW-10(M)	MW-10 (M)	4/13/2004					9.58			
MW-10(M)	MW-10 (M)	7/19/2004					3.53			
MW-11(M)	MW-11 (M)	10/15/2003	13.9	10.3	1 U	1 U	1 U	0.2 U	1 U	1 U
MW-11(M)	MW-11 (M)	1/13/2004	24	30.1	1 U	3.63	4.96 J+,B	0.2 U	1 U	1 U
MW-11(M)	MW-11 (M)	4/13/2004					2.23			
MW-11(M)	MW-11 (M)	7/21/2004					0.45 J			
MW-12(A)	MW-12(A)	10/22/2003	1 U	38	1 U	1 U	1 U	0.2 U	2.77	1 U
MW-12(A)	MW-12 (A)	1/15/2004	1 U	39.1	1 U	1 U	1 U B	0.2 U B	4.41	1 U
MW-12(A)	MW-12(A)	4/16/2004					2.08			
MW-12(A)	MW-12 (A)	7/22/2004					0.5 J			
MW-13(A)	MW-13(A)	10/22/2003	1 U	15	1 U	1 U	0.83 J	0.2 U	1 U	1 U
MW-13(A)	MW-13 (A)	1/15/2004	2.88	38.5	1 U	1 U	2.6	0.2 U B	0.96 J	1 U
MW-13(A)	MW-13(A)	4/16/2004					6.71			
MW-13(A)	MW-13 (A)	7/22/2004					3.18			
MW-14(A)	MW-14(A)	10/21/2003	1 U	28.3	1 U	1 U	1 U	0.2 U	1 U	1 U
MW-14(A)	MW-14 (A)	1/15/2004	1 U	26.7	1 U	1 U	1 U B	0.2 U B	1.05	1 U
MW-14(A)	MW-14(A)	4/16/2004					1.18			
MW-14(A)	MW-14 (A)	7/23/2004					1 U			
MW-15(A)	MW-15(A)	10/20/2003	1 U	33.6	1 U	1 U	0.47 J	0.2 U	1 U	1 U

TABLE 7

METALS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L	Mercury ug/L	Selenium ug/L	Silver ug/L
MW-16(A)	MW-16(A)	10/20/2003	2.13	39.6	1 U	1.09	0.97 J	0.2 U	1 U	1 U
MW-16(A)	MW-16(A)	1/19/2004	2.6	42.5	1 U	1.39	148	0.2 U	1.35 J+,B	1 U
MW-16(A)	MW-16(A)	4/15/2004					5.04			
MW-16(A)	MW-16 (A)	7/22/2004					1.31			
MW-17 (A)	BM-17 (A)	7/22/2004					1 U			
MW-17(A)	MW-17 (A)	10/17/2003	1 U	49.3	1 U	2.58	1.65	0.2 U	1 U	1 U
MW-17(A)	BM-17(A)	1/19/2004	1.22	33.2	1 U	1 U	1.97	0.2 U	1.27 J+,B	1 U
MW-17(A)	MW-17(A)	1/19/2004	1.77	32.6	1 U	1 U	2.03	0.2 U	1.07 J+,B	1 U
MW-17(A)	MW-17(A)	4/15/2004					3.22			
MW-17(A)	MW-17 (A)	7/22/2004					1 U			
MW-18(A)	MW-18(A)	10/21/2003	1 U	55.6	1 U	1.82	4.57	0.2 U	1 U	1 U
MW-18(A)	MW-18(A)	1/19/2004	1 U	67	1 U	4.06	7.81	0.2 U	1.28 J+,B	1 U
MW-18(A)	MW-18(A)	4/15/2004					14.2			
MW-18(A)	MW-18 (A)	7/21/2004					5.49			
MW-19(A)	BM-19(A)	10/20/2003	1.69	29	1 U	1 U	0.57 J	0.2 U	1 U	1 U
MW-19(A)	MW-19(A)	10/20/2003	1.32	29.9	1 U	1 U	0.5 J	0.2 U	1 U	1 U
MW-19(A)	MW-19 (A)	1/13/2004	0.97 J	14.1	1 U	1 U	1 U B	0.33	1 U	1 U
MW-19(A)	MW-19(A)	4/15/2004					12.3			
MW-19(A)	BM-19 (A)	7/20/2004					8.18			
MW-19(A)	MW-19 (A)	7/20/2004					8.02			
MW-20(A)	MW-20(A)	10/20/2003	1.29	23.7	1 U	1.42	1.45	0.2 U	1 U	1 U
MW-20(A)	MW-20 (A)	1/13/2004	2.15	35.8	1 U	2.4	3.88 J+,B	0.2 U	1 U	1 U
MW-20(A)	MW-20(A)	4/15/2004					9.24			
MW-20(A)	MW-20 (A)	7/20/2004					3.82			
MW-21(A)	MW-21(A)	10/20/2003	1.21	30.6	1 U	1.93	1.8	0.2 U	0.87 J	1 U
MW-21(A)	BM-21 (A)	1/13/2004	1 U	13.6	1 U	1 U	1 U B	0.157 J	1 U	0.07 J
MW-21(A)	MW-21 (A)	1/13/2004	1 U	13.4	1 U	1 U	1 U B	0.0836 J	1 U	1 U
MW-21(A)	MW-21(A)	4/16/2004					2.16			
MW-21(A)	MW-21 (A)	7/20/2004					0.62 J			
MW-22(A)	MW-22 (A)	10/16/2003	1.47	24.1	1 U	1.45	0.69 J	0.2 U	1 U	1 U
MW-22(A)	MW-22(A)	1/19/2004	1.69	26	1 U	2.03	1.35	0.2 U	1.17 J+,B	1 U
MW-22(A)	MW-22(A)	4/15/2004					4.73			
MW-22(A)	MW-22 (A)	7/20/2004					0.58 J			
MW-23(A)	MW-23(A)	10/20/2003	1 U	25.7	1 U	1 U	0.61 J	0.2 U	1 U	1 U
MW-23(A)	MW-23 (A)	1/15/2004	1 U	11.4	1 U	1 U	3.27	0.2 U B	1.23	1 U
MW-23(A)	BM-23(A)	4/15/2004					23.7			
MW-23(A)	MW-23(A)	4/15/2004					23.3			
MW-23(A)	MW-23 (A)	7/20/2004					1.56			
MW-24(A)	MW-24(A)	10/21/2003	2.15	57.9	1 U	0.89 J	0.93 J	0.2 U	0.6 J	1 U

TABLE 7

METALS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L	Mercury ug/L	Selenium ug/L	Silver ug/L
MW-24(A)	MW-24 (A)	1/15/2004	5.74	23.8	1 U	1.01	5.75	0.2 U B	1 U	1 U
MW-24(A)	MW-24(A)	4/14/2004					4.54			
MW-24(A)	MW-24 (A)	7/22/2004					1.09			
MW-26(A)	MW-26 (A)	10/17/2003	1.04 J	59.3	1 U	1.37	1.97	0.223 J+, B	1 U	1 U
MW-26(A)	MW-26 (A)	1/15/2004	8.61	22.9	1 U	1.57	5.98	0.2 U B	1 U	1 U
MW-26(A)	MW-26(A)	4/14/2004					4.03			
MW-26(A)	MW-26 (A)	7/22/2004					4.22			
MW-27(A)	MW-27(A)	10/21/2003	1	11.2	1 U	1 U	0.33 J	0.2 U	1.05	1 U
MW-27(A)	MW-27 (A)	1/14/2004	16.5	13.3	1 U	1 U	1 U B	0.2 U B	1 U	1 U
MW-27(A)	MW-27 (A)	4/14/2004					1 U			
MW-27(A)	MW-27 (A)	7/22/2004					0.24 J			
MW-28(A)	MW-28 (A)	10/17/2003	3.45 J	112	1 U	12.8	46.4	0.2 U	1 U	1 U
MW-28(A)	MW-28(A)	1/19/2004	3.11	60.8	1 U	6.18	19.8	0.2 U	1.3 J+,B	1 U
MW-28(A)	MW-28(A)	4/14/2004					101			
MW-28(A)	MW-28 (A)	7/23/2004					15.2			
MW-29(A)	MW-29(A)	10/21/2003	5.73	33.6	1 U	2.5	5.04	0.2 U	1 U	1 U
MW-29(A)	MW-29(A)	1/19/2004	6.82	28.5	1 U	2.25	7.74	0.2 U	1.23 J+,B	1 U
MW-29(A)	MW-29(A)	4/16/2004					12.7			
MW-29(A)	MW-29 (A)	7/22/2004					7.45			
MW-30(A)	MW-30 (A)	10/16/2003	7.95	65.4	1 U	6.53	3.7	0.248 J+, B	1 U	1 U
MW-30(A)	MW-30 (A)	1/16/2004	10.9	51.5	1 U	4.79	3.17	0.2 U B	1.06	1 U
MW-30(A)	MW-30 (A)	4/13/2004					17.3			
MW-30(A)	MW-30 (A)	7/20/2004					4.79			
MW-31(A)	BM-31 (A)	10/16/2003	13.9	27.1	1 U	0.96 J	0.26 J	0.2 U	1 U	1 U
MW-31(A)	MW-31 (A)	10/16/2003	13.3	26.5	1 U	0.91 J	0.56 J	0.2 U	1 U	1 U
MW-31(A)	MW-31 (A)	1/12/2004	13	46	1 U	2.85	3.02 J+,B	0.115 J	1 U	1 U
MW-31(A)	BM-31 (A)	4/13/2004					15.3			
MW-31(A)	MW-31 (A)	4/13/2004					11.1			
MW-31(A)	MW-31 (A)	7/20/2004					1.82			
MW-32(A)	MW-32(A)	10/14/2003	1.4	27.9	1 U	1.41	0.58 J	0.2 U B	2 U	1 U
MW-32(A)	MW-32 (A)	1/12/2004	2.29	11.9	1 U	1 U	1 U B	0.19 J	1 U	1 U
MW-32(A)	MW-32 (A)	4/13/2004					3.02			
MW-32(A)	MW-32 (A)	7/19/2004					0.92 J			
MW-33(A)	MW-33(A)	10/14/2003	21.6	18.2	1 U	0.94 J	0.41 J	0.2 U B	2 U	1 U
MW-33(A)	MW-33 (A)	1/12/2004	30.7	32.1	1 U	1.57	1.51 J+,B	0.0747 B	1 U	1 U
MW-33(A)	MW-33 (A)	4/13/2004					11.8			
MW-33(A)	MW-33 (A)	7/19/2004					0.62 J			
MW-34(A)	MW-34(A)	10/14/2003	1.42	36.7	1 U	3.05	1.32	0.2 U B	2 U	1 U
MW-34(A)	MW-34 (A)	1/13/2004	3.26	33.3	0.19 J	2.53	1.62 J+,B	0.2 U	1 U	1 U

TABLE 7

METALS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Arsenic,	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
			Total ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-34(A)	MW-34 (A)	4/14/2004					7.5			
MW-34(A)	MW-34 (A)	7/20/2004					1 U			
MW-35(A)	MW-35 (A)	10/16/2003	1.02	13.6	1 U	1.5	0.24 J	0.2 U	1 U	1 U
MW-35(A)	MW-35 (A)	1/16/2004	1.8	22.1	1 U	1.9	1.44	0.2 U B	1.49	1 U
MW-35(A)	MW-35 (A)	4/13/2004					5.11			
MW-35(A)	MW-35 (A)	7/20/2004					1.03			
MW-36(A)	MW-36(A)	10/21/2003	2.27	169	1 U	4.74	12.6	0.2 U	2.16	1 U
MW-36(A)	MW-36 (A)	1/14/2004	1 U	38.4	1 U	1.42	3.06	0.2 U B	1 U	1 U
MW-36(A)	MW-36 (A)	4/14/2004					26.8			
MW-36(A)	MW-36 (A)	7/22/2004					4.68			
MW-37(A)	MW-37 (A)	10/17/2003	1 U	27.5	1 U	0.93 J	0.58 J	0.2 U	1 U	1 U
MW-38(A)	MW-38(A)	10/21/2003	1 U	20.9	1 U	1 U	0.48 J	0.2 U	1 U	1 U
MW-38(A)	MW-38 (A)	1/14/2004	1 U	12.3	1 U	1 U	1.2 J+,B	0.2 U	1 U	1 U
MW-38(A)	MW-38 (A)	4/14/2004					8.28			
MW-38(A)	MW-38 (A)	7/22/2004					0.62 J			
MW-39(A)	MW-39 (A)	10/16/2003	1.65	7.54	1 U	1 U	0.19 J	0.2 U	1 U	1 U
MW-39(A)	MW-39 (A)	1/16/2004	2.29	11.2	1 U	0.88 J	1 U B	0.31 JB	0.9 J	1 U
MW-39(A)	MW-39 (A)	4/14/2004					1.12			
MW-39(A)	MW-39 (A)	7/21/2004					0.57 J			
MW-40(A)	MW-40 (A)	10/17/2003	3.81	46.2	1 U	5.42	2.95	0.2 U	1 U	1 U
MW-40(A)	MW-40(A)	1/20/2004	12.8	33.1	1 U	1 U	5.19	0.2 U	1.14 J+,B	1 U
MW-40(A)	MW-40(A)	4/16/2004					56.7			
MW-41(A)	MW-41(A)	10/14/2003	14.4	23.5	1 U	1 U	0.13 J	0.2 U B	2 U	1 U
MW-42(A)	MW-42 (A)	10/15/2003	37.2	43.6	1 U	4.66	2.75	0.2 U	0.71 J	1 U
MW-43(A)	MW-43(A)	10/13/2003	7.52	22.7	1 U	0.85 J	0.23 J	0.2 U B	2 U	1 U
MW-43(A)	MW-43 (A)	1/12/2004	11.6	31.2	1 U	1.89	2.18 J+,B	0.2 U B	1 U	1 U
MW-43(A)	MW-43 (A)	4/13/2004					0.51 J			
MW-43(A)	MW-43 (A)	7/21/2004					0.29 J			
MW-44(A)	MW-44 (A)	10/17/2003	12.2	14.7	1 U	0.85 J	0.86 J	0.2 U	1 U	1 U
MW-45(A)	MW-45 (A)	10/16/2003	6.55	8.55	1 U	1.11	0.54 J	0.2 U	1 U	1 U
MW-45(A)	MW-45 (A)	1/16/2004	1 U	8.37	1 U	1 U	1 U B	0.2 U	1.45	1 U
MW-45(A)	MW-45 (A)	4/14/2004					1.49			
MW-45(A)	MW-45 (A)	7/21/2004					0.8 J			
MW-46(A)	MW-46(A)	10/14/2003	1.25	15.6	1 U	60.6	1.41	0.2 U B	2 U	1 U
MW-46(A)	MW-46(A)	1/14/2004	3.11	26	1 U	16.5	2.17 J+,B	0.2 U	1 U	1 U
MW-46(A)	MW-46 (A)	4/12/2004					4.95			

TABLE 7

METALS IN GROUND WATER

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L	Mercury ug/L	Selenium ug/L	Silver ug/L
MW-46(A)	MW-46(A)	4/12/2004				34.9				
MW-46(A)	MW-46 (A)	7/21/2004				21.7	1.18			
MW-46(A)	MW-46 (A)	7/21/2004				28				
MW-47(A)	MW-47(A)	10/13/2003	1 U	19.5	1 U	1.65	0.57 J	0.2 U	2 U	1 U
MW-47(A)	MW-47 (A)	1/14/2004	4.14	26.6	1 U	2.34	3.14 J+,B	0.2 U	1 U	1 U
MW-47(A)	MW-47 (A)	4/12/2004					8.81			
MW-47(A)	MW-47(A)	4/12/2004				5.81				
MW-47(A)	MW-47 (A)	7/21/2004				0.97 J	15			
MW-47(A)	MW-47 (A)	7/21/2004				6.84				
MW-48(A)	MW-48(A)	10/14/2003	1 U	43.5	1 U	2.5	21.6	0.2 U	2 U	1 U
MW-48(A)	MW-48 (A)	1/14/2004	1.14	19.5	1 U	1 U	1 U J	0.2 U	1 U	1 U
MW-48(A)	MW-48 (A)	4/12/2004					33.5			
MW-48(A)	MW-48(A)	4/12/2004				3.45				
MW-48(A)	MW-48 (A)	7/21/2004				1 U	58.7			
MW-48(A)	MW-48 (A)	7/21/2004				6.91				
R-1(M)	R-1(M)	10/22/2003	3.56 J	12	1 U	0.99 J	4.01	0.2 U	1 U	1 U

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Sample ID	Sample Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1 (F)	1/15/2004	1.4	60.9	1 U	1 U	1 U B	0.2 U
MW-2(M)	MW-2 (M)	10/15/2003	19.3	11.8	1 U	1.37	2.03	0.2 U B
MW-6(M)	MW-6(M)	6/19/2003					10 U	
MW-6(M)	MW-6(M)	10/22/2003	13.3	12.4	1 U	1.32	0.27 J	0.038 J
MW-7(M)	BM-7(M)	6/19/2003					10 U	
MW-7(M)	MW-7(M)	6/19/2003					10 U	
MW-7(M)	MW-7(M)	10/13/2003	9.85	17.8	1 U	1 U	1 U	0.2 U B
MW-10(M)	MW-10 (M)	1/13/2004	26.4	38.2	1 U	1 U	0.37 J	0.2 U
MW-11(M)	MW-11(M)	6/19/2003					10 U	
MW-11(M)	MW-11 (M)	10/15/2003	14.8	10	0.14 J	1.02	0.24 J	0.2 U B
MW-12(A)	MW-12(A)	10/22/2003	1 U	39.5	1 U	1 U	0.24 J	0.2 U
MW-13(A)	MW-13(A)	10/22/2003	1 U	14.3	1 U	1.18	0.74 J	0.2 U
MW-14(A)	MW-14(A)	10/21/2003	1 U	27.7	1 U	1 U	0.21 J	0.2 U
MW-15(A)	MW-15(A)	10/20/2003	1 U	32.8	1 U	1 U	0.32 J	0.2 U
MW-16(A)	MW-16(A)	10/20/2003	1 U	25.4	1 U	1 U	0.34 J	0.2 U
MW-17(A)	MW-17 (A)	10/17/2003	1 U	36.2	1 U	1 U	0.1 J	0.2 U
MW-18(A)	MW-18(A)	10/21/2003	1 U	44.3	1 U	1 U	0.19 J	0.072 J
MW-19(A)	BM-19(A)	10/20/2003	1.88	26.4	1 U	1 U	0.14 J	0.2 U
MW-19(A)	MW-19(A)	10/20/2003	1.73	28.8	1 U	1 U	0.39 J	0.2 U
MW-20(A)	MW-20(A)	10/20/2003	1.18	15	1 U	1 U	0.22 J	0.2 U
MW-21(A)	MW-21(A)	10/20/2003	1 U	15.2	1 U	1 U	0.43 J	0.2 U

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Sample ID	Sample Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-22(A)	MW-22 (A)	10/16/2003	1 U	17	1 U	1.04	0.19 J	0.2 U B
MW-23(A)	MW-23(A)	10/20/2003	1 U	24.7	1 U	1 U	0.33 J	0.2 U
MW-24(A)	MW-24(A)	10/21/2003	2.43	57.2	1 U	1 U	0.33 J	0.2 U
MW-26(A)	MW-26 (A)	10/17/2003	1 U	52	1 U	1 U	1.16	0.2 U B
MW-27(A)	MW-27(A)	10/21/2003	0.99 J	11.9	0.1 J	1 U	0.3 J	0.2 U
MW-28(A)	MW-28 (A)	10/17/2003	1 U	38.1	1 U	1 U	1.02	0.2 U B
MW-29(A)	MW-29(A)	10/21/2003	5.97	19.7	1 U	1 U	3	0.088 J
MW-30(A)	MW-30 (A)	10/16/2003	6.93	27.6	1 U	1.25	0.44 J	0.2 U B
MW-31(A)	BM-31 (A)	10/16/2003	13.3	23.3	1 U	0.99 J	1 U	0.2 U
MW-31(A)	MW-31 (A)	10/16/2003	15.3	25.2	1 U	1.11	0.18 J	0.2 U B
MW-32(A)	MW-32(A)	10/14/2003	2.28	25	1 U	1 U	0.13 J	0.2 U
MW-33(A)	MW-33(A)	10/14/2003	18.2	15.5	1 U	1 U	0.14 J	0.2 U B
MW-34(A)	MW-34(A)	10/14/2003	1 U	23.5	1 U	1 U	0.14 J	0.2 U
MW-35(A)	MW-35 (A)	10/16/2003	1 U	13.2	1 U	0.92 J	1 U	0.2 U J
MW-36(A)	MW-36(A)	10/21/2003	1 U	82.7	1 U	1 U	0.98 J	0.2 U
MW-37(A)	MW-37 (A)	10/17/2003	1 U	24.8	1 U	2.03	0.41 J	0.2 U B
MW-38(A)	MW-38(A)	10/21/2003	1 U	20	1 U	1 U	0.24 J	0.2 U
MW-39(A)	MW-39 (A)	10/16/2003	1.79	6.83	1 U	0.86 J	0.19 J	0.2 U B

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Sample ID	Sample Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-40(A)	MW-40 (A)	10/17/2003	1.86	22.2	1 U	1.3	0.27 J	0.2 U B
MW-41(A)	MW-41(A)	10/14/2003	12.4	23	1 U	1 U	1 U	0.2 U B
MW-42(A)	MW-42 (A)	10/15/2003	35.6	20.2	1 U	1 U	0.48 J	0.2 U B
MW-43(A)	MW-43(A)	10/13/2003	7.34	23.4	1 U	1 U	0.14 J	0.2 U
MW-44(A)	MW-44 (A)	10/17/2003	11.9	13	1 U	1.09	0.29 J	0.2 U B
MW-45(A)	MW-45 (A)	10/16/2003	2.25	3.79	1 U	0.97 J	0.16 J	0.2 U
MW-46(A)	MW-46(A)	10/14/2003	1 U	9.1	1 U	54.3	0.29 J	0.2 U B
MW-47(A)	MW-47(A)	10/13/2003	1 U	17.4	1 U	1 U	0.18 J	0.2 U
MW-48(A)	MW-48(A)	10/14/2003	1 U	31.4	1 U	1 U	0.51 J	0.2 U J

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Selenium	Silver
			ug/L	ug/L
MW-1(F)	MW-1 (F)	1/15/2004	1.41	1 U
MW-2(M)	MW-2 (M)	10/15/2003	2 U B	1 U
MW-6(M)	MW-6(M)	6/19/2003		
MW-6(M)	MW-6(M)	10/22/2003	0.76 J	1 U
MW-7(M)	BM-7(M)	6/19/2003		
MW-7(M)	MW-7(M)	6/19/2003		
MW-7(M)	MW-7(M)	10/13/2003	0.93 J	1 U
MW-10(M)	MW-10 (M)	1/13/2004	1.19 J+,B	0.07 J
MW-11(M)	MW-11(M)	6/19/2003		
MW-11(M)	MW-11 (M)	10/15/2003	2 U B	1 U
MW-12(A)	MW-12(A)	10/22/2003	5 U B	1 U
MW-13(A)	MW-13(A)	10/22/2003	5 U B	1 U
MW-14(A)	MW-14(A)	10/21/2003	5 U B	1 U
MW-15(A)	MW-15(A)	10/20/2003	1 U	1 U
MW-16(A)	MW-16(A)	10/20/2003	1 U B	1 U
MW-17(A)	MW-17 (A)	10/17/2003	1 U B	1 U
MW-18(A)	MW-18(A)	10/21/2003	1 U B	1 U
MW-19(A)	BM-19(A)	10/20/2003	1 U B	1 U
MW-19(A)	MW-19(A)	10/20/2003	1 U B	1 U
MW-20(A)	MW-20(A)	10/20/2003	1 U	1 U
MW-21(A)	MW-21(A)	10/20/2003	1 U B	1 U

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Selenium ug/L	Silver ug/L
MW-22(A)	MW-22 (A)	10/16/2003	2 U B	1 U
MW-23(A)	MW-23(A)	10/20/2003	1 U	1 U
MW-24(A)	MW-24(A)	10/21/2003	1.27 J+,B	1 U
MW-26(A)	MW-26 (A)	10/17/2003	1 U B	1 U
MW-27(A)	MW-27(A)	10/21/2003	1.6 J+,B	1 U
MW-28(A)	MW-28 (A)	10/17/2003	1 U B	1 U
MW-29(A)	MW-29(A)	10/21/2003	5 U	1 U
MW-30(A)	MW-30 (A)	10/16/2003	2 U B	1 U
MW-31(A)	BM-31 (A)	10/16/2003	1 U	1 U
MW-31(A)	MW-31 (A)	10/16/2003	1 U B	1 U
MW-32(A)	MW-32(A)	10/14/2003	1 U	1 U
MW-33(A)	MW-33(A)	10/14/2003	1 U	1 U
MW-34(A)	MW-34(A)	10/14/2003	1 U	1 U
MW-35(A)	MW-35 (A)	10/16/2003	1 U	1 U
MW-36(A)	MW-36(A)	10/21/2003	2.61 J+,B	1 U
MW-37(A)	MW-37 (A)	10/17/2003	1 U B	1 U
MW-38(A)	MW-38(A)	10/21/2003	1.34 J+,B	1 U
MW-39(A)	MW-39 (A)	10/16/2003	1.11 J+, B	1 U

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Sample ID	Sample Date	Selenium	Silver
			ug/L	ug/L
MW-40(A)	MW-40 (A)	10/17/2003	1 U	1 U
MW-41(A)	MW-41(A)	10/14/2003	1 U	1 U
MW-42(A)	MW-42 (A)	10/15/2003	2 U B	1 U
MW-43(A)	MW-43(A)	10/13/2003	0.96 J	1 U
MW-44(A)	MW-44 (A)	10/17/2003	1 U B	1 U
MW-45(A)	MW-45 (A)	10/16/2003	1 U	1 U
MW-46(A)	MW-46(A)	10/14/2003	1 U	1 U
MW-47(A)	MW-47(A)	10/13/2003	1 U	1 U
MW-48(A)	MW-48(A)	10/14/2003	1 U	1 U

TABLE 9
ANIONS and CATIONS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Alkalinity, Total mgCaCO3/L	Calcium mg/L	Chemical Oxygen Demand mg/L	Chloride mg/L	Iron mg/L	Magnesium mg/L	Manganese mg/L
MW-1(F)	MW-1(F)	10/22/2003	490	119		17.5	46.6	46.8	10.5
MW-2(M)	MW-2(M)	6/19/2003			26.1		28.1		
MW-2(M)	MW-2 (M)	10/15/2003	116	23.4		16.8	39.3	11.1	1.69
MW-6(M)	MW-6(M)	6/19/2003			15.8		11.8		
MW-6(M)	MW-6 (M)	1/12/2004	130	15.7		16.5	29	11.1	2.32
MW-7(M)	BM-7(M)	6/19/2003			16.4		12.2		
MW-7(M)	MW-7(M)	6/19/2003			14.8		13		
MW-7(M)	MW-7(M)	10/13/2003	208	41.8		13.2	19.6	19.5	1.06
MW-10(M)	MW-10(M)	6/19/2003			30.6		47		
MW-10(M)	MW-10 (M)	10/15/2003	225	46.5		9.61	68.3	32.6	1.32
MW-11(M)	MW-11(M)	6/19/2003			9.51		25.7		
MW-11(M)	MW-11 (M)	10/15/2003	115	13.8		20.8	27.8	17.6	0.473
MW-12(A)	MW-12(A)	10/22/2003					0.87		
MW-12(A)	MW-12 (A)	1/15/2004	136	131		13.9	0.133 J	18.3	0.0127
MW-13(A)	MW-13(A)	10/22/2003	497	136		14.8	1.27	20.5	0.131
MW-14(A)	MW-14(A)	10/21/2003	132	110		12.9	0.348	18.3	0.245
MW-15(A)	MW-15(A)	10/20/2003					7.81		
MW-16(A)	MW-16(A)	10/20/2003					13.3		
MW-16(A)	MW-16(A)	1/19/2004	300	92.2		15.8	12	22	0.458
MW-17(A)	MW-17 (A)	10/17/2003	240	102		13.4	18.4	22.4	0.991
MW-18(A)	MW-18(A)	10/21/2003					20		
MW-18(A)	MW-18(A)	1/19/2004	332	67		13.2	28.6	28.1	1.53
MW-19(A)	BM-19(A)	10/20/2003					12.8		
MW-19(A)	MW-19(A)	10/20/2003					12.7		
MW-19(A)	MW-19 (A)	1/13/2004	92.7	19.7		12.6	3.01	10.4	0.162

TABLE 9
ANIONS and CATIONS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Alkalinity, Total mgCaCO3/L	Calcium mg/L	Chemical Oxygen Demand mg/L	Chloride mg/L	Iron mg/L	Magnesium mg/L	Manganese mg/L
MW-20(A)	MW-20(A)	10/20/2003	71.2	17.8		7.24	15.7	15	0.581
MW-21(A)	MW-21(A)	10/20/2003					25		
MW-21(A)	BM-21 (A)	1/13/2004	109	20.8		7.85	15.3	9.32	0.576
MW-21(A)	MW-21 (A)	1/13/2004	107	20.4		7.86	14.1	9.33	0.581
MW-22(A)	MW-22 (A)	10/16/2003					18.6		
MW-22(A)	MW-22(A)	1/19/2004	85	26.6		10.2	14.3	10	0.337
MW-23(A)	MW-23(A)	10/20/2003	90.3	37.8		11.5	6.21	11.2	0.293
MW-24(A)	MW-24(A)	10/21/2003	206	12.1		54.5	1.2	7.62	0.225
MW-26(A)	MW-26 (A)	10/17/2003					13.9		
MW-26(A)	MW-26 (A)	1/15/2004	127	21		12.3	34.6	7.66	1.39
MW-27(A)	MW-27(A)	10/21/2003					0.996		
MW-27(A)	MW-27 (A)	1/14/2004	34.4	12.5		10.2	33.3	5.72	0.294
MW-28(A)	MW-28 (A)	10/17/2003					58.5		
MW-28(A)	MW-28(A)	1/19/2004	138	46.9		10.7	48.3	14.5	1.61
MW-29(A)	MW-29(A)	10/21/2003					37.6		
MW-29(A)	MW-29(A)	1/19/2004	173	26.4		10.1	41.4	13.1	1.78
MW-30(A)	MW-30 (A)	10/16/2003	162	28		8.51	38.2	16.6	1.47
MW-31(A)	BM-31 (A)	10/16/2003	200	33.9		10.8	29.5	23.3	1.75
MW-31(A)	MW-31 (A)	10/16/2003	202	33.5		10.7	29.1	23.5	1.7
MW-32(A)	MW-32(A)	10/14/2003	153	12.4		26.7	3.24	24.4	0.11
MW-33(A)	MW-33(A)	10/14/2003	186	24.1		16.6	16.7	14.1	0.575
MW-34(A)	MW-34(A)	10/14/2003	179	31.6		19.1	5.5	26	0.324
MW-35(A)	MW-35 (A)	10/16/2003	45.7	9.06		16.6	5.93	6.62	0.206

TABLE 9
ANIONS and CATIONS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Alkalinity, Total mgCaCO ₃ /L	Calcium mg/L	Chemical Oxygen Demand mg/L	Chloride mg/L	Iron mg/L	Magnesium mg/L	Manganese mg/L
MW-36(A)	MW-36(A)	10/21/2003					15		
MW-36(A)	MW-36 (A)	1/14/2004	84	17.9		6.75	0.41	5.45	0.059
MW-37(A)	MW-37 (A)	10/17/2003					27.1		
MW-38(A)	MW-38(A)	10/21/2003	150	32.4		17.2	1.48	13	0.209
MW-39(A)	MW-39 (A)	10/16/2003					6.09		
MW-39(A)	MW-39 (A)	1/16/2004	63.7	11.8		9.7	12.8	5.05	0.146
MW-40(A)	MW-40 (A)	10/17/2003	190	28.4		10.4	42.5	24.9	1.44
MW-41(A)	MW-41(A)	10/14/2003	185	40.6		9.23	35	13.6	2.29
MW-42(A)	MW-42 (A)	10/15/2003	218	48.3		7.64	48.2	18.1	2.62
MW-43(A)	MW-43(A)	10/13/2003	91	25.9		9.31	6.25	5.58	0.598
MW-44(A)	MW-44 (A)	10/17/2003	90.8	17.1		14.6	36.8	5.1	0.54
MW-45(A)	MW-45 (A)	10/16/2003					10.4		
MW-45(A)	MW-45 (A)	1/16/2004	71.6	24.1		12.1	0.798	7.53	0.0577
MW-46(A)	MW-46(A)	10/14/2003	54	10.1		7.64	15.4	6.32	0.722
MW-47(A)	MW-47(A)	10/13/2003	36.1	7.89		11.6	0.49	8.34	0.0476
MW-48(A)	MW-48(A)	10/14/2003	83.3	18		11.6	25.7	10.4	0.872

TABLE 9
ANIONS and CATIONS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Nitrogen, Nitrate (as N) mg/L	Nitrogen, Nitrate- Nitrite mg/L	Potassium mg/L	Sodium mg/L	Sulfate mg/L	Total Dissolved Solids mg/L	Total Organic Carbon (TOC) mg/L
MW-1(F)	MW-1(F)	10/22/2003		1 U	8.54	96.3	168		
MW-2(M)	MW-2(M)	6/19/2003	0.1 U					138	4.61
MW-2(M)	MW-2 (M)	10/15/2003		2 U B	6.03	12.6	1 U B		
MW-6(M)	MW-6(M)	6/19/2003	0.1 U					163	4.07
MW-6(M)	MW-6 (M)	1/12/2004		0.5 U	4	21.9	1.43		
MW-7(M)	BM-7(M)	6/19/2003	0.1 U					244	3.96
MW-7(M)	MW-7(M)	6/19/2003	0.1 U					248	3.9
MW-7(M)	MW-7(M)	10/13/2003		0.149	6.69	14.3	5.76		
MW-10(M)	MW-10(M)	6/19/2003	0.1 U					330	7.59
MW-10(M)	MW-10 (M)	10/15/2003		2 U B	11.3	11.6	0.77 U B		
MW-11(M)	MW-11(M)	6/19/2003	0.1 U					182	1.92
MW-11(M)	MW-11 (M)	10/15/2003		2 U	8.13	8.56	2.36		
MW-12(A)	MW-12(A)	10/22/2003							
MW-12(A)	MW-12 (A)	1/15/2004		2.01	7.11	64	371		
MW-13(A)	MW-13(A)	10/22/2003		0.02 U	7.71	62.6	52.6		
MW-14(A)	MW-14(A)	10/21/2003		0.0472	7.41	51.4	353		
MW-15(A)	MW-15(A)	10/20/2003							
MW-16(A)	MW-16(A)	10/20/2003							
MW-16(A)	MW-16(A)	1/19/2004		0.107 J+,B	7.99	43.5	133		
MW-17(A)	MW-17 (A)	10/17/2003		2 U	11.8	56.4	204		
MW-18(A)	MW-18(A)	10/21/2003							
MW-18(A)	MW-18(A)	1/19/2004		0.05 U	11.1	45.4	24.2		
MW-19(A)	BM-19(A)	10/20/2003							
MW-19(A)	MW-19(A)	10/20/2003							
MW-19(A)	MW-19 (A)	1/13/2004		0.512	5.05	24.5	25		

TABLE 9
ANIONS and CATIONS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Nitrogen, Nitrate (as N) mg/L	Nitrogen, Nitrate- Nitrite mg/L	Potassium mg/L	Sodium mg/L	Sulfate mg/L	Total Dissolved Solids mg/L	Total Organic Carbon (TOC) mg/L
MW-20(A)	MW-20(A)	10/20/2003		1 U	7.17	18	90.5		
MW-21(A)	MW-21(A)	10/20/2003							
MW-21(A)	BM-21 (A)	1/13/2004		0.5 U	5.52	13.9	8.34		
MW-21(A)	MW-21 (A)	1/13/2004		0.5 U	5.21	14.1	7.94		
MW-22(A)	MW-22 (A)	10/16/2003							
MW-22(A)	MW-22(A)	1/19/2004		0.415 J+,B	5.28	12	38.1		
MW-23(A)	MW-23(A)	10/20/2003		1 U B	4.71	20.9	104		
MW-24(A)	MW-24(A)	10/21/2003		1 U B	7.9	92.4	17.6		
MW-26(A)	MW-26 (A)	10/17/2003							
MW-26(A)	MW-26 (A)	1/15/2004		0.5 U	3.98	9.58	12.8		
MW-27(A)	MW-27(A)	10/21/2003							
MW-27(A)	MW-27 (A)	1/14/2004		0.76	3.07	14.4	43.9		
MW-28(A)	MW-28 (A)	10/17/2003							
MW-28(A)	MW-28(A)	1/19/2004		0.05 U	4.23	16.8	128		
MW-29(A)	MW-29(A)	10/21/2003							
MW-29(A)	MW-29(A)	1/19/2004		0.0531 J+,B	5.53	7.11	4.95		
MW-30(A)	MW-30 (A)	10/16/2003		2 U	7.18	7.49	1 U		
MW-31(A)	BM-31 (A)	10/16/2003		2 U B	9.03	11.4	3.28		
MW-31(A)	MW-31 (A)	10/16/2003		2 U	8.92	11.6	1.2 J+,B		
MW-32(A)	MW-32(A)	10/14/2003		0.052 J	12	48.2	64.5		
MW-33(A)	MW-33(A)	10/14/2003		0.094 J	9.21	39.6	13.8		
MW-34(A)	MW-34(A)	10/14/2003		0.039 J	12.4	14.8	16.4		
MW-35(A)	MW-35 (A)	10/16/2003		2 U	4.94	8.04	8.64		

TABLE 9
ANIONS and CATIONS IN GROUND WATER

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Nitrogen, Nitrate (as N) mg/L	Nitrogen, Nitrate- Nitrite mg/L	Potassium mg/L	Sodium mg/L	Sulfate mg/L	Total Dissolved Solids mg/L	Total Organic Carbon (TOC) mg/L
MW-36(A)	MW-36(A)	10/21/2003							
MW-36(A)	MW-36 (A)	1/14/2004		0.852	3.86	19	9.99		
MW-37(A)	MW-37 (A)	10/17/2003							
MW-38(A)	MW-38(A)	10/21/2003		1 U	6.6	29.4	38.9		
MW-39(A)	MW-39 (A)	10/16/2003							
MW-39(A)	MW-39 (A)	1/16/2004		0.5 U	2.82	10.2	3.45		
MW-40(A)	MW-40 (A)	10/17/2003		2 U	12.4	10	1.13		
MW-41(A)	MW-41(A)	10/14/2003		0.2 U	5.33	8.68	5.91		
MW-42(A)	MW-42 (A)	10/15/2003		2 U	6.49	9.19	5.8		
MW-43(A)	MW-43(A)	10/13/2003		0.07 J	4.32	6.42	7.61		
MW-44(A)	MW-44 (A)	10/17/2003		2 U	3.42	10.3	8.53		
MW-45(A)	MW-45 (A)	10/16/2003							
MW-45(A)	MW-45 (A)	1/16/2004		1.18	4.38	13.2	22.7		
MW-46(A)	MW-46(A)	10/14/2003		0.112 J	5.74	5.77	1.24	J+,B	
MW-47(A)	MW-47(A)	10/13/2003		1.03	7.26	8.79	25.2		
MW-48(A)	MW-48(A)	10/14/2003		0.2 U	8.76	10.6	45.6		

TABLE 10**PRODUCT REMOVAL****Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Amount of Product Removed (cubic feet)	Amount of Product Removed (ounces)	Amount of Product Removed (gallons)	Total Gallons
MW-3(M)	8/13/2003	15:09	0.02		0.150	2.992
MW-3(M)	10/23/2003	9:39		9	0.070	
MW-3(M)	10/23/2003	10:40		3	0.023	
MW-3(M)	11/12/2003	15:20		4	0.030	
MW-3(M)	11/12/2003	16:00		2	0.016	
MW-3(M)	12/16/2003	15:22		33	0.264	
MW-3(M)	1/20/2004	10:25		90	0.720	
MW-3(M)	2/12/2004	15:40		80	0.640	
MW-3(M)	3/18/2004	15:40		36	0.288	
MW-3(M)	6/16/2004	16:00			0.333	
MW-3(M)	7/23/2004	11:19		16	0.128	
MW-3(M)	8/17/2004	15:00			0.330	
MW-4(M)	7/14/2003	13:49	0.002		0.015	1.839
MW-4(M)	7/14/2003	14:52	0.0006		0.004	
MW-4(M)	8/13/2003	14:51	0.0004		0.004	
MW-4(M)	10/23/2003	9:18		4	0.032	
MW-4(M)	10/23/2003	10:29		0.2	0.002	
MW-4(M)	2/12/2004	0:00		55	0.440	
MW-4(M)	3/18/2004	16:00			1.000	
MW-4(M)	6/16/2004	16:16			0.333	
MW-4(M)	7/19/2004	11:27		1	0.008	
MW-8(M)	7/14/2003	13:34	0.007		0.052	0.289
MW-8(M)	7/14/2003	14:29	0.0008		0.006	
MW-8(M)	8/13/2003	14:42	0.003		0.022	
MW-8(M)	10/23/2003	8:36		15	0.120	

TABLE 10

PRODUCT REMOVAL

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

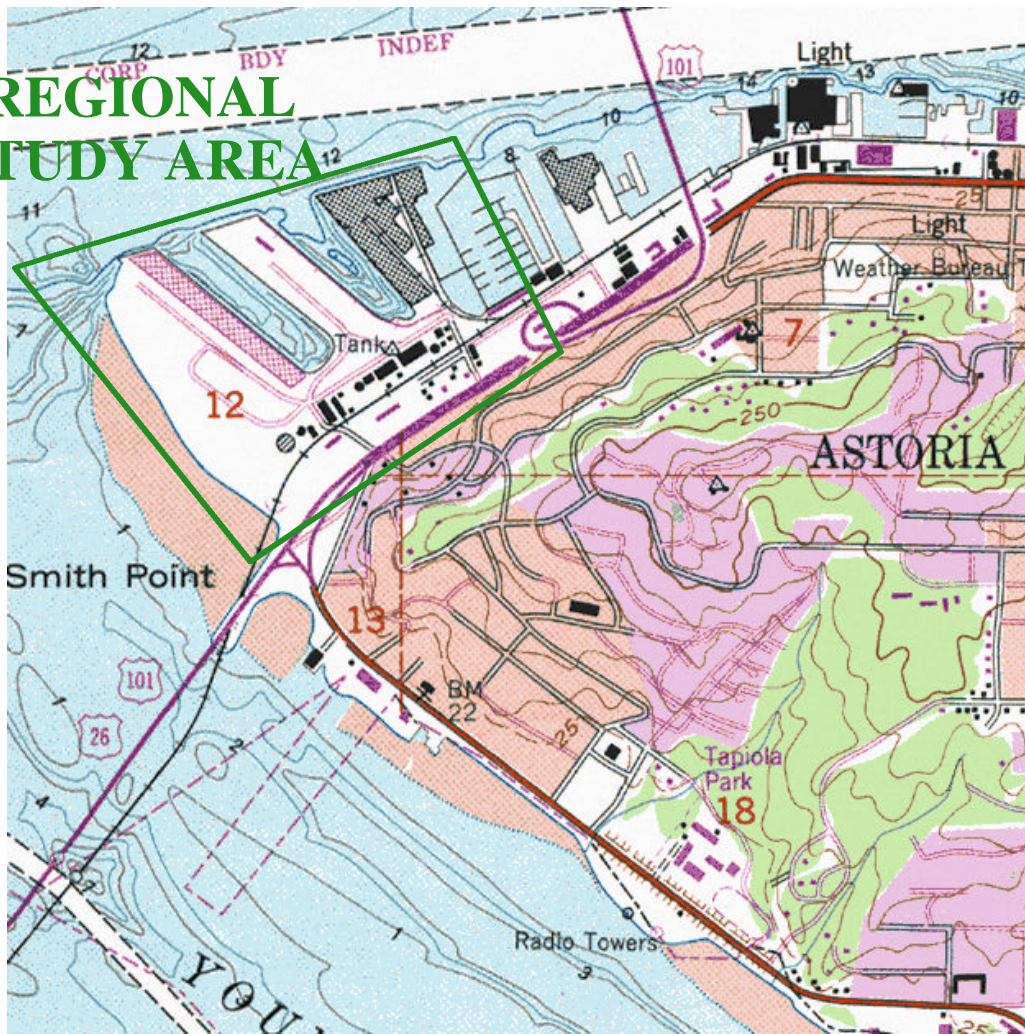
Locator ID	Date	Time	Amount of Product Removed (cubic feet)	Amount of Product Removed (ounces)	Amount of Product Removed (gallons)	Total Gallons
MW-8(M)	10/23/2003	10:20		1	0.008	
MW-8(M)	11/12/2003	15:30		4	0.032	
MW-8(M)	3/18/2004	15:00		4	0.032	
MW-8(M)	8/17/2004	14:35		2	0.016	
MW-9(M)	7/14/2003	13:15	0.02		0.150	1.554
MW-9(M)	7/14/2003	14:39	0.005		0.037	
MW-9(M)	8/13/2003	14:31	0.01		0.075	
MW-9(M)	10/23/2003	9:56		18	0.144	
MW-9(M)	10/23/2003	11:00		9	0.072	
MW-9(M)	11/12/2003	15:45		5	0.040	
MW-9(M)	12/16/2003	15:05		6	0.048	
MW-9(M)	1/20/2004	10:50		4	0.032	
MW-9(M)	2/12/2004	0:00		20	0.160	
MW-9(M)	3/18/2004	15:20		28	0.224	
MW-9(M)	7/19/2004	11:11		9	0.072	
MW-9(M)	8/17/2004	15:15			0.500	
MW-15(A)	5/19/2004	14:05			sample only	0.330
MW-15(A)	8/17/2004	13:05			0.330	
MW-37(A)	5/19/2004	14:30		1	0.008	0.008
MW-40(A)	11/12/2003	16:45		1	0.008	0.072
MW-40(A)	5/19/2004	15:10		5	0.040	
MW-40(A)	7/19/2004	11:55		2	0.016	
MW-40(A)	8/17/2004	14:25		1	0.008	

TABLE 10**PRODUCT REMOVAL****Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Amount of Product Removed (cubic feet)	Amount of Product Removed (ounces)	Amount of Product Removed (gallons)	Total Gallons
MW-41(A)	5/19/2004	10:05		8	0.064	0.064
MW-42(A)	5/19/2004	10:30			2.000	2.556
MW-42(A)	6/16/2004	16:30			0.500	
MW-42(A)	7/19/2004	11:33		5	0.040	
MW-42(A)	8/17/2004	14:45		2	0.016	
MW-44(A)	5/19/2004	15:10			0.500	0.564
MW-44(A)	7/19/2004	11:45		6	0.048	
MW-44(A)	8/17/2004	14:15		2	0.016	

FIGURES

REGIONAL STUDY AREA



(from USGS, Astoria {1984}, OR 7.5' Quadrangles)

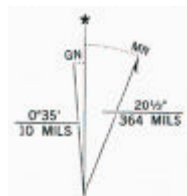
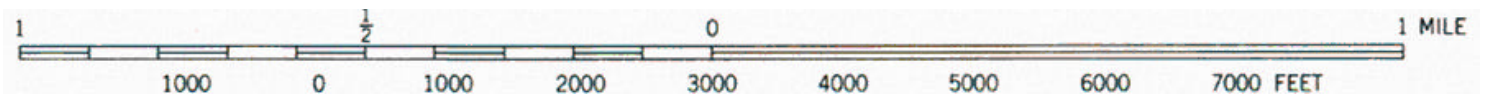


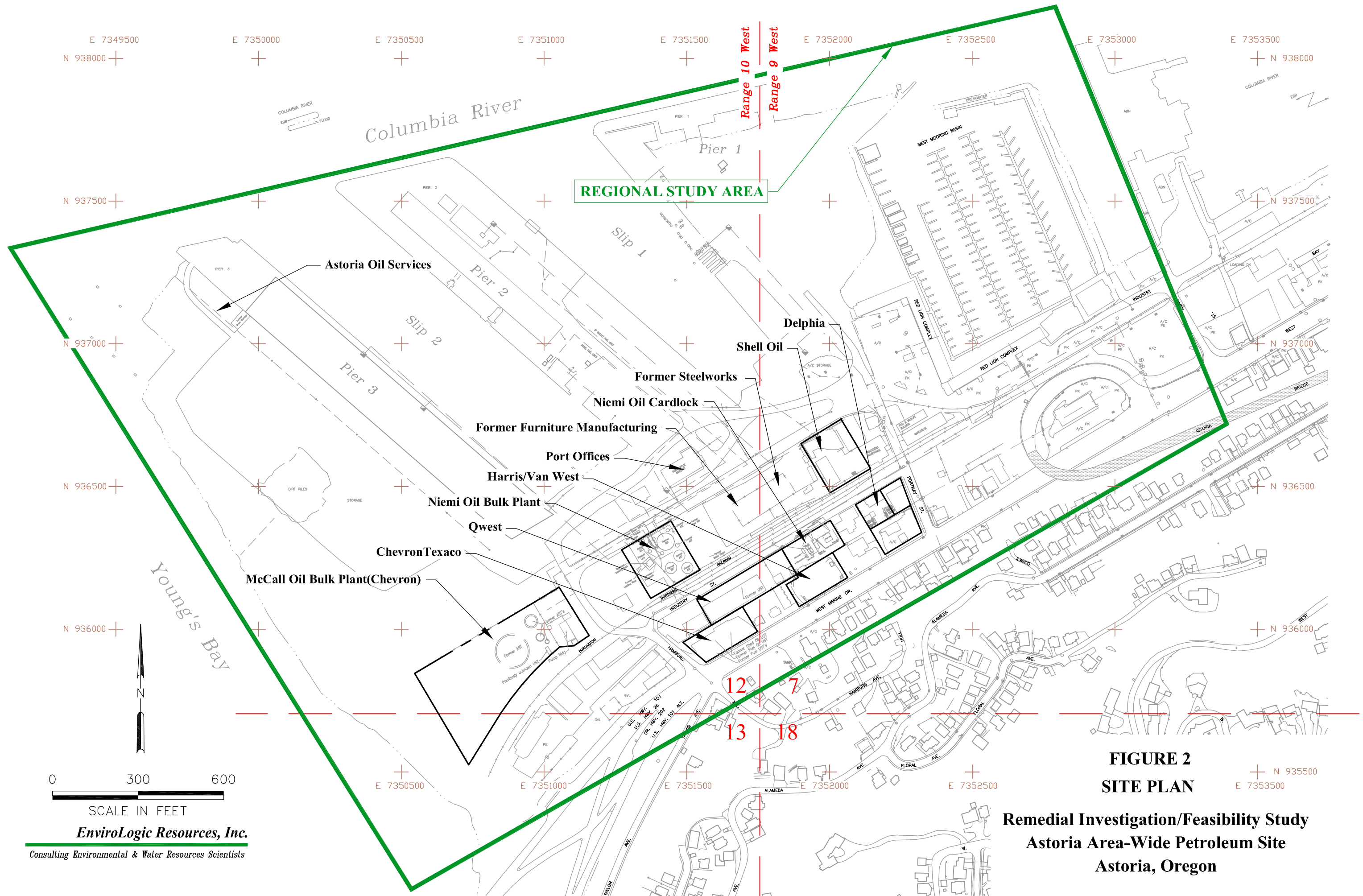
FIGURE 1

SITE LOCATION

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EnviroLogic Resources, Inc.

Consulting Environmental & Water Resources Scientists



REGIONAL STUDY AREA

Range 10 West

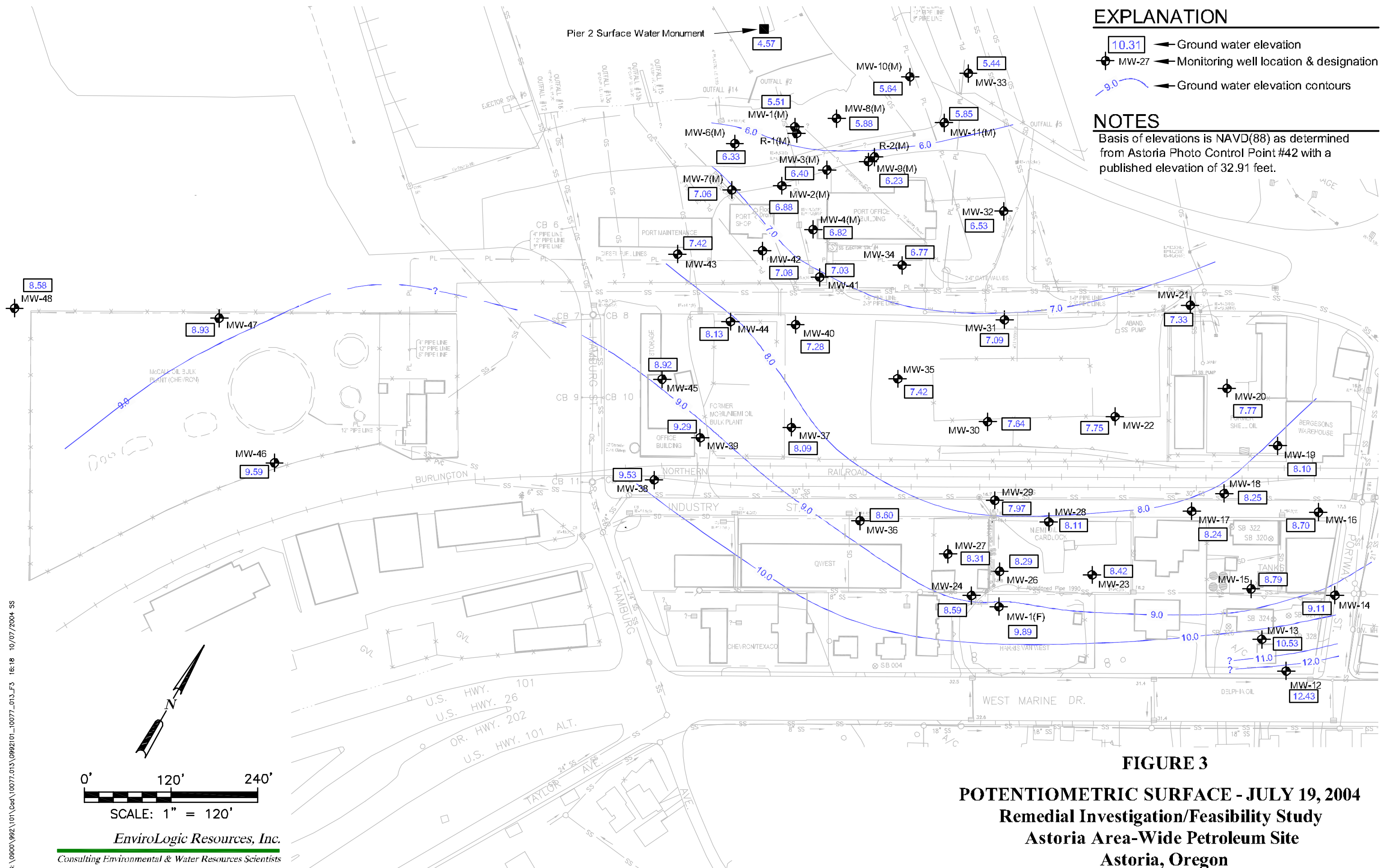
Range 9 West

**FIGURE 2
SITE PLAN**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

0 300 600
SCALE IN FEET

EnviroLogic Resources, Inc.
Consulting Environmental & Water Resources Scientists



EXPLANATION

- 10.31 ← Ground water elevation
- MW-27 ← Monitoring well location & designation
- 9.0 ← Ground water elevation contours

NOTES

Basis of elevations is NAVD(88) as determined from Astoria Photo Control Point #42 with a published elevation of 32.91 feet.

FIGURE 3

POTENTIOMETRIC SURFACE - JULY 19, 2004
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

G:\0900\992\101\Cad\10077\013\0992101_10077_013_F3 16:18 10/07/2004 SS

EnviroLogic Resources, Inc.
 Consulting Environmental & Water Resources Scientists

EXPLANATION

- Gx=49.0 ← Gasoline
- Dx=ND ← Diesel (ND = Not Detected)
- MW-27 ← Monitoring well location & designation
- P ← Free Product

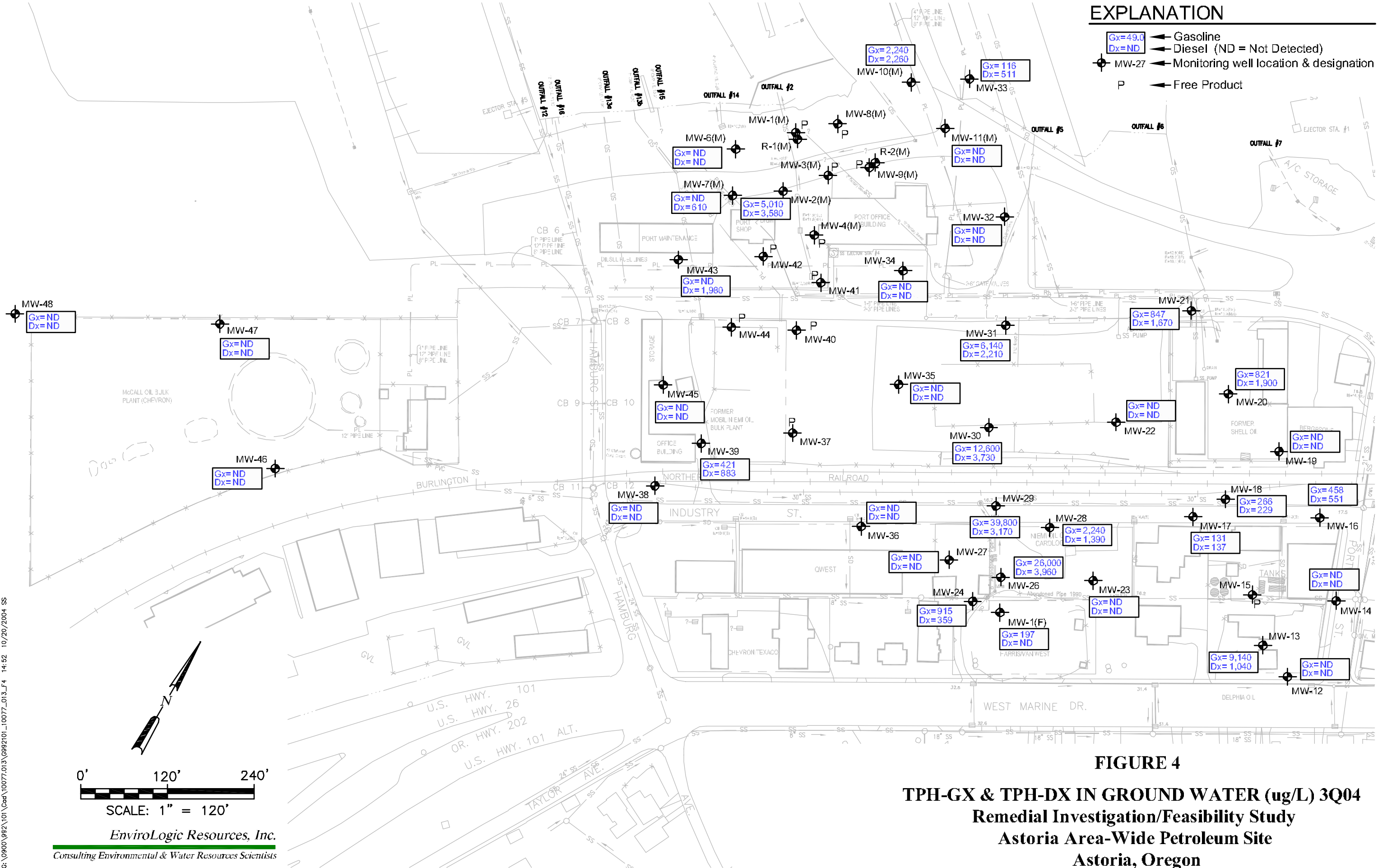
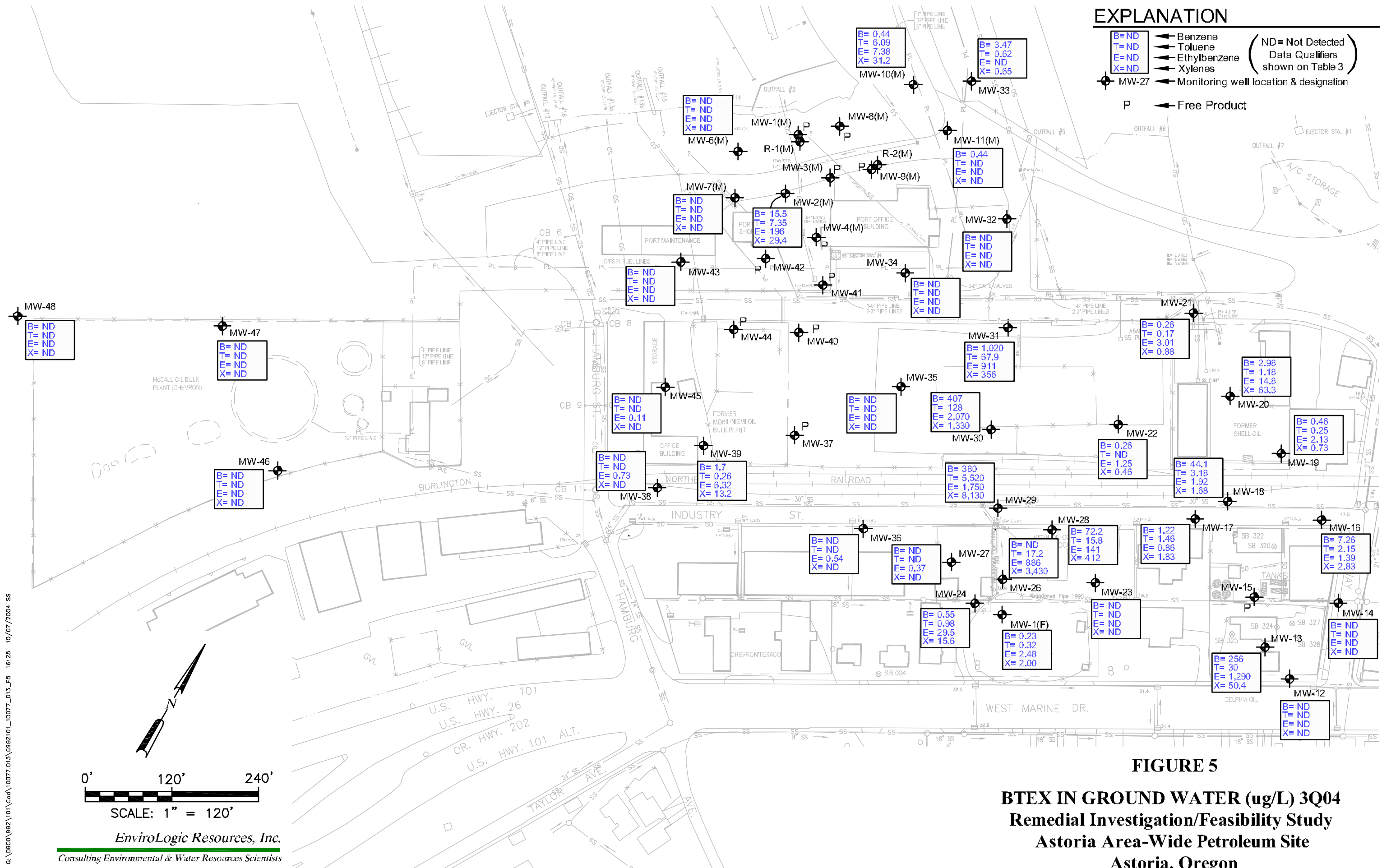


FIGURE 4

TPH-GX & TPH-DX IN GROUND WATER (ug/L) 3Q04
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

G:\0900\992\101\Cad\10077.013\G992101_110077_013_F4 14:52 10/29/2004 SS

c:\0600\992\101\Cad\10077.013\0992101_10077_013_FS 16:25 10/07/2004 SS



EXPLANATION

B=ND	← Benzene	(ND= Not Detected Data Qualifiers shown on Table 3)
T=ND	← Toluene	
E=ND	← Ethylbenzene	
X=ND	← Xylenes	
⊙ MW-27	← Monitoring well location & designation	
P	← Free Product	

FIGURE 5

**BTEX IN GROUND WATER (ug/L) 3Q04
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

0' 120' 240'
SCALE: 1" = 120'

EnviroLogic Resources, Inc.
Consulting Environmental & Water Resources Scientists

G:\0900\992\101\Cad\10077\013\G992101_10077_013_F6 16:28 10/07/2004 SS

EXPLANATION

- N= 0.0512
T= ND ← Naphthalene (ND= Not Detected, Data Qualifiers shown on Table 3)
- ← 1,2,4-Trimethylbenzene
- ⊕ MW-27 ← Monitoring well location & designation
- P ← Free Product

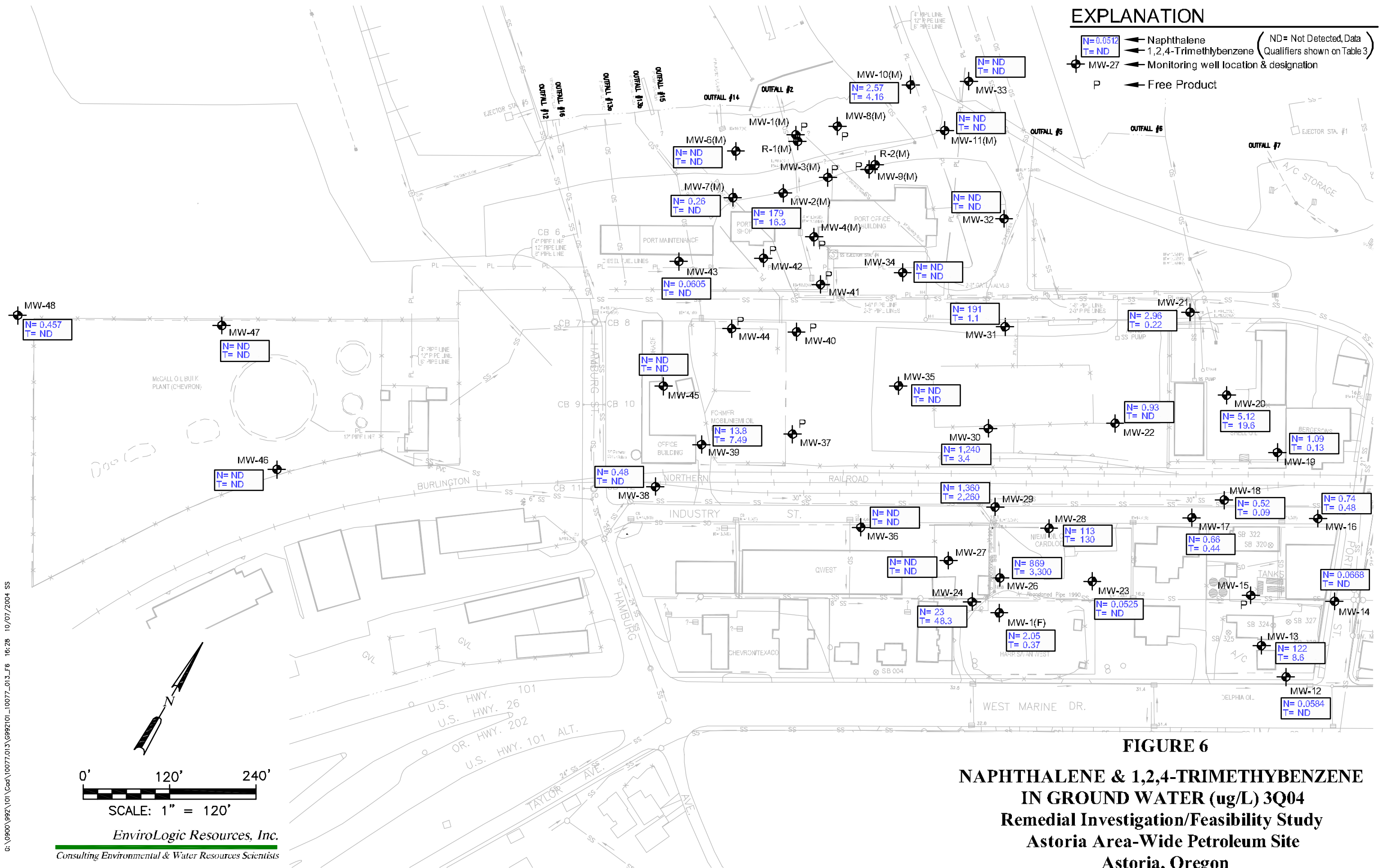


FIGURE 6

**NAPHTHALENE & 1,2,4-TRIMETHYLBENZENE
IN GROUND WATER (ug/L) 3Q04
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

APPENDIX A

METHODS AND PROCEDURES

APPENDIX A
METHODS AND PROCEDURES
GROUND-WATER SAMPLING

Standardized methods and procedures were developed prior to commencement of field activities. This protocol helped to control the quality of samples collected and helped to protect the health and safety of all site personnel. Quality-assurance protocols utilized are discussed in detail in the Quality Assurance Project Plan (QAPP) in Appendix B of the RI/FS Work Plan. Sampling procedures and protocols for each sampling activity were developed to meet the project data quality objectives and were based on proven and acceptable sampling methods as established by EPA guidance documents, Oregon state regulations, and professional judgment.

EnviroLogic Resources, Inc., performed all ground-water sampling and related activities. Ground-water level measurements were recorded from the monitoring wells at the start of the sampling event.

Ground-water samples were collected from 37 wells. The monitoring wells were first checked for free product, water levels were measured, and then approximately 3-borehole volumes of ground water were removed. Wells were purged using an ES-40 purge pump connected to clear vinyl PVC tubing. The water was transferred into a 250-gallon tote. Once the appropriate amount of water was purged from the well, the pH, temperature, and conductivity were measured continuously until stabilization using an Oakton meter. If the well was purged of all water, then the purging process was considered complete. Once ground water recovered or the field parameter readings were stable, the DO was measured down hole using a YSI 55 DO meter. Next, ground water was sampled with a weighted disposable PVC bailer to fill the VOA bottles. After filling the VOA bottles, polyethylene tubing was inserted into the well if not already present in the well from the last sampling event and connected to silicon tubing, and ground water was sampled through this tubing into the appropriate bottles using a Model 410 Solinst peristaltic pump. Finally, ground water was collected into a glass beaker and field parameters (pH,

temperature, conductivity, and ORP) were measured and recorded. The ORP was measured with an ORPTestr. Field parameters are presented on the Ground-Water Sampling Logs in Appendix B. The tubing was left inside the well casing to be used during the next sampling event, and the well was closed. When the tote was full of purged water, the water was pumped into a 4,000-gallon Baker tank, which is stored near the bank at the base of Slip 2.

Product was removed by using polyethylene tubing and a peristaltic pump. The tubing was held at the elevation of the product to collect only product to the extent possible. The product is contained in a 55-gallon drum stored on site.

Investigation derived waste (IDW), including purged and decontamination water are stored on-site in one staging area. The water is stored in a 4,000-gallon Baker tank. Samples of the water in the Baker Tank were collected and analyzed to compare concentrations to the discharge limits set by DEQ in a letter dated August 27, 2003. The concentrations of constituents in the decontamination and purge water were below discharge limits and the water was discharged from the Baker tank to a nearby storm water catch basin that has an outfall in Slip 2.

Field equipment blanks were collected and analyzed along with laboratory method blanks to evaluate whether the analytical results are representative of the sampled material and not influenced by non-site related contamination. Laboratory QC samples included laboratory matrix or method spikes, laboratory matrix spike duplicates, laboratory duplicates, and laboratory method blanks. These are described in Appendix B of the RI/FS Work Plan (*EnviroLogic Resources, 2002b*).

APPENDIX B
WATER SAMPLING LOGS

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-1(F)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-1(F)
Time Sample Collected: 18:38	Well or Boring No.: MW-1(F)
COC and RFA No.:	
Static Water Level: 21.90 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 30 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 6.7%, 0.69 mg/L
Color: mostly clear	Temperature: 16.2 deg C
Turbidity: clear	ORP: 82 mV
Conductance: 589 μ S	pH: 6.54
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 4 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-2(M)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-2(M)
Time Sample Collected: 17:57	Well or Boring No.: MW-2(M)
COC and RFA No.:	
Static Water Level: 8.18 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 70 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: negative error
Color: light grey	Temperature: 17.2 deg C
Turbidity: cloudy	ORP: -37mV
Conductance: 318 μ S	pH: 6.55
Odor: Slight	Other:
Analysis Requested:	
Comments:	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-6(M)
Sampled By: MNB, NAES

Date: 7/19/2004	Sample ID: MW-6(M)
Time Sample Collected: 15:05	Well or Boring No.: MW-6(M)
COC and RFA No.:	
Static Water Level: 7.29 feet	Time:
Well Depth: 18 feet	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 20 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 24.2%, 2.09 mg/L
Color: clear	Temperature: 16.2 deg C
Turbidity: clear	ORP: -1 mV
Conductance: 446 μ S	pH: 6.64
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 11 ft water column; pumped dry after 20 gallons	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-7(M)
Sampled By: MNB, NAES

Date: 7/19/2004	Sample ID: MW-7(M)
Time Sample Collected: 15:50	Well or Boring No.: MW-7(M)
COC and RFA No.:	
Static Water Level: 7.81 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 78 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 6.9%, 0.70 mg/L
Color: clear to slightly cloudy	Temperature: 15.6 deg C
Turbidity: none	ORP: 55 mV
Conductance: 286 μ S	pH: 6.93
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 11 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-10(M)
Sampled By: MNB, NAES

Date: 7/19/2004	Sample ID: MW-10(M)
Time Sample Collected: 17:15	Well or Boring No.: MW-10(M)
COC and RFA No.:	
Static Water Level: 10.65 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 61 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: negative error
Color: clear	Temperature: 15.2 deg C
Turbidity: clear	ORP: -6 mV
Conductance: 556 μ S	pH: 6.82
Odor: slight	Other:
Analysis Requested:	
Comments: Approx. 8 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-11(M)
Sampled By: MNB, NAES

Date: 7/21/2004	Sample ID: MW-11(M)
Time Sample Collected: 16:46	Well or Boring No.: MW-11(M)
COC and RFA No.:	
Static Water Level: 10.37 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 56 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: negative error
Color: slightly transparent grey	Temperature: 15.0 deg C
Turbidity: some sand	ORP: 15 mV
Conductance: 311 μ S	pH: 6.80
Odor: slight	Other:
Analysis Requested:	
Comments: Approx. 8 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-12(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-12(A)
Time Sample Collected: 6:55	Well or Boring No.: MW-12(A)
COC and RFA No.:	
Static Water Level: 18.19 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 52 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 1.9%, -2.9 mg/L
Color: mostly clear	Temperature: 14.9 deg C
Turbidity: none	ORP: 169 mV
Conductance: 789 μ S	pH: 6.63
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column; cleaning at Portway Tavern – possible chemical fumes	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-13(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-13(A)
Time Sample Collected: 8:18	Well or Boring No.: MW-13(A)
COC and RFA No.:	
Static Water Level: 21.40 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 10 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: negative error
Color: light grey	Temperature: 15.9 deg C
Turbidity: slightly cloudy	ORP: 2 mV
Conductance: 743 μ S	pH: 7.12
Odor: medium	Other:
Analysis Requested:	
Comments: Approx. 4 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-14(A)
Sampled By: MNB, NAES

Date: 7/23/2004	Sample ID: MW-14(A)
Time Sample Collected: 7:57	Well or Boring No.: MW-14(A)
COC and RFA No.:	
Static Water Level: 13.34 feet	Time:
Well Depth: 18 feet	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 10 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 27.3%, 2.71 mg/L
Color: clear to tan/orange	Temperature: 15.8 deg C
Turbidity: slight	ORP: 134 mV
Conductance: 646 μ S	pH: 6.45
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 5 ft water column; went dry; slow recovery	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-16(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-16(A)
Time Sample Collected: 15:15	Well or Boring No.: MW-16(A)
COC and RFA No.:	
Static Water Level: 7.81 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 31.9%, 3.13 mg/L
Color: light orange/tan	Temperature: 17.8 deg C
Turbidity: slight	ORP: 90 mV
Conductance: 557 μ S	pH: 6.70
Odor: Slight to medium	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-17(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-17(A)
Time Sample Collected: 16:36	Well or Boring No.: MW-17(A)
COC and RFA No.:	
Static Water Level: 7.50 feet	Time:
Well Depth: 15 feet	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 55 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: negative error
Color: light yellowish/clear	Temperature: 15.5 deg C
Turbidity: none	ORP: -4 mV
Conductance: 545 μ S	pH: 6.97
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7.5 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-18(A)
Sampled By: MNB, NAES

Date: 7/21/2004	Sample ID: MW-18(A)
Time Sample Collected: 15:35	Well or Boring No.: MW-18(A)
COC and RFA No.:	
Static Water Level: 8.00 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 1.3%, 0.12 mg/L
Color: clear	Temperature: 16.0 deg C
Turbidity: clear	ORP: -56 mV
Conductance: 652 μ S	pH: 6.90
Odor: slight to none	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-19(A)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-19(A)
Time Sample Collected: 13:43	Well or Boring No.: MW-19(A)
COC and RFA No.:	
Static Water Level: 9.85 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 32 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 45.4%, 4.50 mg/L
Color: clear	Temperature: 15.7 deg C
Turbidity: clear	ORP: 147 mV
Conductance: 461 μ S	pH: 6.68
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 5 ft water column; well went dry	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-20(A)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-20(A)
Time Sample Collected: 14:44	Well or Boring No.: MW-20(A)
COC and RFA No.:	
Static Water Level: 9.30 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 45 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 10.0%, 0.87 mg/L
Color: clear	Temperature: 16.0 deg C
Turbidity: none	ORP: 47 mV
Conductance: 378 μ S	pH: 6.76
Odor: Slight to none	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-21(A)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-21(A)
Time Sample Collected: 15:33	Well or Boring No.: MW-21(A)
COC and RFA No.:	
Static Water Level: 8.60 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 38%, 3.89 mg/L
Color:	Temperature: 15.7 deg C
Turbidity:	ORP: 80 mV
Conductance: 278 μ S	pH: 6.55
Odor: None to slight	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-22(A)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-22(A)
Time Sample Collected: 11:11	Well or Boring No.: MW-22(A)
COC and RFA No.:	
Static Water Level: 8.40 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 45%, 4.73 mg/L
Color: slightly lt transparent orange	Temperature: 14.7 deg C
Turbidity: mostly clear	ORP: 106 mV
Conductance: 395 µS	pH: 6.65
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-23(A)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-23(A)
Time Sample Collected: 16:45	Well or Boring No.: MW-23(A)
COC and RFA No.:	
Static Water Level: 7.83 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 8.3%, 0.87 mg/L
Color: clear	Temperature: 14.8 deg C
Turbidity: none	ORP: 155 mV
Conductance: 365 μ S	pH: 6.40
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-24(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-24(A)
Time Sample Collected: 12:22	Well or Boring No.: MW-24(A)
COC and RFA No.:	
Static Water Level: 8.03 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 15 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 17.4%, 1.83 mg/L
Color: clear	Temperature: 15.5 deg C
Turbidity: clear	ORP: 106 mV
Conductance: 411 μ S	pH: 6.76
Odor: none	Other:
Analysis Requested:	
Comments: Well went dry	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-26(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-26(A)
Time Sample Collected: 11:40	Well or Boring No.: MW-26(A)
COC and RFA No.:	
Static Water Level: 8.02 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 10 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 4.6%, 0.45 mg/L
Color: clear	Temperature: 15.9 deg C
Turbidity: none	ORP: 89 mV
Conductance: 278 μ S	pH: 6.42
Odor: slight	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column; pumped dry after 10 gallons	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-27(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-27(A)
Time Sample Collected: 11:00	Well or Boring No.: MW-27(A)
COC and RFA No.:	
Static Water Level: 8.11 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 20gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 8.8%, 0.88 mg/L
Color: slightly light orange to clear	Temperature: 17.0 deg C
Turbidity: slightly cloudy	ORP: 176 mV
Conductance: 206 μ S	pH: 6.16
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column; well went dry	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-28(A)
Sampled By: MNB, NAES

Date: 7/23/2004	Sample ID: MW-28(A)
Time Sample Collected: 9:05	Well or Boring No.: MW-28(A)
COC and RFA No.:	
Static Water Level: 8.10 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 63 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: negative error
Color: clear	Temperature: 18.5 deg C
Turbidity: slight to none	ORP: 7 mV
Conductance: 398 μ S	pH: 6.60
Odor: slight	Other:
Analysis Requested:	
Comments:	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-29(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-29(A)
Time Sample Collected: 13:01	Well or Boring No.: MW-29(A)
COC and RFA No.:	
Static Water Level: 7.91 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: negative error
Color: slightly orange/tan	Temperature: 17.5 deg C
Turbidity: none	ORP: 18 mV
Conductance: 267 μ S	pH: 6.56
Odor: slight to medium	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-30(A)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-30(A)
Time Sample Collected: 9:21	Well or Boring No.: MW-30(A)
COC and RFA No.:	
Static Water Level: 9.04 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 43 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO:
Color: clear	Temperature: 13.8 deg C
Turbidity: clear	ORP: 136 mV
Conductance: 432 μ S	pH: 6.68
Odor: slight	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-31(A)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-31(A)
Time Sample Collected: 10:15	Well or Boring No.: MW-31(A)
COC and RFA No.:	
Static Water Level: 9.15 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 42 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 6.4%, 0.66 mg/L
Color: clear	Temperature: 15.5 deg C
Turbidity: none	ORP: -20 mV
Conductance: 400 μ S	pH: 6.86
Odor: slight to medium	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-32(A)
Sampled By: MNB, NAES

Date: 7/19/2004	Sample ID: MW-32(A)
Time Sample Collected: 14:00	Well or Boring No.: MW-32(A)
COC and RFA No.:	
Static Water Level: 10.00 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 35 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 12.5%, 1.25 mg/L
Color: mostly clear	Temperature: 15.8 deg C
Turbidity: none	ORP: 106 mV
Conductance: 424 μ S	pH: 6.82
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 5 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-33(A)
Sampled By: MNB, NAES

Date: 7/19/2004	Sample ID: MW-33(A)
Time Sample Collected: 13:10	Well or Boring No.: MW-33(A)
COC and RFA No.:	
Static Water Level: 10.76 feet	Time:
Well Depth: 17 ft	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 35.5%, 3.26 mg/L
Color: clear	Temperature: 16.4 deg C
Turbidity:	ORP: -7 mV
Conductance: 434 μ S	pH: 6.77
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-34(A)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-34(A)
Time Sample Collected: 7:10	Well or Boring No.: MW-34(A)
COC and RFA No.:	
Static Water Level: 9.02 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 45 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: negative error
Color: clear	Temperature: 15.9 deg C
Turbidity: clear	ORP: 174 mV
Conductance: 514 μ S	pH: 6.59
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-35(A)
Sampled By: MNB, NAES

Date: 7/20/2004	Sample ID: MW-35(A)
Time Sample Collected: 8:32	Well or Boring No.: MW-35(A)
COC and RFA No.:	
Static Water Level: 9.08 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 45 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO:
Color: clear	Temperature: 14.2 deg C
Turbidity: slightly cloudy	ORP: 160 mV
Conductance: 186 μ S	pH: 6.79
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-36(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-36(A)
Time Sample Collected: 10:11	Well or Boring No.: MW-36(A)
COC and RFA No.:	
Static Water Level: 7.60 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 15 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 57.5%, 5.25 mg/L
Color: clear	Temperature: 16.1 deg C
Turbidity: none	ORP: 150 mV
Conductance: 519 μ S	pH: 6.81
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column; pumped dry after 15 gallons	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-38(A)
Sampled By: MNB, NAES

Date: 7/22/2004	Sample ID: MW-38(A)
Time Sample Collected: 9:10	Well or Boring No.: MW-38(A)
COC and RFA No.:	
Static Water Level: 7.72 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 15.5%, 1.53 mg/L
Color: clear	Temperature: 17.1 deg C
Turbidity: clear	ORP: 138 mV
Conductance: 273 μ S	pH: 6.70
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-39(A)
Sampled By: MNB, NAES

Date: 7/21/2004	Sample ID: MW-39(A)
Time Sample Collected: 13:33	Well or Boring No.: MW-39(A)
COC and RFA No.:	
Static Water Level: 8.05 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 1.0%, 0.09 mg/L
Color: clear	Temperature: 15.0 deg C
Turbidity: none	ORP: 156 mV
Conductance: 90.5 μ S	pH: 6.48
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-43(A)
Sampled By: MNB, NAES

Date: 7/21/2004	Sample ID: MW-43(A)
Time Sample Collected: 11:33	Well or Boring No.: MW-43(A)
COC and RFA No.:	
Static Water Level: 8.56 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 48 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 23.7%, 2.47 mg/L
Color: clear	Temperature: 15.0 deg C
Turbidity: clear	ORP: 135 mV
Conductance: 294 μ S	pH: 6.50
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 6.5 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-45(A)
Sampled By: MNB, NAES

Date: 7/21/2004	Sample ID: MW-45(A)
Time Sample Collected: 14:44	Well or Boring No.: MW-45(A)
COC and RFA No.:	
Static Water Level: 8.45 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 45 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 27.2%, 2.8 mg/L
Color: light orange	Temperature: 16.4 deg C
Turbidity: none	ORP: 177 mV
Conductance: 125 μ S	pH: 6.44
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-46(A)
Sampled By: MNB, NAES

Date: 7/21/2004	Sample ID: MW-46(A)
Time Sample Collected: 10:05	Well or Boring No.: MW-46(A)
COC and RFA No.:	
Static Water Level: 6.45 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 60 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 11.6%, 1.16 mg/L
Color: orange to start then lt yellow	Temperature: 15.9 deg C
Turbidity: mostly clear	ORP: 133 mV
Conductance: 153 μ S	pH: 6.43
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 8 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-47(A)
Sampled By: MNB, NAES

Date: 7/21/2004	Sample ID: MW-47(A)
Time Sample Collected: 7:55	Well or Boring No.: MW-47(A)
COC and RFA No.:	
Static Water Level: 7.38 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 60 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump, field filter dissolved chrome	
Pump intake depth:	
Discharge rate during sampling:	DO: 16.4%, 1.69 mg/L
Color: clear	Temperature: 14.7 deg C
Turbidity: none	ORP: 183 mV
Conductance: 155 μ S	pH: 6.42
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 8 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-48(A)
Sampled By: MNB, NAES

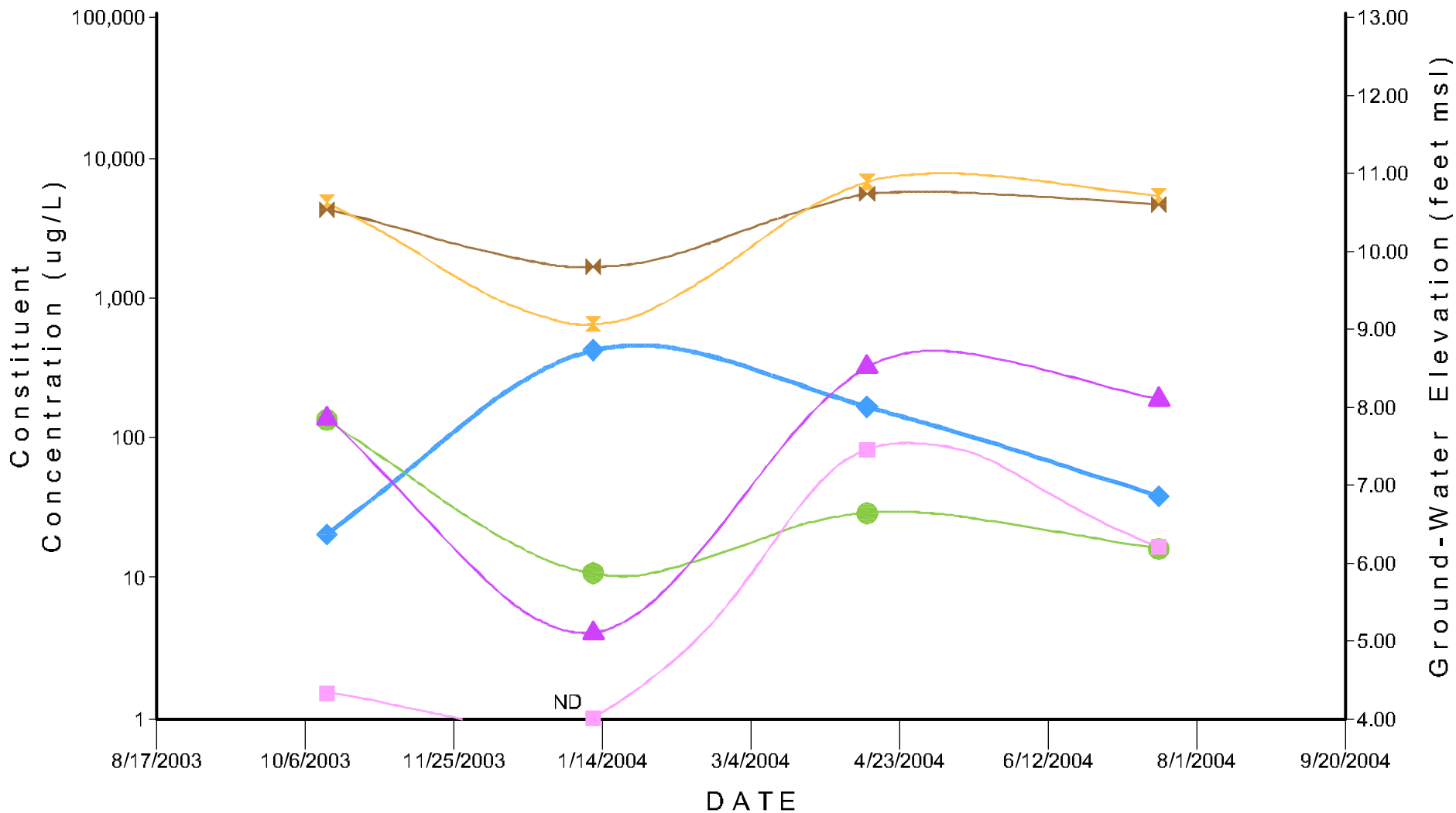
Date: 7/21/2004	Sample ID: MW-48(A)
Time Sample Collected: 9:01	Well or Boring No.: MW-48(A)
COC and RFA No.:	
Static Water Level: 7.66 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 52 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 1.8%, 0.18 mg/L
Color: clear	Temperature: 15.5 deg C
Turbidity: none	ORP: 49 mV
Conductance: 347 μ S	pH: 6.54
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

APPENDIX C

GROUND-WATER CONCENTRATION / ELEVATION GRAPHS

EXPLANATION

- ◆ Ground-Water Elevation
- Benzene Concentration
- ▲ Naphthalene Concentration
- 1,2,4-Trimethylbenzene Concentration
- ✕ TPH-Dx Concentration
- ✕ TPH-Gx Concentration



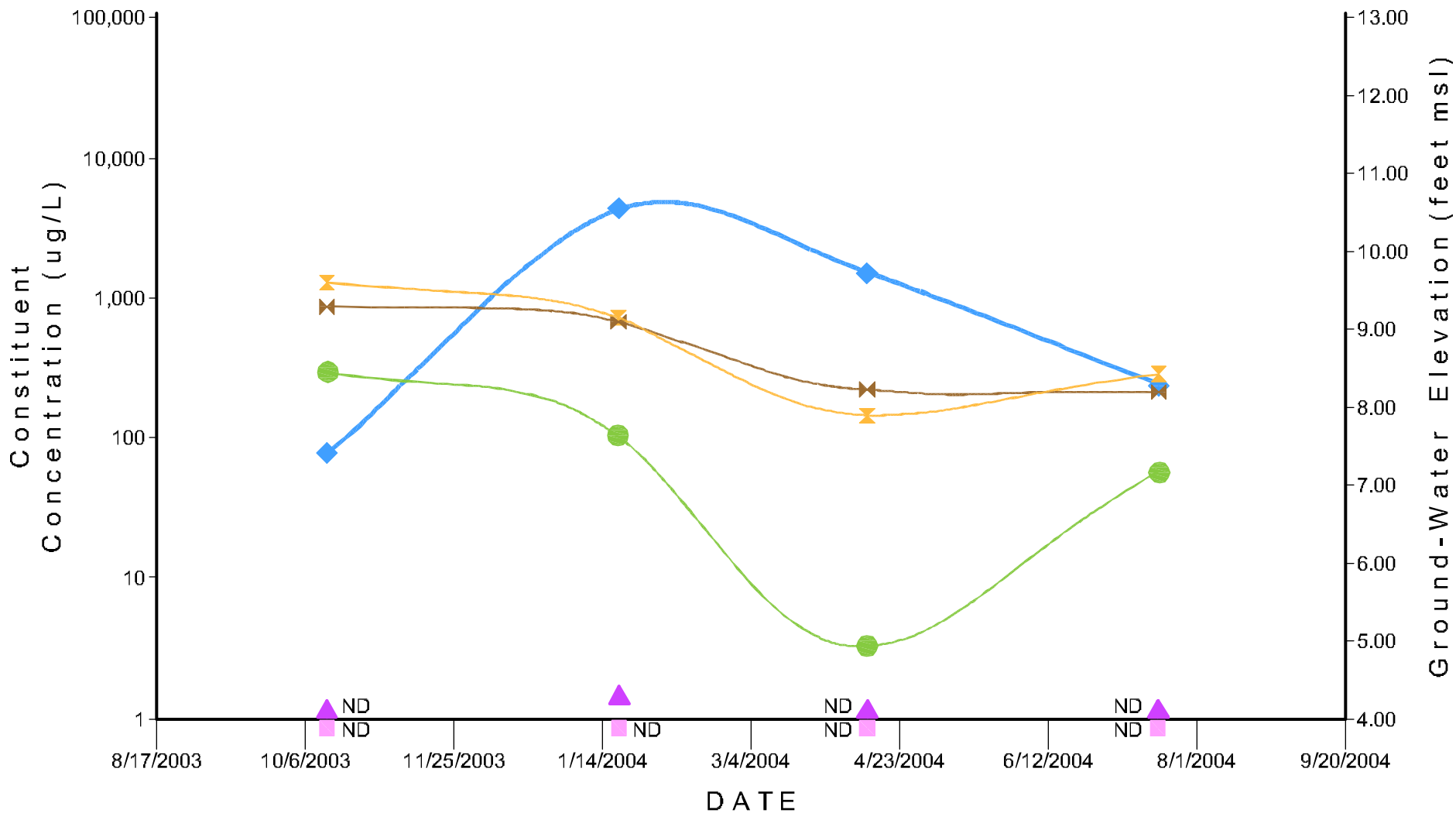
NOTES

1. ND = Concentration of 1 ug/L is non-detectable.

FIGURE C-1
HYDROGRAPH & CONSTITUENT CONCENTRATION
LEVELS FOR MW-2(M)
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EXPLANATION

- ◆— Ground-Water Elevation
- Benzene Concentration
- ▲— Naphthalene Concentration
- 1,2,4-Trimethylbenzene Concentration
- ×— TPH-Dx Concentration
- ×— TPH-Gx Concentration



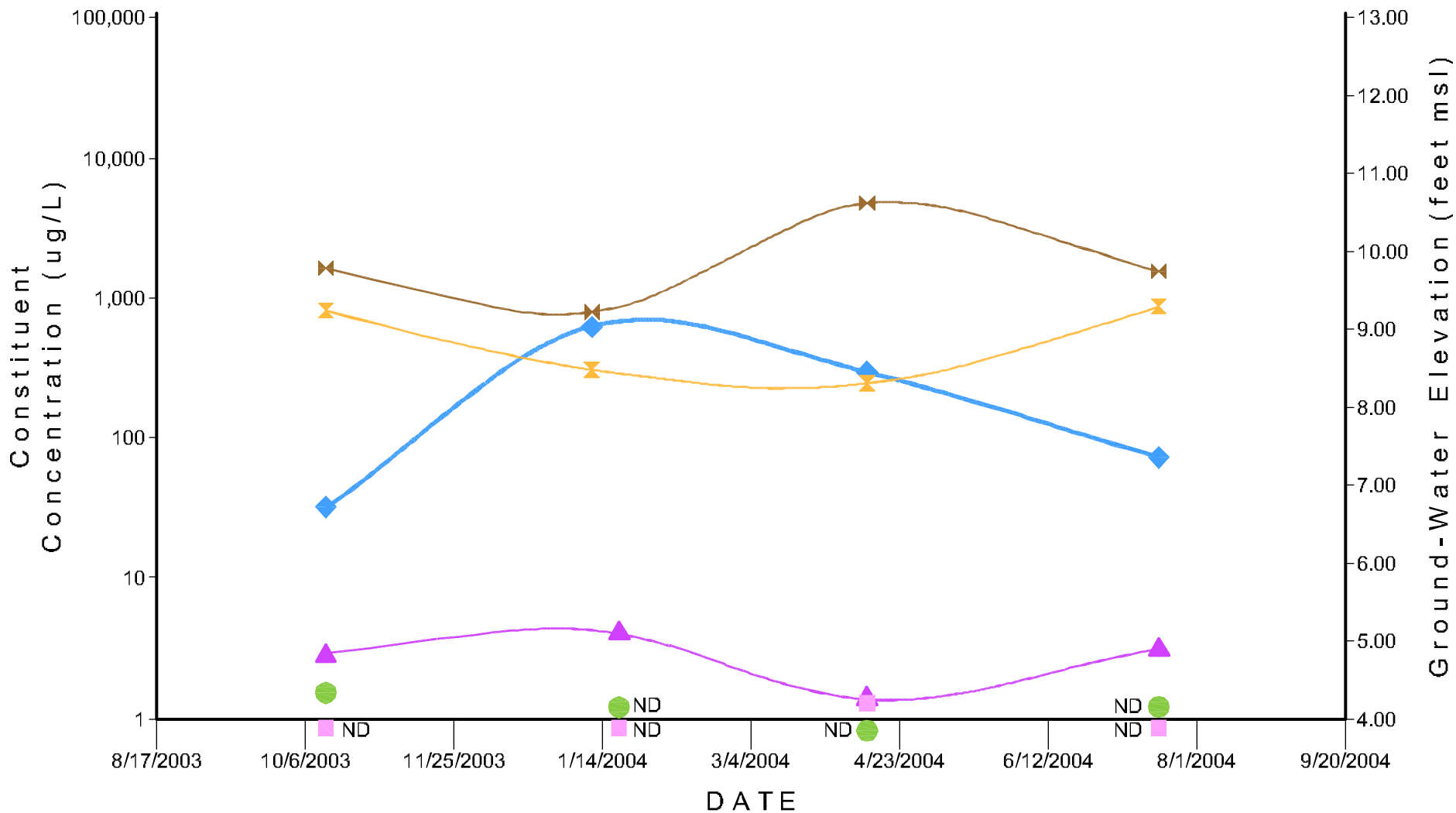
NOTES

1. ND = Concentration of 1 ug/L is non-detectable.

FIGURE C-3
HYDROGRAPH & CONSTITUENT CONCENTRATION
LEVELS FOR MW-18(A)
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EXPLANATION

- ◆ Ground-Water Elevation
- Benzene Concentration
- ▲ Naphthalene Concentration
- 1,2,4-Trimethylbenzene Concentration
- ✕ TPH-Dx Concentration
- ✕ TPH-Gx Concentration



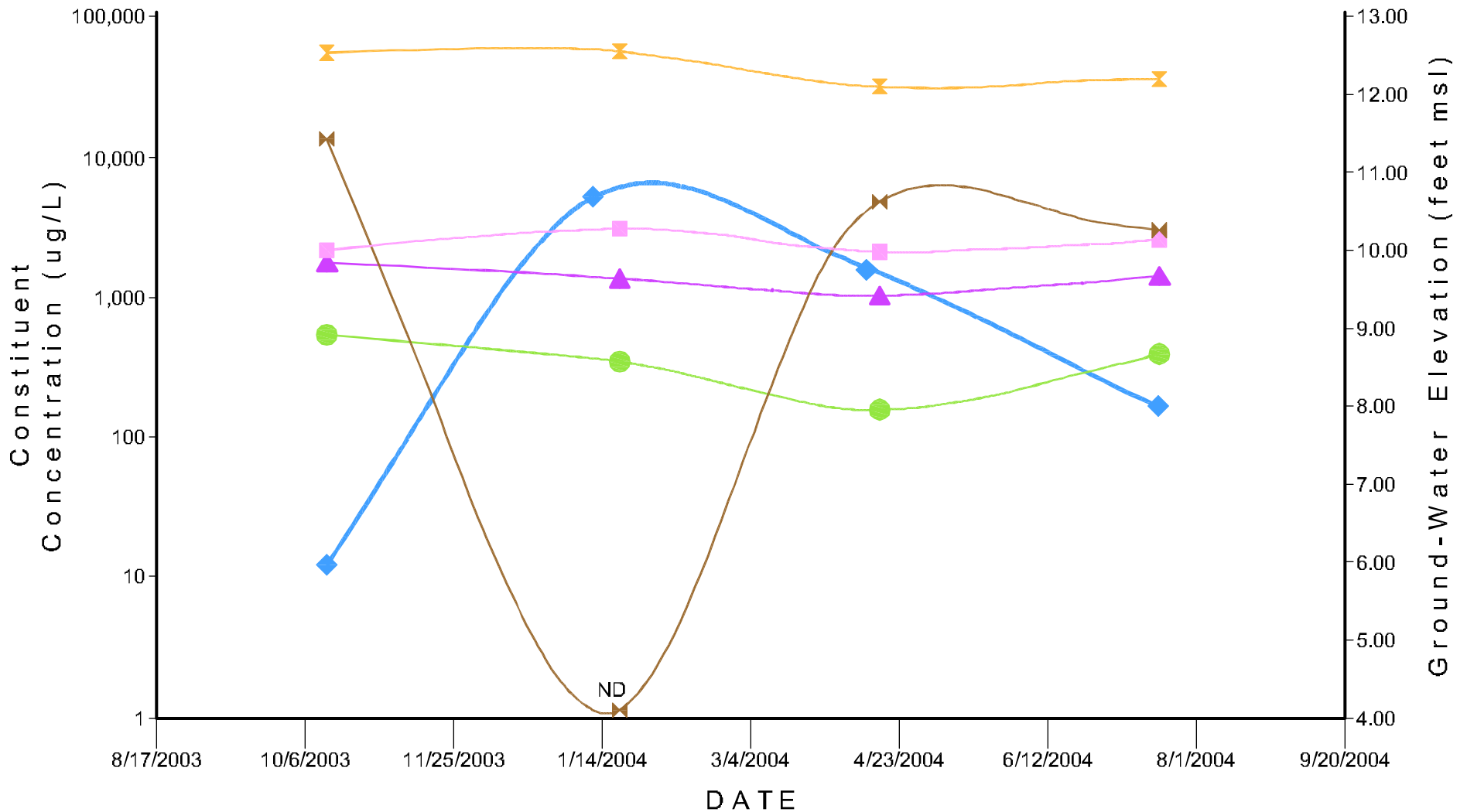
NOTES

ND = Concentration of 1 ug/L is non-detectable.

FIGURE C-4
HYDROGRAPH & CONSTITUENT CONCENTRATION
LEVELS FOR MW-21(A)
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EXPLANATION

- ◆— Ground-Water Elevation
- ▲— Naphthalene Concentration
- ×— TPH-Dx Concentration
- Benzene Concentration
- 1,2,4-Trimethylbenzene Concentration
- ×— TPH-Gx Concentration



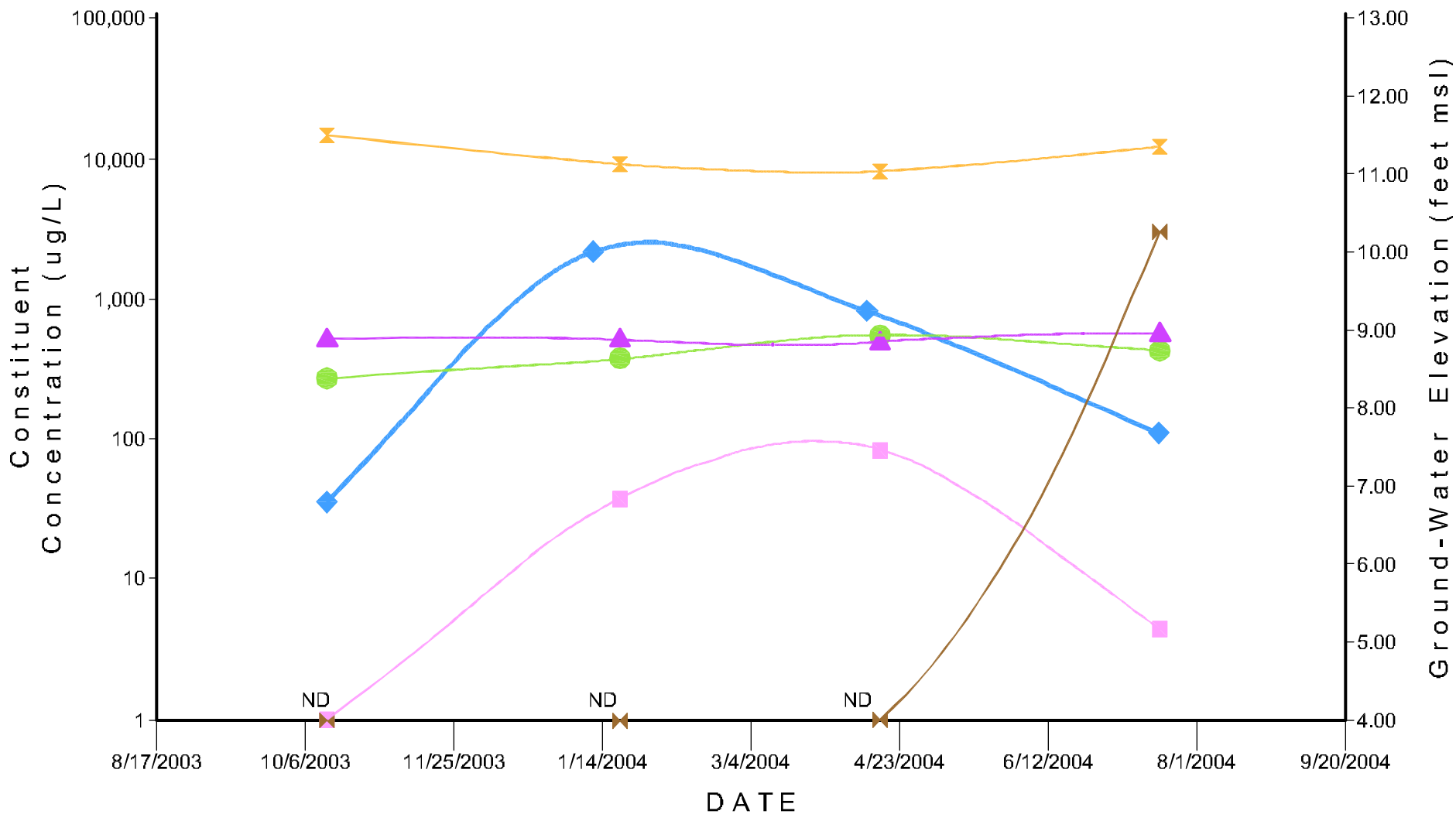
NOTES

1. ND = Concentration of 1 ug/L is non-detectable.

FIGURE C-5
HYDROGRAPH & CONSTITUENT CONCENTRATION
LEVELS FOR MW-29(A)
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EXPLANATION

- ◆ Ground-Water Elevation
- ▲ Naphthalene Concentration
- ✕ TPH-Dx Concentration
- Benzene Concentration
- 1,2,4-Trimethylbenzene Concentration
- ✕ TPH-Gx Concentration



NOTES

1. ND = Concentration of 1 ug/L is non-detectable.

FIGURE C-6
HYDROGRAPH & CONSTITUENT CONCENTRATION
LEVELS FOR MW-30(A)
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EXPLANATION

- ◆ — Ground-Water Elevation
- — Benzene Concentration
- ▲ — Naphthalene Concentration
- — 1,2,4-Trimethylbenzene Concentration
- ✕ — TPH-Dx Concentration
- ✕ — TPH-Gx Concentration

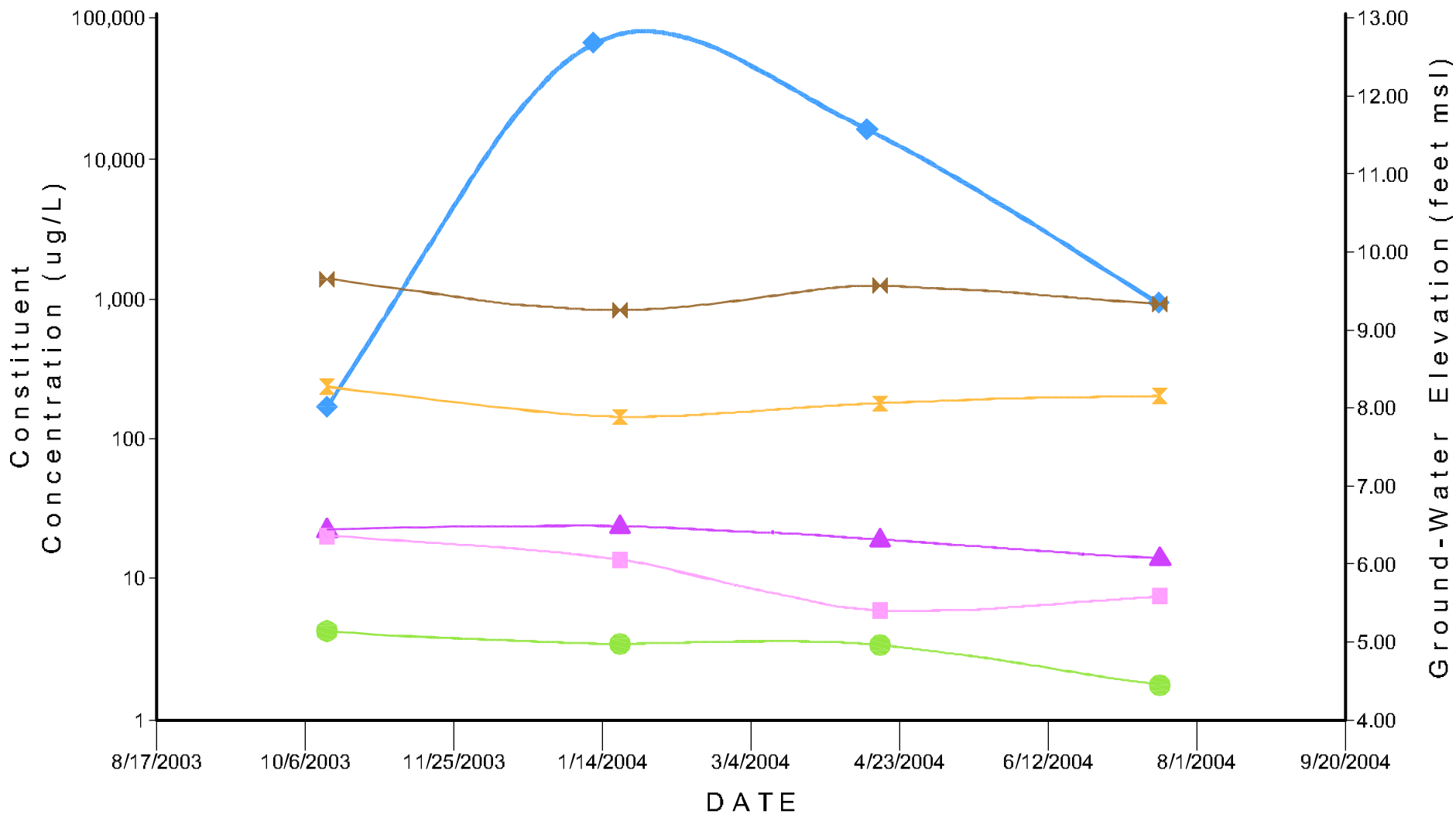


FIGURE C-7
HYDROGRAPH & CONSTITUENT CONCENTRATION
LEVELS FOR MW-39(A)
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

APPENDIX D

*LABORATORY ANALYTICAL REPORTS
WITH DATA VALIDATION REPORTS*

MEMORANDUM

To: File – 10077.013

From: Nancy East-Smith

Date: September 15, 2004

Subject: **QUALITY ASSURANCE/QUALITY CONTROL REVIEW**
Fourth Complete Ground Water Sampling Event – 3rd Quarter 2004
ASTORIA AREA WIDE PETROLEUM SITE

This report presents the results of our review of laboratory analytical reports and the data validation conducted based on the laboratory reports for the third ground-water sampling event conducted at the site. The samples were collected on August 19, 20, 21, 22 and 23 2004 as part of the fourth ground-water sampling event. Sample handling, analysis and quality control (QC) procedures were established in the July 15, 2002, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon, Phase I Work Plan (Phase 1 RI/FS) and the Work Plan Addendum, Phase 1 Ground Water Assessment, Astoria Area-Wide Petroleum Site, Astoria, Oregon, DEQ ECSI File #2277. Both documents were prepared by *EnviroLogic Resources, Inc.* The samples were submitted to North Creek Analytical, Inc., (NCA) of Beaverton, Oregon, for analysis.

A total of 44 water samples were submitted for analysis. This included 36 field samples, 2 field duplicates, 2 equipment blanks and 4 trip blanks. The samples were submitted in 2 groups, each group was assigned a lab order number. Basic information about each lab order number is presented below:

Lab Order	Number of Samples	Sample Type	Date Collected	Field Locations
P4G0721	19 2 1 1	Field Samples Trip Blanks Equipment Blank Field Duplicate	7/19, 20, 21/2004	MW-48, MW-47, MW-46, MW-7, MW-33, MW-10, MW-6, MW-43, MW-32. MW-31, MW-35, MW-30, MW-34, MW-19, BM-19, MW-1, MW-23, MW-21, MW-20

P4G0839	17	Field Samples	7/21, 22, 23/2004	MW-28, MW-24, MW-26, MW-2, BM-17, MW-17, MW-18, MW-16, MW11, MW-45, MW-39, MW-27, MW-36, MW-38 MW-14, MW-13 MW-29, MW-12
	1	Field Duplicate		
	1	Equipment Blank		
	2	Trip Blank		

As stated in Appendix B, Sections 8.0, 9.0, and 10.0 of the Phase I RI/FS Work Plan, our goal was to review the laboratory reports and chain of custodies for Quality Assurance/Quality Control (QA/QC) parameters and statistical parameters. The findings of our review are presented in the following pages. Qualified data are presented in the attached tables. Analyses performed are listed below.

Analysis	Reference
Gasoline Hydrocarbons	NWTPH-Gx
Diesel and Heavy Range Hydrocarbons	NWTPH-Dx
Total Metals (lead only)	EPA Method 200 Series
Total/Dissolved Metals (Chromium)	EPA Method 200 Series
Hexavalent Chromium	EPA Method 7195
Volatile Organic Compounds (VOCs)	EPA Method 8260B
Polynuclear Aromatic Compounds (PAHs)	EPA Method 8270M-SIM

EPA = U.S. Environmental Protection Agency
 NWTPH = Northwest Total Petroleum Hydrocarbons
 SIM = Selected Ion Monitoring

CHAIN OF CUSTODY REVIEW

Chain of custodies (COC) and laboratory sample receipt forms were reviewed to determine sample condition upon arrival at the lab, to determine if analysis requested was in accordance with the RI/FS Work Plan, and that analyses requested were performed.

- No special conditions were noted on the laboratory cooler receipt or chain of custody forms for either lab order.
- Cooler temperatures recorded at the laboratory upon receipt ranged from 1.9°C to 6.9°C.
- Analyses requested on the COC reflect the analysis presented in the laboratory reports.

QUALITY CONTROL/QUALITY ASSURANCE REVIEW

DATA QUALIFIERS

The following data qualifiers are used in this data validation report:

- **B.** The analyte was also identified in a field or laboratory blank associated with this sample or sample group.
- **J.** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- **J+.** The analyte was positively identified; the associated numerical value of the analyte in the sample is the estimated to be biased high
- **U.** The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

The attached tables present the original result and the qualified result for all analyses that were qualified. The tables are organized by analytical method and only qualified analytical results are included.

HOLDING TIMES

We reviewed the laboratory reports and compared sample dates, prepared dates and analyzed dates for all the analyses. One holding time exception was noted for a re-extracted sample. The laboratory included a case narrative for this holding time exception; based on our judgment no data was qualified.

FIELD BLANKS

Equipment Blanks

Equipment blanks were analyzed at the required frequency. A total of two equipment blanks were submitted for analysis of VOCs. Both equipment blanks were obtained by running de-ionized water through a sample bailer.

No analytes were detected in either equipment blank.

Trip Blanks

A total of 4 trip blanks were submitted for VOC analyses with the 2 lab orders. The trip blanks were provided by the laboratory and consisted of water in a 40 ml clear VOA (volatile organic analysis) vial.

No analytes were detected in the trip blanks.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the required frequency. Laboratory blanks were performed on sample batches so each blank is associated with a batch of field

samples. The batch sample associated with each field sample is identified in the laboratory report. Analytes detected in laboratory blanks are noted below:

Lab Order/ Batch No.	Field Samples Qualified	Analyte Detected in Laboratory Blank	Analytical Method	Blank MDL	Blank RL
P4G0721					
4070892	MW-6, MW-33, MW-22, MW-35, MW-1, MW-23, MW-19, BM-19, MW-47, MW-48, MW-46	TPH-Dx 0.104J mg/l	NWTPH-Dx	0.0870 mg/l	0.250 mg/l
4070893	None	TPH-Dx 0.118J mg/l	NWTPH-Dx	0.0870 mg/l	0.250 mg/l

Field samples in the same batch that had analytes detected within 5 times the blank concentration are qualified by placing a JB flag next to the detected concentration if the detected concentration is greater than the RL. Where the detected concentration is less than the RL, the RL value is reported with a UB flag (for both organics and inorganics). Data is not qualified where field samples had analytes detected at concentrations greater than 5 times the corresponding blank concentration. Laboratory dilution of field samples was considered.

SURROGATE RECOVERIES

Field Samples

One or more surrogates were utilized for each analysis except for metals analyses. We reviewed all of the surrogate recoveries relative to the specified control limits and observed one exception. Where surrogate recoveries were not within control limits batch specific QC information and laboratory notes were reviewed to evaluate the data. In this case, the laboratory also provided a case narrative. This evaluation resulted in no data being qualified due to surrogate recovery issues.

SPIKE AND SURROGATE RECOVERIES

Laboratory Control Samples

Laboratory Control Samples (LCS) were conducted at the required frequency. Based on our review all LCS quality control information was acceptable.

Matrix Spike Samples

Matrix Spike (MS) were conducted at the required frequency. Based on our review all spike compounds and/or surrogates meet quality control limits. This evaluation resulted in no data being qualified.

LABORATORY AND FIELD DUPLICATES/RELATIVE PERCENT DIFFERENCE

Field duplicate samples were obtained at the frequency of two for 36 field samples. The two duplicates were BM-17 and BM-19. The field duplicate frequency set by the Work Plan was one for every 20 field samples. MSD, Laboratory Control Sample Duplicates (LCSDs), laboratory duplicates and field duplicate analytical information was reviewed. Based on our review one laboratory duplicate sample relative percent differences (RPDs) was not within acceptable limits. Where RPDs were not within control limits, batch specific QC information and laboratory notes were reviewed to evaluate the data. This evaluation resulted in no data being qualified due to RPD exceptions. MS/MSD exceptions for duplicate samples were included in the previous section. No field duplicate exceptions were noted below. RPDs are generally not evaluated for concentrations within 5 times the RL and these are not presented below.

STATISTICAL EVALUATION

Precision

Precision is a measure of the ability to reproduce data and is evaluated using duplicate samples. This includes field duplicates, laboratory duplicates, MSDs and LCSDs. Relative percent difference (RPD) is used to measure the reproducibility as described in section 10.1 of Appendix B of the RI/FS Work Plan. The RPD control limits are listed in the laboratory reports. These control limits may be slightly different than those presented in the Work Plan, but they are still acceptable. Overall precision for the analysis was acceptable.

RPDs outside the control limits would represent statistical exceptions and indicate a lack of ability to reproduce the data. LCSD evaluate the effect laboratory conditions have on precision -- no RPD exceptions were noted in LCSDs. Field duplicates, MSDs and lab duplicates evaluate the effect field and laboratory conditions have on precision. The only exception noted in the duplicates did not indicate there was an out-of-control condition for the batch. Overall, the precision of the laboratory data is acceptable, and no data is qualified due to lack of precision.

Accuracy

Accuracy measures the bias in a system and is evaluated using percent recovery of surrogate, spikes and LCS. LCS evaluates bias due to laboratory conditions. Bias due to field and laboratory conditions is evaluated using surrogates and matrix spikes. Our review indicates accuracy was acceptable.

Representatives

Equipment blanks, laboratory blanks and field duplicate samples evaluate how representative analytical results are of actual site conditions. Blanks evaluate the introduction of “analytes” from outside sources such as field equipment, transportation equipment and the laboratory environment. In general there were minimal problems with laboratory and field equipment introducing analytes that were not representative of sample conditions. The one documented problem is summarized here.

- TPH-Dx was detected in the laboratory method blanks for two batches at concentrations above the MDL but below the RL. TPH-Dx detected within 5 times the blank concentration would not be considered representative of field conditions for field samples in the same batches.

Duplicate field samples attempt to evaluate how representative a sample is of site conditions. Two duplicate water samples were reviewed. All analytes in both cases met QC criteria. Overall, the representativeness of the laboratory data is acceptable.

Completeness

Completeness evaluates how successful the data set is at being valid. Our data group was 100 percent complete with respect to rejected analysis.

Qualified TPH-Dx Data

Laboratory Identification	Sample Name	Analyte	Original Result	Qualified Result	Method Detection Limit	Reporting Limit	Units
P4G0721-03	MW-6(M)	TPH-Dx	0.209 J	0.250 U B	0.0870	0.250	mg/l
P4G0721-05	MW-33(A)	TPH-Dx	0.511	0.511 J B	0.0870	0.250	mg/l
P4G0721-10	MW-22(A)	TPH-Dx	0.157 J	0.250 U B	0.0870	0.250	mg/l
P4G0721-12	MW-35(A)	TPH-Dx	0.124 J	0.250 U B	0.0870	0.250	mg/l
P4G0721-13	MW-1(F)	TPH-Dx	0.183 J	0.250 U B	0.0870	0.250	mg/l
P4G0721-14	MW-23(A)	TPH-Dx	0.103 J	0.250 U B	0.0870	0.250	mg/l
P4G0721-17	MW-19(A)	TPH-Dx	0.192 J	0.250 U B	0.0870	0.250	mg/l
P4G0721-18	BM-19(A)	TPH-Dx	0.153 J	0.250 U B	0.0870	0.250	mg/l
P4G0721-19	MW-47(A)	TPH-Dx	0.120 J	0.250 J B	0.0870	0.250	mg/l
P4G0721-20	MW-48(A)	TPH-Dx	0.210 J	0.250 J B	0.0870	0.250	mg/l
P4G0721-21	MW-46(A)	TPH-Dx	0.120 J	0.250 U B	0.0870	0.250	mg/l

REFERENCES

USEPA (U.S. Environmental Protection Agency). 2002. USEPA Contract Laboratory Program, National Functional Guidelines For Inorganics Data Review. Office of Emergency and Remedial Response, U.S. Environmental Protection Agency. EPA 540/R-01/008.

USEPA (United States Environmental Protection Agency). 2001. USEPA Contract Laboratory Program, National Functional Guidelines for Low Concentration Organic Data Review. Office of Emergency and Remedial Response, U.S. Environmental Protection Agency. EPA 540/R-00/006.

USEPA (United States Environmental Protection Agency). 2003. Inorganic National Functional Guidelines Proposed Changes. <http://www.epa.gov/superfund/programs/clp/inorgfgchanges.htm>

EnviroLogic Resources, Inc. RI/FS and IRAM Development Work Plan, Phase I, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon, July 15, 2002.

EnviroLogic Resources, Inc. Work Plan Addendum, Phase 1 Ground Water Assessment, Astoria Area-Wide Petroleum Site, Astoria, Oregon, DEQ ECSI File #2277, July 2, 2003.



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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
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12 August 2004

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site RI-1

Enclosed are the results of analyses for samples received by the laboratory on 07/21/04 15:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Domenighini For Joy D. Chang
Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-10 (M)	P4G0721-01	Water	07/19/04 17:15	07/21/04 15:55
MW-7 (M)	P4G0721-02	Water	07/19/04 15:50	07/21/04 15:55
MW-6 (M)	P4G0721-03	Water	07/19/04 15:05	07/21/04 15:55
MW-32 (A)	P4G0721-04	Water	07/19/04 14:00	07/21/04 15:55
MW-33 (A)	P4G0721-05	Water	07/19/04 13:10	07/21/04 15:55
MW-34 (A)	P4G0721-06	Water	07/20/04 07:10	07/21/04 15:55
Trip Blank	P4G0721-07	Water	07/19/04 14:00	07/21/04 15:55
Trip Blank	P4G0721-08	Water	07/20/04 09:21	07/21/04 15:55
MW-30 (A)	P4G0721-09	Water	07/20/04 09:21	07/21/04 15:55
MW-22 (A)	P4G0721-10	Water	07/20/04 11:11	07/21/04 15:55
MW-31 (A)	P4G0721-11	Water	07/20/04 10:15	07/21/04 15:55
MW-35 (A)	P4G0721-12	Water	07/20/04 08:32	07/21/04 15:55
MW-1 (F)	P4G0721-13	Water	07/20/04 18:38	07/21/04 15:55
MW-23 (A)	P4G0721-14	Water	07/20/04 16:45	07/21/04 15:55
MW-21 (A)	P4G0721-15	Water	07/20/04 15:33	07/21/04 15:55
MW-20 (A)	P4G0721-16	Water	07/20/04 14:44	07/21/04 15:55
MW-19 (A)	P4G0721-17	Water	07/20/04 13:43	07/21/04 15:55
BM-19 (A)	P4G0721-18	Water	07/20/04 13:43	07/21/04 15:55
MW-47 (A)	P4G0721-19	Water	07/21/04 07:55	07/21/04 15:55
MW-48 (A)	P4G0721-20	Water	07/21/04 09:01	07/21/04 15:55
MW-46 (A)	P4G0721-21	Water	07/21/04 10:05	07/21/04 15:55
Equip Blank	P4G0721-22	Water	07/21/04 11:11	07/21/04 15:55
MW-43 (A)	P4G0721-23	Water	07/21/04 11:33	07/21/04 15:55

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
Diesel Range Organics	2.26	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	A-01
Heavy Oil Range Hydrocarbons	0.410	0.183	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	92.7 %		50-150			"	"	"	"	
MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
Diesel Range Organics	0.610	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	
Heavy Oil Range Hydrocarbons	0.196	0.183	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	80.4 %		50-150			"	"	"	"	
MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55										
Diesel Range Organics	0.209	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	80.8 %		50-150			"	"	"	"	
MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	65.2 %		50-150			"	"	"	"	
MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
Diesel Range Organics	0.511	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	0.198	0.183	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	52.8 %		50-150			"	"	"	"	
MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	53.1 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
Diesel Range Organics	3.73	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	95.8 %		50-150			"	"	"	"	
MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
Diesel Range Organics	0.157	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	95.4 %		50-150			"	"	"	"	
MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55										
Diesel Range Organics	2.21	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	108 %		50-150			"	"	"	"	
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
Diesel Range Organics	0.124	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	91.2 %		50-150			"	"	"	"	
MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55										
Diesel Range Organics	0.183	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	100 %		50-150			"	"	"	"	
MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55										
Diesel Range Organics	0.103	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	69.5 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
Diesel Range Organics	1.67	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	95.0 %		50-150			"	"	"	"	
MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										
Diesel Range Organics	1.90	0.0870	0.250	mg/l	1	4070892	07/22/04	07/27/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	0.951	0.183	0.500	"	"	"	"	"	"	D-15
Surrogate: 1-Chlorooctadecane	65.6 %		50-150			"	"	"	"	
MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Diesel Range Organics	0.192	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	99.6 %		50-150			"	"	"	"	
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Diesel Range Organics	0.153	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	67.0 %		50-150			"	"	"	"	
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Diesel Range Organics	0.120	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	87.0 %		50-150			"	"	"	"	
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Diesel Range Organics	0.210	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	84.9 %		50-150			"	"	"	"	

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Diesel Range Organics	0.120	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	86.9 %		50-150			"	"	"	"	
MW-43 (A) (P4G0721-23) Water Sampled: 07/21/04 11:33 Received: 07/21/04 15:55										
Diesel Range Organics	1.98	0.0870	0.250	mg/l	1	4070893	07/22/04	07/23/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	0.191	0.183	0.500	"	"	"	"	"	"	J
<i>Surrogate: 1-Chlorooctadecane</i>	87.0 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

**Total Metals per EPA 200 Series Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
Lead	0.00353	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
Lead	0.00663	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55										
Lead	0.000670	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55										
Lead	0.000920	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
Lead	0.000620	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55										
Lead	ND	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	U
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
Lead	0.00479	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
Lead	0.000580	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55										
Lead	0.00182	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
Lead	0.00103	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55										
Lead	0.000390	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55										
Lead	0.00156	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
Lead	0.000620	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										
Lead	0.00382	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Lead	0.00802	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Lead	0.00818	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Lead	0.0150	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Lead	0.0587	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

**Total Metals per EPA 200 Series Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-46 (A) (P4G0721-21) Water										
Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Lead	0.00118	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-43 (A) (P4G0721-23) Water										
Sampled: 07/21/04 11:33 Received: 07/21/04 15:55										
Lead	0.000290	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J

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Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	34.4	0.147	0.200	"	"	"	"	"	"	
Toluene	6.09	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	7.38	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	31.2	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	2.57	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	4.16	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	4.76	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	28.9	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	37.1	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	103 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	98.5 %		80-120			"	"	"	"	
MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.260	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.120	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	0.170	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	110 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	95.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	90.0 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	107 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	99.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	94.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	93.0 %		80-120			"	"	"	"	

MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	91.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	101 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	91.0 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	3.47	0.147	0.200	"	"	"	"	"	"	
Toluene	0.620	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	0.650	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.890	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	1.61	0.138	0.500	"	"	"	"	"	"	
<i>Surrogate: 4-BFB</i>	<i>97.5 %</i>		<i>75-120</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>102 %</i>		<i>77-129</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>		<i>80-121</i>							
<i>Surrogate: Toluene-d8</i>	<i>93.0 %</i>		<i>80-120</i>							
MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>95.0 %</i>		<i>75-120</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>102 %</i>		<i>77-129</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>		<i>80-121</i>							
<i>Surrogate: Toluene-d8</i>	<i>91.5 %</i>		<i>80-120</i>							

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Trip Blank (P4G0721-07) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	93.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	96.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	100 %		80-120			"	"	"	"	

Trip Blank (P4G0721-08) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	94.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	96.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	98.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	3.74	10.0	ug/l	20	4071229	07/28/04	07/28/04	EPA 8260B	Da, U
1,2-Dichloroethane	ND	2.84	10.0	"	"	"	"	"	"	Da, U
Benzene	407	2.94	4.00	"	"	"	"	"	"	Da
Toluene	128	3.10	10.0	"	"	"	"	"	"	Da
Ethylbenzene	2070	2.20	10.0	"	"	"	"	"	"	Da
Xylenes (total)	1330	5.24	20.0	"	"	"	"	"	"	Da
Methyl tert-butyl ether	ND	1.73	40.0	"	"	"	"	"	"	Da, U
Naphthalene	1240	1.98	40.0	"	"	"	"	"	"	Da
1,2,4-Trimethylbenzene	3.40	1.77	20.0	"	"	"	"	"	"	J, Da
1,3,5-Trimethylbenzene	60.6	3.14	10.0	"	"	"	"	"	"	Da
Isopropylbenzene	83.2	2.14	40.0	"	"	"	"	"	"	Da
n-Propylbenzene	218	2.76	10.0	"	"	"	"	"	"	Da
Surrogate: 4-BFB	104 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	98.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	98.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	101 %		80-120			"	"	"	"	
MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.260	0.147	0.200	"	"	"	"	"	"	
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	1.25	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.460	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.810	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	0.180	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	96.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	103 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	95.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	1.87	5.00	ug/l	10	4071229	07/28/04	07/28/04	EPA 8260B	Da, U
1,2-Dichloroethane	ND	1.42	5.00	"	"	"	"	"	"	Da, U
Benzene	1020	1.47	2.00	"	"	"	"	"	"	Da
Toluene	67.9	1.55	5.00	"	"	"	"	"	"	Da
Ethylbenzene	911	1.10	5.00	"	"	"	"	"	"	Da
Xylenes (total)	356	2.62	10.0	"	"	"	"	"	"	Da
Methyl tert-butyl ether	ND	0.865	20.0	"	"	"	"	"	"	Da, U
Naphthalene	191	0.989	20.0	"	"	"	"	"	"	Da
1,2,4-Trimethylbenzene	1.10	0.884	10.0	"	"	"	"	"	"	J, Da
1,3,5-Trimethylbenzene	4.80	1.57	5.00	"	"	"	"	"	"	J, Da
Isopropylbenzene	44.8	1.07	20.0	"	"	"	"	"	"	Da
n-Propylbenzene	119	1.38	5.00	"	"	"	"	"	"	Da
Surrogate: 4-BFB	100 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	99.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	101 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	100 %		80-120			"	"	"	"	
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	94.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	96.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	102 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	93.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.230	0.147	0.200	"	"	"	"	"	"	
Toluene	0.320	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	2.48	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	2.00	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	2.05	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.370	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.180	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	0.400	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	100 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	103 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	99.5 %		80-120			"	"	"	"	

MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	95.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	111 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	107 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	101 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.260	0.147	0.200	"	"	"	"	"	"	
Toluene	0.170	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	3.01	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.880	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	2.96	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.220	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	3.90	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	13.3	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	97.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	99.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	99.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	94.0 %		80-120			"	"	"	"	
MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	2.98	0.147	0.200	"	"	"	"	"	"	
Toluene	1.18	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	14.8	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	63.3	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	5.12	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	19.6	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	1.89	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	4.03	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	3.00	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	106 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	105 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	104 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.310	0.147	0.200	"	"	"	"	"	"	
Toluene	0.190	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	1.58	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.610	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	1.09	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	0.130	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	0.200	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	102 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	106 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	104 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	102 %		80-120			"	"	"	"	
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.460	0.147	0.200	"	"	"	"	"	"	
Toluene	0.250	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	2.13	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.730	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	0.110	0.0865	2.00	"	"	"	"	"	"	J
Naphthalene	0.920	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.110	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	0.210	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	99.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	91.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	95.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	101 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	97.5 %		80-120			"	"	"	"	

MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	94.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	97.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	98.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	102 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	98.5 %		80-120			"	"	"	"	

Equip Blank (P4G0721-22) Water Sampled: 07/21/04 11:11 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	100 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	107 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	108 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	108 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-43 (A) (P4G0721-23) Water Sampled: 07/21/04 11:33 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	103 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	110 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	109 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	96.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
Acenaphthene	0.365	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	0.0147	0.0100	0.0100	"	"	"	"	"	"	
Benzo (a) pyrene	0.0111	0.0100	0.0100	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0118	0.0100	0.0100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	0.0106	0.0100	0.0100	"	"	"	"	"	"	
Chrysene	0.0133	0.0100	0.0100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.154	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	2.50	2.50	"	25	"	"	08/03/04	"	R-03, Da, U
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	07/30/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	45.3 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	78.0 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	52.5 %		10-150			"	"	"	"	

MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0868	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	95.3 %		25-150			4071076	07/26/04	07/30/04	EPA 8270m	
Surrogate: Pyrene-d10	100 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	51.7 %		10-150			"	"	"	"	

MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55

Acenaphthene	0.228	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	79.7 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	91.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	58.1 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

Surrogate: Fluorene-d10	49.2 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	67.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	57.2 %		10-150			"	"	"	"	

MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
Acenaphthene	0.0528	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.825	0.825	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	90.7 %		25-150			4071076	07/26/04	07/30/04	EPA 8270m	
Surrogate: Pyrene-d10	106 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	72.0 %		10-150			"	"	"	"	

MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	0.0262	0.0100	0.0100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	0.0267	0.0100	0.0100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	0.0261	0.0100	0.0100	"	"	"	"	"	"	
Chrysene	0.0306	0.0100	0.0100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	0.0111	0.0100	0.0100	"	"	"	"	"	"	
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	0.0120	0.0100	0.0100	"	"	"	"	"	"	
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	83.5 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	101 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	62.7 %		10-150			"	"	"	"	

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North Creek Analytical, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
Acenaphthene	0.0744	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.0577	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	1130	25.0	25.0	"	500	"	"	08/03/04	"	Da
Phenanthrene	0.0513	0.0500	0.0500	"	1	"	"	07/30/04	"	
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	62.3 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	96.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	60.2 %		10-150			"	"	"	"	

MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.930	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	75.4 %		25-150			4071076	07/26/04	08/02/04	EPA 8270m	
Surrogate: Pyrene-d10	84.7 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	46.6 %		10-150			"	"	"	"	

MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55

Acenaphthene	0.0652	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	167	12.5	12.5	"	250	"	"	08/03/04	"	Da
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	07/30/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	57.2 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	68.6 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	38.7 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

Surrogate: Fluorene-d10	87.7 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	96.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	73.3 %		10-150			"	"	"	"	

MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55										
Acenaphthene	0.102	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.0967	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	1.25	1.25	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	74.2 %		25-150			4071076	07/26/04	08/02/04	EPA 8270m	
Surrogate: Pyrene-d10	92.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	40.6 %		10-150			"	"	"	"	

MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0525	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	86.4 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	92.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	73.7 %		10-150			"	"	"	"	

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
Acenaphthene	0.318	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.516	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	2.09	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	0.108	0.0500	0.0500	"	"	"	"	"	"	
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	80.9 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	94.1 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	48.7 %		10-150			"	"	"	"	

MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										R-05a
Acenaphthene	0.306	0.100	0.100	ug/l	2	4071076	07/26/04	08/03/04	EPA 8270m	Da
Acenaphthylene	ND	0.100	0.100	"	"	"	"	"	"	Da, U
Anthracene	ND	0.100	0.100	"	"	"	"	"	"	Da, U
Benzo (a) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Benzo (a) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Benzo (b) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Benzo (ghi) perylene	ND	0.100	0.100	"	"	"	"	"	"	Da, U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Chrysene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Dibenzo (a,h) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	Da, U
Fluorene	0.504	0.100	0.100	"	"	"	"	"	"	Da
Indeno (1,2,3-cd) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Naphthalene	2.77	0.100	0.100	"	"	"	"	"	"	Da
Phenanthrene	0.128	0.100	0.100	"	"	"	"	"	"	Da
Pyrene	ND	0.100	0.100	"	"	"	"	"	"	Da, U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55 **R-05a**

Surrogate: Fluorene-d10	76.7 %		25-150			4071076	07/26/04	08/03/04	EPA 8270m	Da
Surrogate: Pyrene-d10	80.5 %		23-150			"	"	"	"	Da
Surrogate: Benzo (a) pyrene-d12	37.4 %		10-150			"	"	"	"	Da

MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.150	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	94.5 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	100 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	78.4 %		10-150			"	"	"	"	

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.168	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	72.9 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	89.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	60.6 %		10-150			"	"	"	"	

MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	93.6 %		25-150			4071076	07/26/04	08/02/04	EPA 8270m	
Surrogate: Pyrene-d10	88.6 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	43.6 %		10-150			"	"	"	"	

MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55

Acenaphthene	0.201	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	0.0243	0.0100	0.0100	"	"	"	"	"	"	
Benzo (a) pyrene	0.0177	0.0100	0.0100	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0202	0.0100	0.0100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	0.0176	0.0100	0.0100	"	"	"	"	"	"	
Chrysene	0.0282	0.0100	0.0100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	0.106	0.0500	0.0500	"	"	"	"	"	"	
Fluorene	0.0602	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0140	0.0100	0.0100	"	"	"	"	"	"	
Naphthalene	0.457	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	0.108	0.0500	0.0500	"	"	"	"	"	"	
Pyrene	0.0883	0.0500	0.0500	"	"	"	"	"	"	
Surrogate: Fluorene-d10	91.5 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	90.7 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	51.3 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager

North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

Surrogate: Fluorene-d10	86.9 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	91.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	46.6 %		10-150			"	"	"	"	

MW-43 (A) (P4G0721-23) Water Sampled: 07/21/04 11:33 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0605	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-43 (A) (P4G0721-23) Water **Sampled: 07/21/04 11:33** **Received: 07/21/04 15:55**

Surrogate: Fluorene-d10	84.7 %		25-150			4071076	07/26/04	08/02/04	EPA 8270m	
Surrogate: Pyrene-d10	103 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	59.3 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Bend

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	2240	500	800	ug/l	10	0407066	07/26/04	07/26/04	NW TPH-G	R-05, D
Surrogate: a,a,a-TFT (FID)	76.5 %		50-150			"	"	"	"	
MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	91.2 %		50-150			"	"	"	"	
MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	98.8 %		50-150			"	"	"	"	
MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	95.8 %		50-150			"	"	"	"	
MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	116	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	95.3 %		50-150			"	"	"	"	
MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	90.0 %		50-150			"	"	"	"	
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	12600	500	800	ug/l	10	0407066	07/26/04	07/26/04	NW TPH-G	R-05, D
Surrogate: a,a,a-TFT (FID)	87.2 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

**Gasoline Hydrocarbons per NW TPH-Gx Method
 North Creek Analytical - Bend**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	91.8 %		50-150			"	"	"	"	
MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	6140	500	800	ug/l	10	0407066	07/26/04	07/26/04	NW TPH-G	R-05, D
Surrogate: a,a,a-TFT (FID)	85.7 %		50-150			"	"	"	"	
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	92.6 %		50-150			"	"	"	"	
MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	197	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	115 %		50-150			"	"	"	"	
MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	103 %		50-150			"	"	"	"	
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	847	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	106 %		50-150			"	"	"	"	
MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	821	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	104 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Bend

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	99.3 %		50-150			"	"	"	"	
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	103 %		50-150			"	"	"	"	
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/27/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	101 %		50-150			"	"	"	"	
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/27/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	99.1 %		50-150			"	"	"	"	
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/27/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	99.1 %		50-150			"	"	"	"	
MW-43 (A) (P4G0721-23) Water Sampled: 07/21/04 11:33 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/27/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	105 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4070892: Prepared 07/22/04 Using EPA 3510 Fuels

Blank (4070892-BLK1)

Diesel Range Organics	0.104	0.0870	0.250	mg/l							J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"							U
Surrogate: 1-Chlorooctadecane	0.0757			"	0.0960		78.9	50-150			

LCS (4070892-BS1)

Diesel Range Organics	2.22	0.0870	0.250	mg/l	2.50		88.8	50-150			
Heavy Oil Range Hydrocarbons	1.47	0.183	0.500	"	1.50		98.0	50-150			
Surrogate: 1-Chlorooctadecane	0.0772			"	0.0960		80.4	50-150			

LCS Dup (4070892-BSD1)

Diesel Range Organics	2.33	0.0870	0.250	mg/l	2.50		93.2	50-150	4.84	50	
Heavy Oil Range Hydrocarbons	1.52	0.183	0.500	"	1.50		101	50-150	3.34	50	
Surrogate: 1-Chlorooctadecane	0.0795			"	0.0960		82.8	50-150			

Matrix Spike (4070892-MS1)

Source: P4G0721-06

Diesel Range Organics	1.90	0.0870	0.250	mg/l	2.36	ND	80.5	50-150			
Heavy Oil Range Hydrocarbons	1.29	0.183	0.500	"	1.42	ND	90.8	50-150			
Surrogate: 1-Chlorooctadecane	0.0588			"	0.0906		64.9	50-150			

Matrix Spike Dup (4070892-MSD1)

Source: P4G0721-06

Diesel Range Organics	2.00	0.0870	0.250	mg/l	2.36	ND	84.7	50-150	5.13	50	
Heavy Oil Range Hydrocarbons	1.35	0.183	0.500	"	1.42	ND	95.1	50-150	4.55	50	
Surrogate: 1-Chlorooctadecane	0.0569			"	0.0906		62.8	50-150			

Batch 4070893: Prepared 07/22/04 Using EPA 3510 Fuels

Blank (4070893-BLK1)

Diesel Range Organics	0.118	0.0870	0.250	mg/l							J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"							U
Surrogate: 1-Chlorooctadecane	0.0748			"	0.0960		77.9	50-150			

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4070893: Prepared 07/22/04 Using EPA 3510 Fuels

LCS (4070893-BS1)

Diesel Range Organics	2.24	0.0870	0.250	mg/l	2.50		89.6	50-150			
Heavy Oil Range Hydrocarbons	1.57	0.183	0.500	"	1.50		105	50-150			
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.0892</i>			"	<i>0.0960</i>		<i>92.9</i>	<i>50-150</i>			

LCS Dup (4070893-BSD1)

Diesel Range Organics	2.25	0.0870	0.250	mg/l	2.50		90.0	50-150	0.445	50	
Heavy Oil Range Hydrocarbons	1.56	0.183	0.500	"	1.50		104	50-150	0.639	50	
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.0862</i>			"	<i>0.0960</i>		<i>89.8</i>	<i>50-150</i>			

North Creek Analytical - Portland

Lisa Domenighini For Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Total Metals per EPA 200 Series Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4070905: Prepared 07/22/04 Using EPA 200/3005											
Blank (4070905-BLK1)											
Lead	ND	0.000224	0.00100	mg/l							U
LCS (4070905-BS1)											
Lead	0.101	0.000224	0.00100	mg/l	0.100		101	85-115			
LCS Dup (4070905-BSD1)											
Lead	0.101	0.000224	0.00100	mg/l	0.100		101	85-115	0.00	20	
Duplicate (4070905-DUP1) Source: P4G0721-01											
Lead	0.00352	0.000224	0.00100	mg/l		0.00353			0.284	20	
Matrix Spike (4070905-MS1) Source: P4G0721-06											
Lead	0.0934	0.000224	0.00100	mg/l	0.100	ND	93.4	70-130			
Matrix Spike Dup (4070905-MSD1) Source: P4G0721-06											
Lead	0.0975	0.000224	0.00100	mg/l	0.100	ND	97.5	70-130	4.30	20	

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EnviroLogic Resources, Inc.
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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071229: Prepared 07/28/04 Using EPA 5030B

Blank (4071229-BLK1)

1,2-Dibromoethane	ND	0.187	0.500	ug/l							U
1,2-Dichloroethane	ND	0.142	0.500	"							U
Benzene	ND	0.147	0.200	"							U
Toluene	ND	0.155	0.500	"							U
Ethylbenzene	ND	0.110	0.500	"							U
Xylenes (total)	ND	0.262	1.00	"							U
Methyl tert-butyl ether	ND	0.0865	2.00	"							U
Naphthalene	ND	0.0989	2.00	"							U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"							U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"							U
Isopropylbenzene	ND	0.107	2.00	"							U
n-Propylbenzene	ND	0.138	0.500	"							U
Surrogate: 4-BFB	19.4			"	20.0		97.0	75-120			
Surrogate: 1,2-DCA-d4	19.5			"	20.0		97.5	77-129			
Surrogate: Dibromofluoromethane	19.8			"	20.0		99.0	80-121			
Surrogate: Toluene-d8	20.0			"	20.0		100	80-120			

LCS (4071229-BS1)

Benzene	19.7	0.147	0.200	ug/l	20.0		98.5	80-120			
Toluene	20.2	0.155	0.500	"	20.0		101	80-124			
Ethylbenzene	21.6	0.110	0.500	"	20.0		108	80-120			
Xylenes (total)	66.0	0.262	1.00	"	60.0		110	73-124			
Methyl tert-butyl ether	20.9	0.0865	2.00	"	20.0		104	80-129			
Naphthalene	25.8	0.0989	2.00	"	20.0		129	72-149			
Surrogate: 4-BFB	21.3			"	20.0		106	75-120			
Surrogate: 1,2-DCA-d4	20.2			"	20.0		101	77-129			
Surrogate: Dibromofluoromethane	20.8			"	20.0		104	80-121			
Surrogate: Toluene-d8	20.2			"	20.0		101	80-120			

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071229: Prepared 07/28/04 Using EPA 5030B

Matrix Spike (4071229-MS1)

Source: P4G0721-06

Benzene	20.1	0.147	0.200	ug/l	20.0	ND	100	80-124			
Toluene	17.6	0.155	0.500	"	20.0	ND	88.0	79.7-131			
Ethylbenzene	18.5	0.110	0.500	"	20.0	ND	92.5	80-124			
Xylenes (total)	38.6	0.262	1.00	"	60.0	ND	64.3	44.6-154			
Methyl tert-butyl ether	21.2	0.0865	2.00	"	20.0	ND	106	80-130			
Naphthalene	25.2	0.0989	2.00	"	20.0	ND	126	69-163			
<i>Surrogate: 4-BFB</i>	18.5			"	20.0		92.5	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.2			"	20.0		101	77-129			
<i>Surrogate: Dibromofluoromethane</i>	20.8			"	20.0		104	80-121			
<i>Surrogate: Toluene-d8</i>	19.2			"	20.0		96.0	80-120			

Matrix Spike Dup (4071229-MSD1)

Source: P4G0721-06

Benzene	20.0	0.147	0.200	ug/l	20.0	ND	100	80-124	0.499	25	
Toluene	17.4	0.155	0.500	"	20.0	ND	87.0	79.7-131	1.14	25	
Ethylbenzene	18.5	0.110	0.500	"	20.0	ND	92.5	80-124	0.00	25	
Xylenes (total)	39.1	0.262	1.00	"	60.0	ND	65.2	44.6-154	1.29	25	
Methyl tert-butyl ether	20.9	0.0865	2.00	"	20.0	ND	104	80-130	1.43	25	
Naphthalene	25.3	0.0989	2.00	"	20.0	ND	126	69-163	0.396	25	
<i>Surrogate: 4-BFB</i>	21.0			"	20.0		105	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.0			"	20.0		100	77-129			
<i>Surrogate: Dibromofluoromethane</i>	19.4			"	20.0		97.0	80-121			
<i>Surrogate: Toluene-d8</i>	19.1			"	20.0		95.5	80-120			

Batch 4071360: Prepared 07/30/04 Using EPA 5030B

Blank (4071360-BLK1)

1,2-Dibromoethane	ND	0.187	0.500	ug/l							U
1,2-Dichloroethane	ND	0.142	0.500	"							U
Benzene	ND	0.147	0.200	"							U
Toluene	ND	0.155	0.500	"							U
Ethylbenzene	ND	0.110	0.500	"							U
Xylenes (total)	ND	0.262	1.00	"							U
Methyl tert-butyl ether	ND	0.0865	2.00	"							U

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EnviroLogic Resources, Inc.
P.O. Box 80762
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071360: Prepared 07/30/04 Using EPA 5030B

Blank (4071360-BLK1)

Naphthalene	ND	0.0989	2.00	ug/l							U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"							U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"							U
Isopropylbenzene	ND	0.107	2.00	"							U
n-Propylbenzene	ND	0.138	0.500	"							U
<i>Surrogate: 4-BFB</i>	20.9			"	20.0		104	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	22.1			"	20.0		110	77-129			
<i>Surrogate: Dibromofluoromethane</i>	22.2			"	20.0		111	80-121			
<i>Surrogate: Toluene-d8</i>	22.6			"	20.0		113	80-120			

LCS (4071360-BS1)

Benzene	20.6	0.147	0.200	ug/l	20.0		103	80-120			
Toluene	21.3	0.155	0.500	"	20.0		106	80-124			
Ethylbenzene	20.9	0.110	0.500	"	20.0		104	80-120			
Xylenes (total)	64.8	0.262	1.00	"	60.0		108	73-124			
Methyl tert-butyl ether	21.2	0.0865	2.00	"	20.0		106	80-129			
Naphthalene	17.4	0.0989	2.00	"	20.0		87.0	72-149			
<i>Surrogate: 4-BFB</i>	21.4			"	20.0		107	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.5			"	20.0		102	77-129			
<i>Surrogate: Dibromofluoromethane</i>	21.0			"	20.0		105	80-121			
<i>Surrogate: Toluene-d8</i>	21.3			"	20.0		106	80-120			

Matrix Spike (4071360-MS1)

Source: P4G0721-14

Benzene	21.0	0.147	0.200	ug/l	20.0	ND	105	80-124			
Toluene	18.6	0.155	0.500	"	20.0	ND	93.0	79.7-131			
Ethylbenzene	18.3	0.110	0.500	"	20.0	ND	91.5	80-124			
Xylenes (total)	41.6	0.262	1.00	"	60.0	ND	69.3	44.6-154			
Methyl tert-butyl ether	21.4	0.0865	2.00	"	20.0	ND	107	80-130			
Naphthalene	16.9	0.0989	2.00	"	20.0	ND	84.5	69-163			
<i>Surrogate: 4-BFB</i>	20.2			"	20.0		101	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.8			"	20.0		104	77-129			
<i>Surrogate: Dibromofluoromethane</i>	21.5			"	20.0		108	80-121			

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071360: Prepared 07/30/04 Using EPA 5030B

Matrix Spike (4071360-MS1)

Source: P4G0721-14

Surrogate: Toluene-d8	20.4			ug/l	20.0		102	80-120			
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Matrix Spike Dup (4071360-MSD1)

Source: P4G0721-14

Benzene	20.6	0.147	0.200	ug/l	20.0	ND	103	80-124	1.92	25	
Toluene	17.0	0.155	0.500	"	20.0	ND	85.0	79.7-131	8.99	25	
Ethylbenzene	16.7	0.110	0.500	"	20.0	ND	83.5	80-124	9.14	25	
Xylenes (total)	33.1	0.262	1.00	"	60.0	ND	55.2	44.6-154	22.8	25	
Methyl tert-butyl ether	21.1	0.0865	2.00	"	20.0	ND	106	80-130	1.41	25	
Naphthalene	16.5	0.0989	2.00	"	20.0	ND	82.5	69-163	2.40	25	
Surrogate: 4-BFB	21.0			"	20.0		105	75-120			
Surrogate: 1,2-DCA-d4	21.2			"	20.0		106	77-129			
Surrogate: Dibromofluoromethane	21.7			"	20.0		108	80-121			
Surrogate: Toluene-d8	20.0			"	20.0		100	80-120			

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 Environmental Laboratory Network

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071076: Prepared 07/26/04 Using EPA 3520/600 Series

Blank (4071076-BLK1)

Acenaphthene	ND	0.0500	0.0500	ug/l							U
Acenaphthylene	ND	0.0500	0.0500	"							U
Anthracene	ND	0.0500	0.0500	"							U
Benzo (a) anthracene	ND	0.0100	0.0100	"							U
Benzo (a) pyrene	ND	0.0100	0.0100	"							U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"							U
Benzo (ghi) perylene	ND	0.0500	0.0500	"							U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"							U
Chrysene	ND	0.0100	0.0100	"							U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"							U
Fluoranthene	ND	0.0500	0.0500	"							U
Fluorene	ND	0.0500	0.0500	"							U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"							U
Naphthalene	ND	0.0500	0.0500	"							U
Phenanthrene	ND	0.0500	0.0500	"							U
Pyrene	ND	0.0500	0.0500	"							U
<i>Surrogate: Fluorene-d10</i>	<i>1.81</i>			<i>"</i>	<i>2.50</i>		<i>72.4</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>2.04</i>			<i>"</i>	<i>2.50</i>		<i>81.6</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.43</i>			<i>"</i>	<i>2.50</i>		<i>57.2</i>	<i>10-150</i>			

LCS (4071076-BS1)

Acenaphthene	3.32	0.0500	0.0500	ug/l	2.50		133	26-150			
Benzo (a) pyrene	2.24	0.0100	0.0100	"	2.50		89.6	38-150			
Pyrene	2.66	0.0500	0.0500	"	2.50		106	33-150			
<i>Surrogate: Fluorene-d10</i>	<i>2.61</i>			<i>"</i>	<i>2.50</i>		<i>104</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>2.58</i>			<i>"</i>	<i>2.50</i>		<i>103</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>2.24</i>			<i>"</i>	<i>2.50</i>		<i>89.6</i>	<i>10-150</i>			

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:16

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071076: Prepared 07/26/04 Using EPA 3520/600 Series

LCS Dup (4071076-BSD1)

Acenaphthene	0.662	0.0500	0.0500	ug/l	2.50		26.5	26-150	134	60	A-05
Benzo (a) pyrene	1.65	0.0100	0.0100	"	2.50		66.0	38-150	30.3	60	
Pyrene	1.54	0.0500	0.0500	"	2.50		61.6	33-150	53.3	60	
<i>Surrogate: Fluorene-d10</i>	<i>0.633</i>			"	<i>2.50</i>		<i>25.3</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>1.51</i>			"	<i>2.50</i>		<i>60.4</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.61</i>			"	<i>2.50</i>		<i>64.4</i>	<i>10-150</i>			

North Creek Analytical - Portland

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

**Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Bend**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0407066: Prepared 07/26/04 Using EPA 5030B / 5035											
Blank (0407066-BLK1)											
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l							Ua
Surrogate: a,a,a-TFT (FID)	101			"	100		101	50-150			
LCS (0407066-BS1)											
Gasoline Range Hydrocarbons	450	50.0	80.0	ug/l	500		90.0	70-130			
Surrogate: a,a,a-TFT (FID)	103			"	100		103	50-150			
Duplicate (0407066-DUP1)						Source: P4G0721-15					
Gasoline Range Hydrocarbons	831	50.0	80.0	ug/l		847			1.91	50	
Surrogate: a,a,a-TFT (FID)	100			"	100		100	50-150			
Duplicate (0407066-DUP2)						Source: P4G0721-21					
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l		ND			NA	50	Ua
Surrogate: a,a,a-TFT (FID)	99.1			"	100		99.1	50-150			
Matrix Spike (0407066-MS1)						Source: P4G0721-06					
Gasoline Range Hydrocarbons	432	50.0	80.0	ug/l	500	ND	86.4	0-200			
Surrogate: a,a,a-TFT (FID)	102			"	100		102	50-150			
Matrix Spike Dup (0407066-MSD1)						Source: P4G0721-06					
Gasoline Range Hydrocarbons	423	50.0	80.0	ug/l	500	ND	84.6	0-200	2.11	200	
Surrogate: a,a,a-TFT (FID)	101			"	100		101	50-150			

North Creek Analytical - Portland

Lisa Domenighini For Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:16

Notes and Definitions

- A-01 Detected hydrocarbons appear to be due to mainly to weathered gas and biogenic interference, however, some weathered diesel may be present as well.
- A-05 %RPD for the LCS/LCS Duplicate QC samples are outside of specified criteria. Recoveries for these QC Control samples are within acceptable limits.
- D Data reported from a dilution.
- D-08 Detected hydrocarbons in the diesel range appear to be due to overlap of gasoline range hydrocarbons.
- D-15 Detected hydrocarbons have non-petroleum peaks or elution pattern that suggests the presence of biogenic interference.
- D-17 Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel or possibly biogenic interference.
- Da Data reported from a preparation or analytical dilution.
- J Estimated value.
- R-03 The reporting limit for this analyte was raised due to matrix interference.
- R-05 Reporting limits raised due to dilution necessary for analysis.
- R-05a Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- U Analyte included in the analysis but not detected.
- Ua Analyte included in the analysis, but not detected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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10 August 2004

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site RI-1

Enclosed are the results of analyses for samples received by the laboratory on 07/21/04 15:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Domenighini For Joy D. Chang
Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-10 (M)	P4G0721-01	Water	07/19/04 17:15	07/21/04 15:55
MW-7 (M)	P4G0721-02	Water	07/19/04 15:50	07/21/04 15:55
MW-6 (M)	P4G0721-03	Water	07/19/04 15:05	07/21/04 15:55
MW-32 (A)	P4G0721-04	Water	07/19/04 14:00	07/21/04 15:55
MW-33 (A)	P4G0721-05	Water	07/19/04 13:10	07/21/04 15:55
MW-34 (A)	P4G0721-06	Water	07/20/04 07:10	07/21/04 15:55
Trip Blank	P4G0721-07	Water	07/19/04 14:00	07/21/04 15:55
Trip Blank	P4G0721-08	Water	07/20/04 09:21	07/21/04 15:55
MW-30 (A)	P4G0721-09	Water	07/20/04 09:21	07/21/04 15:55
MW-22 (A)	P4G0721-10	Water	07/20/04 11:11	07/21/04 15:55
MW-31 (A)	P4G0721-11	Water	07/20/04 10:15	07/21/04 15:55
MW-35 (A)	P4G0721-12	Water	07/20/04 08:32	07/21/04 15:55
MW-1 (F)	P4G0721-13	Water	07/20/04 18:38	07/21/04 15:55
MW-23 (A)	P4G0721-14	Water	07/20/04 16:45	07/21/04 15:55
MW-21 (A)	P4G0721-15	Water	07/20/04 15:33	07/21/04 15:55
MW-20 (A)	P4G0721-16	Water	07/20/04 14:44	07/21/04 15:55
MW-19 (A)	P4G0721-17	Water	07/20/04 13:43	07/21/04 15:55
BM-19 (A)	P4G0721-18	Water	07/20/04 13:43	07/21/04 15:55
MW-47 (A)	P4G0721-19	Water	07/21/04 07:55	07/21/04 15:55
MW-48 (A)	P4G0721-20	Water	07/21/04 09:01	07/21/04 15:55
MW-46 (A)	P4G0721-21	Water	07/21/04 10:05	07/21/04 15:55
Equip Blank	P4G0721-22	Water	07/21/04 11:11	07/21/04 15:55
MW-43 (A)	P4G0721-23	Water	07/21/04 11:33	07/21/04 15:55

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/10/04 17:30

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
Diesel Range Organics	2.26	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	A-01
Heavy Oil Range Hydrocarbons	0.410	0.183	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	92.7 %		50-150			"	"	"	"	
MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
Diesel Range Organics	0.610	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	
Heavy Oil Range Hydrocarbons	0.196	0.183	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	80.4 %		50-150			"	"	"	"	
MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55										
Diesel Range Organics	0.209	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	80.8 %		50-150			"	"	"	"	
MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	65.2 %		50-150			"	"	"	"	
MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
Diesel Range Organics	0.511	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	0.198	0.183	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	52.8 %		50-150			"	"	"	"	
MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	53.1 %		50-150			"	"	"	"	

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
Diesel Range Organics	3.73	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	95.8 %		50-150			"	"	"	"	
MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
Diesel Range Organics	0.157	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	95.4 %		50-150			"	"	"	"	
MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55										
Diesel Range Organics	2.21	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	108 %		50-150			"	"	"	"	
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
Diesel Range Organics	0.124	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	91.2 %		50-150			"	"	"	"	
MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55										
Diesel Range Organics	0.183	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	100 %		50-150			"	"	"	"	
MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55										
Diesel Range Organics	0.103	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	69.5 %		50-150			"	"	"	"	

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
Diesel Range Organics	1.67	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	95.0 %		50-150			"	"	"	"	
MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										
Diesel Range Organics	1.90	0.0870	0.250	mg/l	1	4070892	07/22/04	07/27/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	0.951	0.183	0.500	"	"	"	"	"	"	D-15
<i>Surrogate: 1-Chlorooctadecane</i>	65.6 %		50-150			"	"	"	"	
MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Diesel Range Organics	0.192	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	99.6 %		50-150			"	"	"	"	
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Diesel Range Organics	0.153	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	67.0 %		50-150			"	"	"	"	
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Diesel Range Organics	0.120	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	87.0 %		50-150			"	"	"	"	
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Diesel Range Organics	0.210	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	84.9 %		50-150			"	"	"	"	

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EnviroLogic Resources, Inc.
P.O. Box 80762
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Diesel Range Organics	0.120	0.0870	0.250	mg/l	1	4070892	07/22/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	86.9 %		50-150			"	"	"	"	
MW-43 (A) (P4G0721-23) Water Sampled: 07/21/04 11:33 Received: 07/21/04 15:55										
Diesel Range Organics	1.98	0.0870	0.250	mg/l	1	4070893	07/22/04	07/23/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	0.191	0.183	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	87.0 %		50-150			"	"	"	"	

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 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
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Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
Lead	0.00353	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
Lead	0.00663	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55										
Lead	0.000670	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55										
Lead	0.000920	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
Lead	0.000620	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55										
Lead	ND	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	U
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
Lead	0.00479	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
Lead	0.000580	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55										
Lead	0.00182	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	

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Reported:
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**Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
Lead	0.00103	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55										
Lead	0.000390	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55										
Lead	0.00156	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
Lead	0.000620	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J
MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										
Lead	0.00382	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Lead	0.00802	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Lead	0.00818	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Chromium	0.00684	0.000720	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
Lead	0.0150	0.000224	0.00100	"	"	"	"	"	"	
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Chromium	0.00691	0.000720	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
Lead	0.0587	0.000224	0.00100	"	"	"	"	"	"	

North Creek Analytical - Portland

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Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-46 (A) (P4G0721-21) Water										
Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Chromium	0.0280	0.000720	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
Lead	0.00118	0.000224	0.00100	"	"	"	"	"	"	
MW-43 (A) (P4G0721-23) Water										
Sampled: 07/21/04 11:33 Received: 07/21/04 15:55										
Lead	0.000290	0.000224	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	J

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**Dissolved Metals per EPA 200 Series Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Chromium	0.000970	0.000720	0.00100	mg/l	1	4071039	07/23/04	07/27/04	EPA 200.8	J
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Chromium	ND	0.000720	0.00100	mg/l	1	4071039	07/23/04	07/27/04	EPA 200.8	U
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Chromium	0.0217	0.000720	0.00100	mg/l	1	4071039	07/23/04	07/27/04	EPA 200.8	

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**Hexavalent Chromium per EPA Method 7195
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Hexavalent Chromium	ND	0.00455	0.0100	mg/l	1	4070848	07/21/04	08/10/04	EPA 7195	U
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Hexavalent Chromium	ND	0.00455	0.0100	mg/l	1	4070848	07/21/04	08/10/04	EPA 7195	U
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Hexavalent Chromium	0.0148	0.00455	0.0100	mg/l	1	4070848	07/21/04	08/10/04	EPA 7195	

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**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	34.4	0.147	0.200	"	"	"	"	"	"	
Toluene	6.09	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	7.38	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	31.2	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	2.57	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	4.16	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	4.76	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	28.9	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	37.1	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	103 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	98.5 %		80-120			"	"	"	"	
MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.260	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.120	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	0.170	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	110 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	95.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	90.0 %		80-120			"	"	"	"	

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	107 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	99.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	94.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	93.0 %		80-120			"	"	"	"	

MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	91.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	101 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	91.0 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	3.47	0.147	0.200	"	"	"	"	"	"	
Toluene	0.620	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	0.650	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.890	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	1.61	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	97.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	93.0 %		80-120			"	"	"	"	
MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	95.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	102 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	91.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Trip Blank (P4G0721-07) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	93.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	96.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	100 %		80-120			"	"	"	"	

Trip Blank (P4G0721-08) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	94.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	96.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	98.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	3.74	10.0	ug/l	20	4071229	07/28/04	07/28/04	EPA 8260B	Da, U
1,2-Dichloroethane	ND	2.84	10.0	"	"	"	"	"	"	Da, U
Benzene	407	2.94	4.00	"	"	"	"	"	"	Da
Toluene	128	3.10	10.0	"	"	"	"	"	"	Da
Ethylbenzene	2070	2.20	10.0	"	"	"	"	"	"	Da
Xylenes (total)	1330	5.24	20.0	"	"	"	"	"	"	Da
Methyl tert-butyl ether	ND	1.73	40.0	"	"	"	"	"	"	Da, U
Naphthalene	1240	1.98	40.0	"	"	"	"	"	"	Da
1,2,4-Trimethylbenzene	3.40	1.77	20.0	"	"	"	"	"	"	J, Da
1,3,5-Trimethylbenzene	60.6	3.14	10.0	"	"	"	"	"	"	Da
Isopropylbenzene	83.2	2.14	40.0	"	"	"	"	"	"	Da
n-Propylbenzene	218	2.76	10.0	"	"	"	"	"	"	Da
Surrogate: 4-BFB	104 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	98.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	98.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	101 %		80-120			"	"	"	"	
MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.260	0.147	0.200	"	"	"	"	"	"	
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	1.25	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.460	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.810	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	0.180	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	96.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	103 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	95.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	1.87	5.00	ug/l	10	4071229	07/28/04	07/28/04	EPA 8260B	Da, U
1,2-Dichloroethane	ND	1.42	5.00	"	"	"	"	"	"	Da, U
Benzene	1020	1.47	2.00	"	"	"	"	"	"	Da
Toluene	67.9	1.55	5.00	"	"	"	"	"	"	Da
Ethylbenzene	911	1.10	5.00	"	"	"	"	"	"	Da
Xylenes (total)	356	2.62	10.0	"	"	"	"	"	"	Da
Methyl tert-butyl ether	ND	0.865	20.0	"	"	"	"	"	"	Da, U
Naphthalene	191	0.989	20.0	"	"	"	"	"	"	Da
1,2,4-Trimethylbenzene	1.10	0.884	10.0	"	"	"	"	"	"	J, Da
1,3,5-Trimethylbenzene	4.80	1.57	5.00	"	"	"	"	"	"	J, Da
Isopropylbenzene	44.8	1.07	20.0	"	"	"	"	"	"	Da
n-Propylbenzene	119	1.38	5.00	"	"	"	"	"	"	Da
<i>Surrogate: 4-BFB</i>	<i>100 %</i>		<i>75-120</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>99.5 %</i>		<i>77-129</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>		<i>80-121</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>80-120</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>94.0 %</i>		<i>75-120</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>96.0 %</i>		<i>77-129</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>		<i>80-121</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>93.5 %</i>		<i>80-120</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071229	07/28/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.230	0.147	0.200	"	"	"	"	"	"	
Toluene	0.320	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	2.48	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	2.00	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	2.05	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.370	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.180	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	0.400	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	100 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	103 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	99.5 %		80-120			"	"	"	"	

MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	95.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	111 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	107 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	101 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager

North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.260	0.147	0.200	"	"	"	"	"	"	
Toluene	0.170	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	3.01	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.880	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	2.96	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.220	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	3.90	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	13.3	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	97.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	99.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	99.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	94.0 %		80-120			"	"	"	"	
MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	2.98	0.147	0.200	"	"	"	"	"	"	
Toluene	1.18	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	14.8	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	63.3	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	5.12	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	19.6	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	1.89	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	4.03	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	3.00	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	106 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	105 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	104 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.310	0.147	0.200	"	"	"	"	"	"	
Toluene	0.190	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	1.58	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.610	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	1.09	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	0.130	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	0.200	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	102 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	106 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	104 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	102 %		80-120			"	"	"	"	
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.460	0.147	0.200	"	"	"	"	"	"	
Toluene	0.250	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	2.13	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.730	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	0.110	0.0865	2.00	"	"	"	"	"	"	J
Naphthalene	0.920	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.110	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	0.210	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	99.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	91.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	95.0 %		75-120							
Surrogate: 1,2-DCA-d4	100 %		77-129							
Surrogate: Dibromofluoromethane	101 %		80-121							
Surrogate: Toluene-d8	97.5 %		80-120							

MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	94.5 %		75-120							
Surrogate: 1,2-DCA-d4	100 %		77-129							
Surrogate: Dibromofluoromethane	100 %		80-121							
Surrogate: Toluene-d8	97.5 %		80-120							

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	98.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	102 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	98.5 %		80-120			"	"	"	"	

Equip Blank (P4G0721-22) Water Sampled: 07/21/04 11:11 Received: 07/21/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	100 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	107 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	108 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	108 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
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 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/10/04 17:30

Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-43 (A) (P4G0721-23) Water Sampled: 07/21/04 11:33 Received: 07/21/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071360	07/30/04	07/30/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	103 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	110 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	109 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	96.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
Acenaphthene	0.365	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	0.0147	0.0100	0.0100	"	"	"	"	"	"	
Benzo (a) pyrene	0.0111	0.0100	0.0100	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0118	0.0100	0.0100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	0.0106	0.0100	0.0100	"	"	"	"	"	"	
Chrysene	0.0133	0.0100	0.0100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.154	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	2.50	2.50	"	25	"	"	08/03/04	"	R-03, Da, U
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	07/30/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	45.3 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	78.0 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	52.5 %		10-150			"	"	"	"	

MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0868	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	95.3 %		25-150			4071076	07/26/04	07/30/04	EPA 8270m	
Surrogate: Pyrene-d10	100 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	51.7 %		10-150			"	"	"	"	

MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55

Acenaphthene	0.228	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	79.7 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	91.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	58.1 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

Surrogate: Fluorene-d10	49.2 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	67.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	57.2 %		10-150			"	"	"	"	

MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
Acenaphthene	0.0528	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.825	0.825	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	90.7 %		25-150			4071076	07/26/04	07/30/04	EPA 8270m	
Surrogate: Pyrene-d10	106 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	72.0 %		10-150			"	"	"	"	

MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	0.0262	0.0100	0.0100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	0.0267	0.0100	0.0100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	0.0261	0.0100	0.0100	"	"	"	"	"	"	
Chrysene	0.0306	0.0100	0.0100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	0.0111	0.0100	0.0100	"	"	"	"	"	"	
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	0.0120	0.0100	0.0100	"	"	"	"	"	"	
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	83.5 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	101 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	62.7 %		10-150			"	"	"	"	

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
Acenaphthene	0.0744	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.0577	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	1130	25.0	25.0	"	500	"	"	08/03/04	"	Da
Phenanthrene	0.0513	0.0500	0.0500	"	1	"	"	07/30/04	"	
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	62.3 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	96.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	60.2 %		10-150			"	"	"	"	

MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.930	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	75.4 %		25-150			4071076	07/26/04	08/02/04	EPA 8270m	
Surrogate: Pyrene-d10	84.7 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	46.6 %		10-150			"	"	"	"	

MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55

Acenaphthene	0.0652	0.0500	0.0500	ug/l	1	4071076	07/26/04	07/30/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	167	12.5	12.5	"	250	"	"	08/03/04	"	Da
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	07/30/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	57.2 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	68.6 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	38.7 %		10-150			"	"	"	"	

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Lisa Domenighini For Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

Surrogate: Fluorene-d10	87.7 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	96.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	73.3 %		10-150			"	"	"	"	

MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55										
Acenaphthene	0.102	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.0967	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	1.25	1.25	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	74.2 %		25-150			4071076	07/26/04	08/02/04	EPA 8270m	
Surrogate: Pyrene-d10	92.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	40.6 %		10-150			"	"	"	"	

MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0525	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	86.4 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	92.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	73.7 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
Acenaphthene	0.318	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.516	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	2.09	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	0.108	0.0500	0.0500	"	"	"	"	"	"	
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	80.9 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	94.1 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	48.7 %		10-150			"	"	"	"	

MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										R-05a
Acenaphthene	0.306	0.100	0.100	ug/l	2	4071076	07/26/04	08/03/04	EPA 8270m	Da
Acenaphthylene	ND	0.100	0.100	"	"	"	"	"	"	Da, U
Anthracene	ND	0.100	0.100	"	"	"	"	"	"	Da, U
Benzo (a) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Benzo (a) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Benzo (b) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Benzo (ghi) perylene	ND	0.100	0.100	"	"	"	"	"	"	Da, U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Chrysene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Dibenzo (a,h) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	Da, U
Fluorene	0.504	0.100	0.100	"	"	"	"	"	"	Da
Indeno (1,2,3-cd) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	Da, U
Naphthalene	2.77	0.100	0.100	"	"	"	"	"	"	Da
Phenanthrene	0.128	0.100	0.100	"	"	"	"	"	"	Da
Pyrene	ND	0.100	0.100	"	"	"	"	"	"	Da, U

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55 **R-05a**

Surrogate: Fluorene-d10	76.7 %		25-150			4071076	07/26/04	08/03/04	EPA 8270m	Da
Surrogate: Pyrene-d10	80.5 %		23-150			"	"	"	"	Da
Surrogate: Benzo (a) pyrene-d12	37.4 %		10-150			"	"	"	"	Da

MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.150	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	94.5 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	100 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	78.4 %		10-150			"	"	"	"	

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.168	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	72.9 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	89.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	60.6 %		10-150			"	"	"	"	

MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55

Surrogate: Fluorene-d10	93.6 %		25-150			4071076	07/26/04	08/02/04	EPA 8270m	
Surrogate: Pyrene-d10	88.6 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	43.6 %		10-150			"	"	"	"	

MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55

Acenaphthene	0.201	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	0.0243	0.0100	0.0100	"	"	"	"	"	"	
Benzo (a) pyrene	0.0177	0.0100	0.0100	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0202	0.0100	0.0100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	0.0176	0.0100	0.0100	"	"	"	"	"	"	
Chrysene	0.0282	0.0100	0.0100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	0.106	0.0500	0.0500	"	"	"	"	"	"	
Fluorene	0.0602	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0140	0.0100	0.0100	"	"	"	"	"	"	
Naphthalene	0.457	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	0.108	0.0500	0.0500	"	"	"	"	"	"	
Pyrene	0.0883	0.0500	0.0500	"	"	"	"	"	"	
Surrogate: Fluorene-d10	91.5 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	90.7 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	51.3 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

Surrogate: Fluorene-d10	86.9 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	91.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	46.6 %		10-150			"	"	"	"	

MW-43 (A) (P4G0721-23) Water Sampled: 07/21/04 11:33 Received: 07/21/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071076	07/26/04	08/02/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0605	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/10/04 17:30

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-43 (A) (P4G0721-23) Water **Sampled: 07/21/04 11:33** **Received: 07/21/04 15:55**

Surrogate: Fluorene-d10	84.7 %		25-150			4071076	07/26/04	08/02/04	EPA 8270m	
Surrogate: Pyrene-d10	103 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	59.3 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Bend**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-10 (M) (P4G0721-01) Water Sampled: 07/19/04 17:15 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	2240	500	800	ug/l	10	0407066	07/26/04	07/26/04	NW TPH-G	R-05, D
Surrogate: a,a,a-TFT (FID)	76.5 %		50-150			"	"	"	"	
MW-7 (M) (P4G0721-02) Water Sampled: 07/19/04 15:50 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	91.2 %		50-150			"	"	"	"	
MW-6 (M) (P4G0721-03) Water Sampled: 07/19/04 15:05 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	98.8 %		50-150			"	"	"	"	
MW-32 (A) (P4G0721-04) Water Sampled: 07/19/04 14:00 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	95.8 %		50-150			"	"	"	"	
MW-33 (A) (P4G0721-05) Water Sampled: 07/19/04 13:10 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	116	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	95.3 %		50-150			"	"	"	"	
MW-34 (A) (P4G0721-06) Water Sampled: 07/20/04 07:10 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	90.0 %		50-150			"	"	"	"	
MW-30 (A) (P4G0721-09) Water Sampled: 07/20/04 09:21 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	12600	500	800	ug/l	10	0407066	07/26/04	07/26/04	NW TPH-G	R-05, D
Surrogate: a,a,a-TFT (FID)	87.2 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Bend**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-22 (A) (P4G0721-10) Water Sampled: 07/20/04 11:11 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	91.8 %		50-150			"	"	"	"	
MW-31 (A) (P4G0721-11) Water Sampled: 07/20/04 10:15 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	6140	500	800	ug/l	10	0407066	07/26/04	07/26/04	NW TPH-G	R-05, D
Surrogate: a,a,a-TFT (FID)	85.7 %		50-150			"	"	"	"	
MW-35 (A) (P4G0721-12) Water Sampled: 07/20/04 08:32 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	92.6 %		50-150			"	"	"	"	
MW-1 (F) (P4G0721-13) Water Sampled: 07/20/04 18:38 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	197	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	115 %		50-150			"	"	"	"	
MW-23 (A) (P4G0721-14) Water Sampled: 07/20/04 16:45 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	103 %		50-150			"	"	"	"	
MW-21 (A) (P4G0721-15) Water Sampled: 07/20/04 15:33 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	847	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	106 %		50-150			"	"	"	"	
MW-20 (A) (P4G0721-16) Water Sampled: 07/20/04 14:44 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	821	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	104 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/10/04 17:30

**Gasoline Hydrocarbons per NW TPH-Gx Method
 North Creek Analytical - Bend**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-19 (A) (P4G0721-17) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	99.3 %		50-150			"	"	"	"	
BM-19 (A) (P4G0721-18) Water Sampled: 07/20/04 13:43 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/26/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	103 %		50-150			"	"	"	"	
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/27/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	101 %		50-150			"	"	"	"	
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/27/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	99.1 %		50-150			"	"	"	"	
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/27/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	99.1 %		50-150			"	"	"	"	
MW-43 (A) (P4G0721-23) Water Sampled: 07/21/04 11:33 Received: 07/21/04 15:55										
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l	1	0407066	07/26/04	07/27/04	NW TPH-G	Ua
Surrogate: a,a,a-TFT (FID)	105 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4070892: Prepared 07/22/04 Using EPA 3510 Fuels

Blank (4070892-BLK1)

Diesel Range Organics	0.104	0.0870	0.250	mg/l							J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"							U
Surrogate: 1-Chlorooctadecane	0.0757			"	0.0960		78.9	50-150			

LCS (4070892-BS1)

Diesel Range Organics	2.22	0.0870	0.250	mg/l	2.50		88.8	50-150			
Heavy Oil Range Hydrocarbons	1.47	0.183	0.500	"	1.50		98.0	50-150			
Surrogate: 1-Chlorooctadecane	0.0772			"	0.0960		80.4	50-150			

LCS Dup (4070892-BSD1)

Diesel Range Organics	2.33	0.0870	0.250	mg/l	2.50		93.2	50-150	4.84	50	
Heavy Oil Range Hydrocarbons	1.52	0.183	0.500	"	1.50		101	50-150	3.34	50	
Surrogate: 1-Chlorooctadecane	0.0795			"	0.0960		82.8	50-150			

Matrix Spike (4070892-MS1)

Source: P4G0721-06

Diesel Range Organics	1.90	0.0870	0.250	mg/l	2.36	ND	80.5	50-150			
Heavy Oil Range Hydrocarbons	1.29	0.183	0.500	"	1.42	ND	90.8	50-150			
Surrogate: 1-Chlorooctadecane	0.0588			"	0.0906		64.9	50-150			

Matrix Spike Dup (4070892-MSD1)

Source: P4G0721-06

Diesel Range Organics	2.00	0.0870	0.250	mg/l	2.36	ND	84.7	50-150	5.13	50	
Heavy Oil Range Hydrocarbons	1.35	0.183	0.500	"	1.42	ND	95.1	50-150	4.55	50	
Surrogate: 1-Chlorooctadecane	0.0569			"	0.0906		62.8	50-150			

Batch 4070893: Prepared 07/22/04 Using EPA 3510 Fuels

Blank (4070893-BLK1)

Diesel Range Organics	0.118	0.0870	0.250	mg/l							J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"							U
Surrogate: 1-Chlorooctadecane	0.0748			"	0.0960		77.9	50-150			

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/10/04 17:30

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4070893: Prepared 07/22/04 Using EPA 3510 Fuels

LCS (4070893-BS1)

Diesel Range Organics	2.24	0.0870	0.250	mg/l	2.50		89.6	50-150			
Heavy Oil Range Hydrocarbons	1.57	0.183	0.500	"	1.50		105	50-150			
Surrogate: 1-Chlorooctadecane	0.0892			"	0.0960		92.9	50-150			

LCS Dup (4070893-BSD1)

Diesel Range Organics	2.25	0.0870	0.250	mg/l	2.50		90.0	50-150	0.445	50	
Heavy Oil Range Hydrocarbons	1.56	0.183	0.500	"	1.50		104	50-150	0.639	50	
Surrogate: 1-Chlorooctadecane	0.0862			"	0.0960		89.8	50-150			

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

Total Metals per EPA 200 Series Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4070905: Prepared 07/22/04 Using EPA 200/3005

Blank (4070905-BLK1)

Chromium	ND	0.000720	0.00100	mg/l							U
Lead	ND	0.000224	0.00100	"							U

LCS (4070905-BS1)

Chromium	0.0977	0.000720	0.00100	mg/l	0.100		97.7	85-115			
Lead	0.101	0.000224	0.00100	"	0.100		101	85-115			

LCS Dup (4070905-BSD1)

Chromium	0.0964	0.000720	0.00100	mg/l	0.100		96.4	85-115	1.34	20	
Lead	0.101	0.000224	0.00100	"	0.100		101	85-115	0.00	20	

Duplicate (4070905-DUP1)

Source: P4G0721-01

Chromium	0.00415	0.000720	0.00100	mg/l		0.00468			12.0	20	
Lead	0.00352	0.000224	0.00100	"		0.00353			0.284	20	

Matrix Spike (4070905-MS1)

Source: P4G0721-06

Chromium	0.0966	0.000720	0.00100	mg/l	0.100	ND	96.6	70-130			
Lead	0.0934	0.000224	0.00100	"	0.100	ND	93.4	70-130			

Matrix Spike Dup (4070905-MSD1)

Source: P4G0721-06

Chromium	0.104	0.000720	0.00100	mg/l	0.100	ND	104	70-130	7.38	20	
Lead	0.0975	0.000224	0.00100	"	0.100	ND	97.5	70-130	4.30	20	

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/10/04 17:30

Dissolved Metals per EPA 200 Series Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071039: Prepared 07/23/04 Using EPA 200/3005 Diss

Blank (4071039-BLK1)

Chromium	ND	0.000720	0.00100	mg/l							M-04, U
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LCS (4071039-BS1)

Chromium	0.0956	0.000720	0.00100	mg/l	0.100		95.6	85-115			M-04
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LCS Dup (4071039-BSD1)

Chromium	0.0940	0.000720	0.00100	mg/l	0.100		94.0	85-115	1.69	20	M-04
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Duplicate (4071039-DUP1)

Source: P4G0786-01

Chromium	0.000910	0.000720	0.00100	mg/l		0.000970			6.38	20	M-04, J
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Matrix Spike (4071039-MS1)

Source: P4G0786-01

Chromium	0.0990	0.000720	0.00100	mg/l	0.100	0.000970	98.0	70-130			M-04
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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/10/04 17:30

Hexavalent Chromium per EPA Method 7195 - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4070848: Prepared 07/21/04 Using EPA 7195											
Blank (4070848-BLK1)											
Hexavalent Chromium	ND	0.00455	0.0100	mg/l							U
LCS (4070848-BS1)											
Hexavalent Chromium	1.02	0.00455	0.0100	mg/l	1.00		102	85-115			
LCS Dup (4070848-BSD1)											
Hexavalent Chromium	1.02	0.00455	0.0100	mg/l	1.00		102	85-115	0.00	20	
Duplicate (4070848-DUP1) Source: P4G0690-03											
Hexavalent Chromium	ND	0.00455	0.0100	mg/l		ND			NA	20	U
Duplicate (4070848-DUP2) Source: P4G0256-07											
Hexavalent Chromium	0.135	0.00455	0.0100	mg/l		0.128			5.32	20	
Matrix Spike (4070848-MS1) Source: P4G0690-03											
Hexavalent Chromium	0.882	0.00455	0.0100	mg/l	1.00	ND	88.2	80-120			

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071229: Prepared 07/28/04 Using EPA 5030B

Blank (4071229-BLK1)

1,2-Dibromoethane	ND	0.187	0.500	ug/l							U
1,2-Dichloroethane	ND	0.142	0.500	"							U
Benzene	ND	0.147	0.200	"							U
Toluene	ND	0.155	0.500	"							U
Ethylbenzene	ND	0.110	0.500	"							U
Xylenes (total)	ND	0.262	1.00	"							U
Methyl tert-butyl ether	ND	0.0865	2.00	"							U
Naphthalene	ND	0.0989	2.00	"							U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"							U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"							U
Isopropylbenzene	ND	0.107	2.00	"							U
n-Propylbenzene	ND	0.138	0.500	"							U
Surrogate: 4-BFB	19.4			"	20.0		97.0	75-120			
Surrogate: 1,2-DCA-d4	19.5			"	20.0		97.5	77-129			
Surrogate: Dibromofluoromethane	19.8			"	20.0		99.0	80-121			
Surrogate: Toluene-d8	20.0			"	20.0		100	80-120			

LCS (4071229-BS1)

Benzene	19.7	0.147	0.200	ug/l	20.0		98.5	80-120			
Toluene	20.2	0.155	0.500	"	20.0		101	80-124			
Ethylbenzene	21.6	0.110	0.500	"	20.0		108	80-120			
Xylenes (total)	66.0	0.262	1.00	"	60.0		110	73-124			
Methyl tert-butyl ether	20.9	0.0865	2.00	"	20.0		104	80-129			
Naphthalene	25.8	0.0989	2.00	"	20.0		129	72-149			
Surrogate: 4-BFB	21.3			"	20.0		106	75-120			
Surrogate: 1,2-DCA-d4	20.2			"	20.0		101	77-129			
Surrogate: Dibromofluoromethane	20.8			"	20.0		104	80-121			
Surrogate: Toluene-d8	20.2			"	20.0		101	80-120			

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071229: Prepared 07/28/04 Using EPA 5030B

Matrix Spike (4071229-MS1)

Source: P4G0721-06

Benzene	20.1	0.147	0.200	ug/l	20.0	ND	100	80-124			
Toluene	17.6	0.155	0.500	"	20.0	ND	88.0	79.7-131			
Ethylbenzene	18.5	0.110	0.500	"	20.0	ND	92.5	80-124			
Xylenes (total)	38.6	0.262	1.00	"	60.0	ND	64.3	44.6-154			
Methyl tert-butyl ether	21.2	0.0865	2.00	"	20.0	ND	106	80-130			
Naphthalene	25.2	0.0989	2.00	"	20.0	ND	126	69-163			
<i>Surrogate: 4-BFB</i>	18.5			"	20.0		92.5	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.2			"	20.0		101	77-129			
<i>Surrogate: Dibromofluoromethane</i>	20.8			"	20.0		104	80-121			
<i>Surrogate: Toluene-d8</i>	19.2			"	20.0		96.0	80-120			

Matrix Spike Dup (4071229-MSD1)

Source: P4G0721-06

Benzene	20.0	0.147	0.200	ug/l	20.0	ND	100	80-124	0.499	25	
Toluene	17.4	0.155	0.500	"	20.0	ND	87.0	79.7-131	1.14	25	
Ethylbenzene	18.5	0.110	0.500	"	20.0	ND	92.5	80-124	0.00	25	
Xylenes (total)	39.1	0.262	1.00	"	60.0	ND	65.2	44.6-154	1.29	25	
Methyl tert-butyl ether	20.9	0.0865	2.00	"	20.0	ND	104	80-130	1.43	25	
Naphthalene	25.3	0.0989	2.00	"	20.0	ND	126	69-163	0.396	25	
<i>Surrogate: 4-BFB</i>	21.0			"	20.0		105	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.0			"	20.0		100	77-129			
<i>Surrogate: Dibromofluoromethane</i>	19.4			"	20.0		97.0	80-121			
<i>Surrogate: Toluene-d8</i>	19.1			"	20.0		95.5	80-120			

Batch 4071360: Prepared 07/30/04 Using EPA 5030B

Blank (4071360-BLK1)

1,2-Dibromoethane	ND	0.187	0.500	ug/l							U
1,2-Dichloroethane	ND	0.142	0.500	"							U
Benzene	ND	0.147	0.200	"							U
Toluene	ND	0.155	0.500	"							U
Ethylbenzene	ND	0.110	0.500	"							U
Xylenes (total)	ND	0.262	1.00	"							U
Methyl tert-butyl ether	ND	0.0865	2.00	"							U

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EnviroLogic Resources, Inc.
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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071360: Prepared 07/30/04 Using EPA 5030B

Blank (4071360-BLK1)

Naphthalene	ND	0.0989	2.00	ug/l							U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"							U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"							U
Isopropylbenzene	ND	0.107	2.00	"							U
n-Propylbenzene	ND	0.138	0.500	"							U
<i>Surrogate: 4-BFB</i>	20.9			"	20.0		104	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	22.1			"	20.0		110	77-129			
<i>Surrogate: Dibromofluoromethane</i>	22.2			"	20.0		111	80-121			
<i>Surrogate: Toluene-d8</i>	22.6			"	20.0		113	80-120			

LCS (4071360-BS1)

Benzene	20.6	0.147	0.200	ug/l	20.0		103	80-120			
Toluene	21.3	0.155	0.500	"	20.0		106	80-124			
Ethylbenzene	20.9	0.110	0.500	"	20.0		104	80-120			
Xylenes (total)	64.8	0.262	1.00	"	60.0		108	73-124			
Methyl tert-butyl ether	21.2	0.0865	2.00	"	20.0		106	80-129			
Naphthalene	17.4	0.0989	2.00	"	20.0		87.0	72-149			
<i>Surrogate: 4-BFB</i>	21.4			"	20.0		107	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.5			"	20.0		102	77-129			
<i>Surrogate: Dibromofluoromethane</i>	21.0			"	20.0		105	80-121			
<i>Surrogate: Toluene-d8</i>	21.3			"	20.0		106	80-120			

Matrix Spike (4071360-MS1)

Source: P4G0721-14

Benzene	21.0	0.147	0.200	ug/l	20.0	ND	105	80-124			
Toluene	18.6	0.155	0.500	"	20.0	ND	93.0	79.7-131			
Ethylbenzene	18.3	0.110	0.500	"	20.0	ND	91.5	80-124			
Xylenes (total)	41.6	0.262	1.00	"	60.0	ND	69.3	44.6-154			
Methyl tert-butyl ether	21.4	0.0865	2.00	"	20.0	ND	107	80-130			
Naphthalene	16.9	0.0989	2.00	"	20.0	ND	84.5	69-163			
<i>Surrogate: 4-BFB</i>	20.2			"	20.0		101	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.8			"	20.0		104	77-129			
<i>Surrogate: Dibromofluoromethane</i>	21.5			"	20.0		108	80-121			

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North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071360: Prepared 07/30/04 Using EPA 5030B

Matrix Spike (4071360-MS1)

Source: P4G0721-14

Surrogate: Toluene-d8	20.4			ug/l	20.0		102	80-120			
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Matrix Spike Dup (4071360-MSD1)

Source: P4G0721-14

Benzene	20.6	0.147	0.200	ug/l	20.0	ND	103	80-124	1.92	25	
Toluene	17.0	0.155	0.500	"	20.0	ND	85.0	79.7-131	8.99	25	
Ethylbenzene	16.7	0.110	0.500	"	20.0	ND	83.5	80-124	9.14	25	
Xylenes (total)	33.1	0.262	1.00	"	60.0	ND	55.2	44.6-154	22.8	25	
Methyl tert-butyl ether	21.1	0.0865	2.00	"	20.0	ND	106	80-130	1.41	25	
Naphthalene	16.5	0.0989	2.00	"	20.0	ND	82.5	69-163	2.40	25	
Surrogate: 4-BFB	21.0			"	20.0		105	75-120			
Surrogate: 1,2-DCA-d4	21.2			"	20.0		106	77-129			
Surrogate: Dibromofluoromethane	21.7			"	20.0		108	80-121			
Surrogate: Toluene-d8	20.0			"	20.0		100	80-120			

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager

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Page 48 of 52



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071076: Prepared 07/26/04 Using EPA 3520/600 Series

Blank (4071076-BLK1)

Acenaphthene	ND	0.0500	0.0500	ug/l							U
Acenaphthylene	ND	0.0500	0.0500	"							U
Anthracene	ND	0.0500	0.0500	"							U
Benzo (a) anthracene	ND	0.0100	0.0100	"							U
Benzo (a) pyrene	ND	0.0100	0.0100	"							U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"							U
Benzo (ghi) perylene	ND	0.0500	0.0500	"							U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"							U
Chrysene	ND	0.0100	0.0100	"							U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"							U
Fluoranthene	ND	0.0500	0.0500	"							U
Fluorene	ND	0.0500	0.0500	"							U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"							U
Naphthalene	ND	0.0500	0.0500	"							U
Phenanthrene	ND	0.0500	0.0500	"							U
Pyrene	ND	0.0500	0.0500	"							U
<i>Surrogate: Fluorene-d10</i>	<i>1.81</i>			<i>"</i>	<i>2.50</i>		<i>72.4</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>2.04</i>			<i>"</i>	<i>2.50</i>		<i>81.6</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.43</i>			<i>"</i>	<i>2.50</i>		<i>57.2</i>	<i>10-150</i>			

LCS (4071076-BS1)

Acenaphthene	3.32	0.0500	0.0500	ug/l	2.50		133	26-150			
Benzo (a) pyrene	2.24	0.0100	0.0100	"	2.50		89.6	38-150			
Pyrene	2.66	0.0500	0.0500	"	2.50		106	33-150			
<i>Surrogate: Fluorene-d10</i>	<i>2.61</i>			<i>"</i>	<i>2.50</i>		<i>104</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>2.58</i>			<i>"</i>	<i>2.50</i>		<i>103</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>2.24</i>			<i>"</i>	<i>2.50</i>		<i>89.6</i>	<i>10-150</i>			

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Lisa Domenighini For Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4071076: Prepared 07/26/04 Using EPA 3520/600 Series

LCS Dup (4071076-BSD1)

Acenaphthene	0.662	0.0500	0.0500	ug/l	2.50		26.5	26-150	134	60	A-05
Benzo (a) pyrene	1.65	0.0100	0.0100	"	2.50		66.0	38-150	30.3	60	
Pyrene	1.54	0.0500	0.0500	"	2.50		61.6	33-150	53.3	60	
<i>Surrogate: Fluorene-d10</i>	<i>0.633</i>			"	<i>2.50</i>		<i>25.3</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>1.51</i>			"	<i>2.50</i>		<i>60.4</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.61</i>			"	<i>2.50</i>		<i>64.4</i>	<i>10-150</i>			

North Creek Analytical - Portland

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P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

**Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Bend**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0407066: Prepared 07/26/04 Using EPA 5030B / 5035											
Blank (0407066-BLK1)											
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l							Ua
Surrogate: a,a,a-TFT (FID)	101			"	100		101	50-150			
LCS (0407066-BS1)											
Gasoline Range Hydrocarbons	450	50.0	80.0	ug/l	500		90.0	70-130			
Surrogate: a,a,a-TFT (FID)	103			"	100		103	50-150			
Duplicate (0407066-DUP1) Source: P4G0721-15											
Gasoline Range Hydrocarbons	831	50.0	80.0	ug/l		847			1.91	50	
Surrogate: a,a,a-TFT (FID)	100			"	100		100	50-150			
Duplicate (0407066-DUP2) Source: P4G0721-21											
Gasoline Range Hydrocarbons	ND	50.0	80.0	ug/l		ND			NA	50	Ua
Surrogate: a,a,a-TFT (FID)	99.1			"	100		99.1	50-150			
Matrix Spike (0407066-MS1) Source: P4G0721-06											
Gasoline Range Hydrocarbons	432	50.0	80.0	ug/l	500	ND	86.4	0-200			
Surrogate: a,a,a-TFT (FID)	102			"	100		102	50-150			
Matrix Spike Dup (0407066-MSD1) Source: P4G0721-06											
Gasoline Range Hydrocarbons	423	50.0	80.0	ug/l	500	ND	84.6	0-200	2.11	200	
Surrogate: a,a,a-TFT (FID)	101			"	100		101	50-150			

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/10/04 17:30

Notes and Definitions

- A-01 Detected hydrocarbons appear to be due to mainly to weathered gas and biogenic interference, however, some weathered diesel may be present as well.
- A-05 %RPD for the LCS/LCS Duplicate QC samples are outside of specified criteria. Recoveries for these QC Control samples are within acceptable limits.
- D Data reported from a dilution.
- D-08 Detected hydrocarbons in the diesel range appear to be due to overlap of gasoline range hydrocarbons.
- D-15 Detected hydrocarbons have non-petroleum peaks or elution pattern that suggests the presence of biogenic interference.
- D-17 Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel or possibly biogenic interference.
- Da Data reported from a preparation or analytical dilution.
- J Estimated value.
- M-04 Sample Filtered through 0.45 micron filter in Laboratory prior to analysis.
- R-03 The reporting limit for this analyte was raised due to matrix interference.
- R-05 Reporting limits raised due to dilution necessary for analysis.
- R-05a Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- U Analyte included in the analysis but not detected.
- Ua Analyte included in the analysis, but not detected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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12 August 2004

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site RI-1

Enclosed are the results of analyses for samples received by the laboratory on 07/21/04 15:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Domenighini For Joy D. Chang
Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-47 (A)	P4G0721-19	Water	07/21/04 07:55	07/21/04 15:55
MW-48 (A)	P4G0721-20	Water	07/21/04 09:01	07/21/04 15:55
MW-46 (A)	P4G0721-21	Water	07/21/04 10:05	07/21/04 15:55

North Creek Analytical - Portland

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P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:15

**Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Chromium	0.00684	0.000720	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Chromium	0.00691	0.000720	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Chromium	0.0280	0.000720	0.00100	mg/l	1	4070905	07/22/04	07/24/04	EPA 200.8	

North Creek Analytical - Portland

Lisa Domenighini For Joy D. Chang, Project Manager

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:15

**Dissolved Metals per EPA 200 Series Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Chromium	0.000970	0.000720	0.00100	mg/l	1	4071039	07/23/04	07/27/04	EPA 200.8	J
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Chromium	ND	0.000720	0.00100	mg/l	1	4071039	07/23/04	07/27/04	EPA 200.8	U
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Chromium	0.0217	0.000720	0.00100	mg/l	1	4071039	07/23/04	07/27/04	EPA 200.8	

North Creek Analytical - Portland

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:15

**Hexavalent Chromium per EPA Method 7195
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-47 (A) (P4G0721-19) Water Sampled: 07/21/04 07:55 Received: 07/21/04 15:55										
Hexavalent Chromium	ND	0.00455	0.0100	mg/l	1	4070848	07/21/04	08/10/04	EPA 7195	U
MW-48 (A) (P4G0721-20) Water Sampled: 07/21/04 09:01 Received: 07/21/04 15:55										
Hexavalent Chromium	ND	0.00455	0.0100	mg/l	1	4070848	07/21/04	08/10/04	EPA 7195	U
MW-46 (A) (P4G0721-21) Water Sampled: 07/21/04 10:05 Received: 07/21/04 15:55										
Hexavalent Chromium	0.0148	0.00455	0.0100	mg/l	1	4070848	07/21/04	08/10/04	EPA 7195	

North Creek Analytical - Portland

Lisa Domenighini For Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:15

**Total Metals per EPA 200 Series Methods - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4070905: Prepared 07/22/04 Using EPA 200/3005

Blank (4070905-BLK1)

Chromium	ND	0.000720	0.00100	mg/l							U
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LCS (4070905-BS1)

Chromium	0.0977	0.000720	0.00100	mg/l	0.100		97.7	85-115			
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LCS Dup (4070905-BSD1)

Chromium	0.0964	0.000720	0.00100	mg/l	0.100		96.4	85-115	1.34	20	
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Duplicate (4070905-DUP1)

Source: P4G0721-01

Chromium	0.00415	0.000720	0.00100	mg/l		0.00468			12.0	20	
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Matrix Spike (4070905-MS1)

Source: P4G0721-06

Chromium	0.0966	0.000720	0.00100	mg/l	0.100	ND	96.6	70-130			
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Matrix Spike Dup (4070905-MSD1)

Source: P4G0721-06

Chromium	0.104	0.000720	0.00100	mg/l	0.100	ND	104	70-130	7.38	20	
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North Creek Analytical - Portland

Lisa Domenighini For Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:15

Dissolved Metals per EPA 200 Series Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071039: Prepared 07/23/04 Using EPA 200/3005 Diss

Blank (4071039-BLK1)

Chromium	ND	0.000720	0.00100	mg/l							M-04, U
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LCS (4071039-BS1)

Chromium	0.0956	0.000720	0.00100	mg/l	0.100		95.6	85-115			M-04
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LCS Dup (4071039-BSD1)

Chromium	0.0940	0.000720	0.00100	mg/l	0.100		94.0	85-115	1.69	20	M-04
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Duplicate (4071039-DUP1)

Source: P4G0786-01

Chromium	0.000910	0.000720	0.00100	mg/l		0.000970			6.38	20	M-04, J
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Matrix Spike (4071039-MS1)

Source: P4G0786-01

Chromium	0.0990	0.000720	0.00100	mg/l	0.100	0.000970	98.0	70-130			M-04
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North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.013
 Project Manager: Tom Calabrese

Reported:
 08/12/04 09:15

Hexavalent Chromium per EPA Method 7195 - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4070848: Prepared 07/21/04 Using EPA 7195											
Blank (4070848-BLK1)											
Hexavalent Chromium	ND	0.00455	0.0100	mg/l							U
LCS (4070848-BS1)											
Hexavalent Chromium	1.02	0.00455	0.0100	mg/l	1.00		102	85-115			
LCS Dup (4070848-BSD1)											
Hexavalent Chromium	1.02	0.00455	0.0100	mg/l	1.00		102	85-115	0.00	20	
Duplicate (4070848-DUP1)						Source: P4G0690-03					
Hexavalent Chromium	ND	0.00455	0.0100	mg/l		ND			NA	20	U
Duplicate (4070848-DUP2)						Source: P4G0256-07					
Hexavalent Chromium	0.135	0.00455	0.0100	mg/l		0.128			5.32	20	
Matrix Spike (4070848-MS1)						Source: P4G0690-03					
Hexavalent Chromium	0.882	0.00455	0.0100	mg/l	1.00	ND	88.2	80-120			

North Creek Analytical - Portland

Lisa Domenighini For Joy D. Chang, Project Manager

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.013
Project Manager: Tom Calabrese

Reported:
08/12/04 09:15

Notes and Definitions

- J Estimated value.
- M-04 Sample Filtered through 0.45 micron filter in Laboratory prior to analysis.
- U Analyte included in the analysis but not detected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Portland

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Lisa Domenighini For Joy D. Chang, Project Manager



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16 August 2004

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site RI-1

Enclosed are the results of analyses for samples received by the laboratory on 07/23/04 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joy D. Chang
Project Manager



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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-11 (M)	P4G0839-01	Water	07/21/04 16:46	07/23/04 15:30
MW-18 (A)	P4G0839-02	Water	07/21/04 15:35	07/23/04 15:30
MW-45 (A)	P4G0839-03	Water	07/21/04 14:44	07/23/04 15:30
MW-39 (A)	P4G0839-04	Water	07/21/04 13:33	07/23/04 15:30
Trip Blank	P4G0839-05	Water	07/21/04 16:46	07/23/04 15:30
Trip Blank	P4G0839-06	Water	07/22/04 13:01	07/23/04 15:30
MW-24 (A)	P4G0839-07	Water	07/22/04 12:22	07/23/04 15:30
MW-26 (A)	P4G0839-08	Water	07/22/04 11:40	07/23/04 15:30
MW-27 (A)	P4G0839-09	Water	07/22/04 11:00	07/23/04 15:30
MW-36 (A)	P4G0839-10	Water	07/22/04 10:11	07/23/04 15:30
MW-38 (A)	P4G0839-11	Water	07/22/04 09:10	07/23/04 15:30
MW-13 (A)	P4G0839-12	Water	07/22/04 08:18	07/23/04 15:30
MW-12 (A)	P4G0839-13	Water	07/22/04 06:55	07/23/04 15:30
MW-29 (A)	P4G0839-14	Water	07/22/04 13:01	07/23/04 15:30
MW-2 (M)	P4G0839-15	Water	07/22/04 17:57	07/23/04 15:30
MW-17 (A)	P4G0839-16	Water	07/22/04 16:36	07/23/04 15:30
BM-17 (A)	P4G0839-17	Water	07/22/04 16:36	07/23/04 15:30
MW-16 (A)	P4G0839-18	Water	07/22/04 15:15	07/23/04 15:30
MW-14 (A)	P4G0839-19	Water	07/23/04 07:57	07/23/04 15:30
Equip Blank-2	P4G0839-20	Water	07/23/04 08:07	07/23/04 15:30
MW-28 (A)	P4G0839-21	Water	07/23/04 09:05	07/23/04 15:30

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-11 (M) (P4G0839-01) Water Sampled: 07/21/04 16:46 Received: 07/23/04 15:30										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4071067	07/26/04	07/27/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	129 %		50-150			"	"	"	"	
MW-18 (A) (P4G0839-02) Water Sampled: 07/21/04 15:35 Received: 07/23/04 15:30										
Diesel Range Organics	0.229	0.0870	0.250	mg/l	1	4071067	07/26/04	07/27/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	141 %		50-150			"	"	"	"	
MW-45 (A) (P4G0839-03) Water Sampled: 07/21/04 14:44 Received: 07/23/04 15:30										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4071067	07/26/04	07/27/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	132 %		50-150			"	"	"	"	
MW-39 (A) (P4G0839-04) Water Sampled: 07/21/04 13:33 Received: 07/23/04 15:30										
Diesel Range Organics	0.883	0.0870	0.250	mg/l	1	4071067	07/26/04	07/27/04	NWTPH-Dx	A-01
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	84.9 %		50-150			"	"	"	"	
MW-24 (A) (P4G0839-07) Water Sampled: 07/22/04 12:22 Received: 07/23/04 15:30										
Diesel Range Organics	0.359	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	84.2 %		50-150			"	"	"	"	
MW-26 (A) (P4G0839-08) Water Sampled: 07/22/04 11:40 Received: 07/23/04 15:30										
Diesel Range Organics	3.96	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	85.1 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-27 (A) (P4G0839-09) Water Sampled: 07/22/04 11:00 Received: 07/23/04 15:30										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	59.9 %		50-150			"	"	"	"	
MW-36 (A) (P4G0839-10) Water Sampled: 07/22/04 10:11 Received: 07/23/04 15:30										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	57.6 %		50-150			"	"	"	"	
MW-38 (A) (P4G0839-11) Water Sampled: 07/22/04 09:10 Received: 07/23/04 15:30										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	62.7 %		50-150			"	"	"	"	
MW-13 (A) (P4G0839-12) Water Sampled: 07/22/04 08:18 Received: 07/23/04 15:30										
Diesel Range Organics	1.04	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	58.6 %		50-150			"	"	"	"	
MW-12 (A) (P4G0839-13) Water Sampled: 07/22/04 06:55 Received: 07/23/04 15:30										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	57.6 %		50-150			"	"	"	"	
MW-29 (A) (P4G0839-14) Water Sampled: 07/22/04 13:01 Received: 07/23/04 15:30										
Diesel Range Organics	3.17	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	70.3 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (M) (P4G0839-15) Water Sampled: 07/22/04 17:57 Received: 07/23/04 15:30										
Diesel Range Organics	3.58	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	0.294	0.183	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	63.1 %		50-150			"	"	"	"	
MW-17 (A) (P4G0839-16) Water Sampled: 07/22/04 16:36 Received: 07/23/04 15:30										
Diesel Range Organics	0.137	0.0870	0.250	mg/l	1	4071067	07/26/04	07/26/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	67.5 %		50-150			"	"	"	"	
BM-17 (A) (P4G0839-17) Water Sampled: 07/22/04 16:36 Received: 07/23/04 15:30										
Diesel Range Organics	0.110	0.0870	0.250	mg/l	1	4071067	07/26/04	07/27/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	60.4 %		50-150			"	"	"	"	
MW-16 (A) (P4G0839-18) Water Sampled: 07/22/04 15:15 Received: 07/23/04 15:30										
Diesel Range Organics	0.551	0.0870	0.250	mg/l	1	4071068	07/26/04	07/26/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	93.5 %		50-150			"	"	"	"	
MW-14 (A) (P4G0839-19) Water Sampled: 07/23/04 07:57 Received: 07/23/04 15:30										
Diesel Range Organics	ND	0.0870	0.250	mg/l	1	4071068	07/26/04	07/26/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	79.8 %		50-150			"	"	"	"	
MW-28 (A) (P4G0839-21) Water Sampled: 07/23/04 09:05 Received: 07/23/04 15:30										
Diesel Range Organics	1.39	0.0870	0.250	mg/l	1	4071068	07/26/04	07/26/04	NWTPH-Dx	A-02
Heavy Oil Range Hydrocarbons	0.678	0.183	0.500	"	"	"	"	"	"	D-15
Surrogate: 1-Chlorooctadecane	105 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-11 (M) (P4G0839-01) Water	Sampled: 07/21/04 16:46 Received: 07/23/04 15:30									
Lead	0.000450	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	J
MW-18 (A) (P4G0839-02) Water	Sampled: 07/21/04 15:35 Received: 07/23/04 15:30									
Lead	0.00549	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	
MW-45 (A) (P4G0839-03) Water	Sampled: 07/21/04 14:44 Received: 07/23/04 15:30									
Lead	0.000800	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	J
MW-39 (A) (P4G0839-04) Water	Sampled: 07/21/04 13:33 Received: 07/23/04 15:30									
Lead	0.000570	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	J
MW-24 (A) (P4G0839-07) Water	Sampled: 07/22/04 12:22 Received: 07/23/04 15:30									
Lead	0.00109	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	
MW-26 (A) (P4G0839-08) Water	Sampled: 07/22/04 11:40 Received: 07/23/04 15:30									
Lead	0.00422	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	
MW-27 (A) (P4G0839-09) Water	Sampled: 07/22/04 11:00 Received: 07/23/04 15:30									
Lead	0.000240	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	J
MW-36 (A) (P4G0839-10) Water	Sampled: 07/22/04 10:11 Received: 07/23/04 15:30									
Lead	0.00468	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	
MW-38 (A) (P4G0839-11) Water	Sampled: 07/22/04 09:10 Received: 07/23/04 15:30									
Lead	0.000620	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	J

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-13 (A) (P4G0839-12) Water Sampled: 07/22/04 08:18 Received: 07/23/04 15:30										
Lead	0.00318	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	
MW-12 (A) (P4G0839-13) Water Sampled: 07/22/04 06:55 Received: 07/23/04 15:30										
Lead	0.000500	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	J
MW-29 (A) (P4G0839-14) Water Sampled: 07/22/04 13:01 Received: 07/23/04 15:30										
Lead	0.00745	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	
MW-2 (M) (P4G0839-15) Water Sampled: 07/22/04 17:57 Received: 07/23/04 15:30										
Lead	0.0217	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	
MW-17 (A) (P4G0839-16) Water Sampled: 07/22/04 16:36 Received: 07/23/04 15:30										
Lead	ND	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	U
BM-17 (A) (P4G0839-17) Water Sampled: 07/22/04 16:36 Received: 07/23/04 15:30										
Lead	ND	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	U
MW-16 (A) (P4G0839-18) Water Sampled: 07/22/04 15:15 Received: 07/23/04 15:30										
Lead	0.00131	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	
MW-14 (A) (P4G0839-19) Water Sampled: 07/23/04 07:57 Received: 07/23/04 15:30										
Lead	ND	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	U
MW-28 (A) (P4G0839-21) Water Sampled: 07/23/04 09:05 Received: 07/23/04 15:30										
Lead	0.0152	0.000224	0.00100	mg/l	1	4071082	07/26/04	07/29/04	EPA 200.8	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-11 (M) (P4G0839-01) Water Sampled: 07/21/04 16:46 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.440	0.147	0.200	"	"	"	"	"	"	
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	98.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	96.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	104 %		80-120			"	"	"	"	

MW-18 (A) (P4G0839-02) Water Sampled: 07/21/04 15:35 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	44.1	0.147	0.200	"	"	"	"	"	"	
Toluene	3.18	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	1.92	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	1.68	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.520	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	0.0900	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	0.340	0.157	0.500	"	"	"	"	"	"	J
Isopropylbenzene	9.41	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	19.0	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	102 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	98.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	98.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	97.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-45 (A) (P4G0839-03) Water Sampled: 07/21/04 14:44 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	0.110	0.110	0.500	"	"	"	"	"	"	J
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	92.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	99.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	94.0 %		80-120			"	"	"	"	
MW-39 (A) (P4G0839-04) Water Sampled: 07/21/04 13:33 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	1.70	0.147	0.200	"	"	"	"	"	"	
Toluene	0.260	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	6.32	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	13.2	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	13.8	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	7.49	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	1.90	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	2.77	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	4.40	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	95.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	102 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	100 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trip Blank (P4G0839-05) Water Sampled: 07/21/04 16:46 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	97.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	106 %		80-120			"	"	"	"	
Trip Blank (P4G0839-06) Water Sampled: 07/22/04 13:01 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	99.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	99.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	96.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	104 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-24 (A) (P4G0839-07) Water Sampled: 07/22/04 12:22 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/28/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.550	0.147	0.200	"	"	"	"	"	"	
Toluene	0.980	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	29.5	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	15.6	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	23.0	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	48.3	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	1.40	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	3.20	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	6.53	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	102 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	102 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	103 %		80-120			"	"	"	"	
MW-26 (A) (P4G0839-08) Water Sampled: 07/22/04 11:40 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	3.74	10.0	ug/l	20	4071155	07/27/04	07/28/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	2.84	10.0	"	"	"	"	"	"	D, U
Benzene	ND	2.94	4.00	"	"	"	"	"	"	D, U
Toluene	17.2	3.10	10.0	"	"	"	"	"	"	D
Ethylbenzene	886	2.20	10.0	"	"	"	"	"	"	D
Xylenes (total)	3430	5.24	20.0	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	1.73	40.0	"	"	"	"	"	"	D, U
Naphthalene	869	1.98	40.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	3300	1.77	20.0	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	665	3.14	10.0	"	"	"	"	"	"	D
Isopropylbenzene	102	2.14	40.0	"	"	"	"	"	"	D
n-Propylbenzene	278	2.76	10.0	"	"	"	"	"	"	D
Surrogate: 4-BFB	101 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	98.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	104 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-27 (A) (P4G0839-09) Water Sampled: 07/22/04 11:00 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	0.370	0.110	0.500	"	"	"	"	"	"	J
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U

Surrogate: 4-BFB	97.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	98.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	95.5 %		80-120			"	"	"	"	

MW-36 (A) (P4G0839-10) Water Sampled: 07/22/04 10:11 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	0.540	0.110	0.500	"	"	"	"	"	"	J
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	0.140	0.138	0.500	"	"	"	"	"	"	J

Surrogate: 4-BFB	99.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	103 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-38 (A) (P4G0839-11) Water Sampled: 07/22/04 09:10 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	0.730	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.480	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.200	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	0.510	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	97.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	97.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	94.5 %		80-120			"	"	"	"	
MW-13 (A) (P4G0839-12) Water Sampled: 07/22/04 08:18 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	3.74	10.0	ug/l	20	4071155	07/27/04	07/27/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	2.84	10.0	"	"	"	"	"	"	D, U
Benzene	256	2.94	4.00	"	"	"	"	"	"	D
Toluene	30.0	3.10	10.0	"	"	"	"	"	"	D
Ethylbenzene	1290	2.20	10.0	"	"	"	"	"	"	D
Xylenes (total)	50.4	5.24	20.0	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	1.73	40.0	"	"	"	"	"	"	D, U
Naphthalene	118	1.98	40.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	8.60	1.77	20.0	"	"	"	"	"	"	J, D
1,3,5-Trimethylbenzene	45.4	3.14	10.0	"	"	"	"	"	"	D
Isopropylbenzene	137	2.14	40.0	"	"	"	"	"	"	D
n-Propylbenzene	355	2.76	10.0	"	"	"	"	"	"	D
Surrogate: 4-BFB	95.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	97.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	99.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	104 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-12 (A) (P4G0839-13) Water Sampled: 07/22/04 06:55 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	99.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	96.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	101 %		80-120			"	"	"	"	
MW-29 (A) (P4G0839-14) Water Sampled: 07/22/04 13:01 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	9.35	25.0	ug/l	50	4071155	07/27/04	07/28/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	7.10	25.0	"	"	"	"	"	"	D, U
Benzene	380	7.35	10.0	"	"	"	"	"	"	D
Toluene	5520	7.75	25.0	"	"	"	"	"	"	D
Ethylbenzene	1750	5.50	25.0	"	"	"	"	"	"	D
Xylenes (total)	8130	13.1	50.0	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	4.32	100	"	"	"	"	"	"	D, U
Naphthalene	1360	4.94	100	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	2260	4.42	50.0	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	521	7.85	25.0	"	"	"	"	"	"	D
Isopropylbenzene	98.5	5.35	100	"	"	"	"	"	"	J, D
n-Propylbenzene	270	6.90	25.0	"	"	"	"	"	"	D
Surrogate: 4-BFB	97.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	102 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-2 (M) (P4G0839-15) Water Sampled: 07/22/04 17:57 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.935	2.50	ug/l	5	4071155	07/27/04	07/28/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	0.710	2.50	"	"	"	"	"	"	D, U
Benzene	15.5	0.735	1.00	"	"	"	"	"	"	D
Toluene	7.35	0.775	2.50	"	"	"	"	"	"	D
Ethylbenzene	196	0.550	2.50	"	"	"	"	"	"	D
Xylenes (total)	29.4	1.31	5.00	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	0.432	10.0	"	"	"	"	"	"	D, U
Naphthalene	179	0.494	10.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	16.3	0.442	5.00	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	2.70	0.785	2.50	"	"	"	"	"	"	D
Isopropylbenzene	50.6	0.535	10.0	"	"	"	"	"	"	D
n-Propylbenzene	206	0.690	2.50	"	"	"	"	"	"	D

Surrogate: 4-BFB	100 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	97.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	98.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	100 %		80-120			"	"	"	"	

MW-17 (A) (P4G0839-16) Water Sampled: 07/22/04 16:36 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071315	07/29/04	07/29/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	1.22	0.147	0.200	"	"	"	"	"	"	
Toluene	1.46	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	0.860	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	1.83	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.660	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	0.440	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	1.85	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	4.37	0.138	0.500	"	"	"	"	"	"	

Surrogate: 4-BFB	92.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	103 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	99.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	97.5 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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BM-17 (A) (P4G0839-17) Water Sampled: 07/22/04 16:36 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071315	07/29/04	07/29/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	1.18	0.147	0.200	"	"	"	"	"	"	
Toluene	1.09	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	0.580	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	1.12	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.680	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	0.160	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	1.75	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	3.95	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	95.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	97.0 %		80-120			"	"	"	"	

MW-16 (A) (P4G0839-18) Water Sampled: 07/22/04 15:15 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071155	07/27/04	07/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	7.26	0.147	0.200	"	"	"	"	"	"	
Toluene	2.15	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	1.39	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	2.83	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.490	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	0.480	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	13.3	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	25.1	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	102 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	98.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	100 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-14 (A) (P4G0839-19) Water Sampled: 07/23/04 07:57 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071315	07/29/04	07/29/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	90.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	102 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	96.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	99.0 %		80-120			"	"	"	"	

Equip Blank-2 (P4G0839-20) Water Sampled: 07/23/04 08:07 Received: 07/23/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4071315	07/29/04	07/29/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	87.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	96.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	97.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	98.0 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-28 (A) (P4G0839-21) Water Sampled: 07/23/04 09:05 Received: 07/23/04 15:30										
1,2-Dibromoethane	ND	0.935	2.50	ug/l	5	4071315	07/29/04	07/29/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	0.710	2.50	"	"	"	"	"	"	D, U
Benzene	72.2	0.735	1.00	"	"	"	"	"	"	D
Toluene	15.8	0.775	2.50	"	"	"	"	"	"	D
Ethylbenzene	141	0.550	2.50	"	"	"	"	"	"	D
Xylenes (total)	412	1.31	5.00	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	0.432	10.0	"	"	"	"	"	"	D, U
Naphthalene	68.6	0.494	10.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	130	0.442	5.00	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	28.4	0.785	2.50	"	"	"	"	"	"	D
Isopropylbenzene	6.55	0.535	10.0	"	"	"	"	"	"	J, D
n-Propylbenzene	18.2	0.690	2.50	"	"	"	"	"	"	D
Surrogate: 4-BFB	95.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	104 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	106 %		80-120			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-11 (M) (P4G0839-01) Water Sampled: 07/21/04 16:46 Received: 07/23/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0150	0.0150	"	"	"	"	"	"	R-03, U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.110	0.110	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	94.9 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	97.0 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	67.4 %		10-150			"	"	"	"	

MW-18 (A) (P4G0839-02) Water Sampled: 07/21/04 15:35 Received: 07/23/04 15:30										
Acenaphthene	0.428	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	R-03, U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.113	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.483	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-18 (A) (P4G0839-02) Water Sampled: 07/21/04 15:35 Received: 07/23/04 15:30

Surrogate: Fluorene-d10	83.5 %		25-150			4071238	07/28/04	08/03/04	EPA 8270m	
Surrogate: Pyrene-d10	87.7 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	45.8 %		10-150			"	"	"	"	

MW-45 (A) (P4G0839-03) Water Sampled: 07/21/04 14:44 Received: 07/23/04 15:30

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.225	0.225	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	87.7 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	83.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	66.9 %		10-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-39 (A) (P4G0839-04) Water Sampled: 07/21/04 13:33 Received: 07/23/04 15:30										
Acenaphthene	1.40	0.500	0.500	ug/l	10	4071238	07/28/04	08/05/04	EPA 8270m	D
Acenaphthylene	ND	0.500	0.500	"	"	"	"	"	"	R-03, D, U
Anthracene	0.156	0.0500	0.0500	"	1	"	"	08/04/04	"	
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	1.67	0.500	0.500	"	10	"	"	08/05/04	"	D
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	1	"	"	08/04/04	"	U
Naphthalene	10.7	0.500	0.500	"	10	"	"	08/05/04	"	D
Phenanthrene	0.631	0.0500	0.0500	"	1	"	"	08/04/04	"	
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	77.7 %		25-150			"	"	08/05/04	"	D
Surrogate: Pyrene-d10	95.8 %		23-150			"	"	08/04/04	"	
Surrogate: Benzo (a) pyrene-d12	87.8 %		10-150			"	"	"	"	

MW-24 (A) (P4G0839-07) Water Sampled: 07/22/04 12:22 Received: 07/23/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0150	0.0150	"	"	"	"	"	"	R-03, U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	13.4	0.500	0.500	"	10	"	"	08/05/04	"	D
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	08/03/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-24 (A) (P4G0839-07) Water Sampled: 07/22/04 12:22 Received: 07/23/04 15:30

Surrogate: Fluorene-d10	91.1 %		25-150			4071238	07/28/04	08/03/04	EPA 8270m	
Surrogate: Pyrene-d10	92.4 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	88.1 %		10-150			"	"	"	"	

MW-26 (A) (P4G0839-08) Water Sampled: 07/22/04 11:40 Received: 07/23/04 15:30

R-05a

Acenaphthene	ND	2.50	2.50	ug/l	50	4071238	07/28/04	08/04/04	EPA 8270m	D, U
Acenaphthylene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Anthracene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Chrysene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Fluoranthene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Fluorene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Naphthalene	534	25.0	25.0	"	500	"	"	08/05/04	"	D
Phenanthrene	ND	2.50	2.50	"	50	"	"	08/04/04	"	D, U
Pyrene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Surrogate: Fluorene-d10	50.8 %		25-150			"	"	"	"	D
Surrogate: Pyrene-d10	42.8 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	47.5 %		10-150			"	"	"	"	D

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-27 (A) (P4G0839-09) Water Sampled: 07/22/04 11:00 Received: 07/23/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.125	0.125	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	113 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	111 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	106 %		10-150			"	"	"	"	

MW-36 (A) (P4G0839-10) Water Sampled: 07/22/04 10:11 Received: 07/23/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-36 (A) (P4G0839-10) Water **Sampled: 07/22/04 10:11** **Received: 07/23/04 15:30** **X**

Surrogate: Fluorene-d10	23.6 %		25-150			4071238	07/28/04	08/03/04	EPA 8270m	S-10
Surrogate: Pyrene-d10	27.4 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	22.6 %		10-150			"	"	"	"	

MW-36 (A) (P4G0839-10RE1) Water **Sampled: 07/22/04 10:11** **Received: 07/23/04 15:30** **O-07, X**

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4080328	08/09/04	08/11/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	88.6 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	80.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	89.0 %		10-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-38 (A) (P4G0839-11) Water Sampled: 07/22/04 09:10 Received: 07/23/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	R-03, U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	R-03, U
Chrysene	0.0412	0.0100	0.0100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	100 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	106 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	79.7 %		10-150			"	"	"	"	

MW-13 (A) (P4G0839-12) Water Sampled: 07/22/04 08:18 Received: 07/23/04 15:30											R-05a
Acenaphthene	ND	0.500	0.500	ug/l	10	4071238	07/28/04	08/04/04	EPA 8270m		D, U
Acenaphthylene	ND	0.500	0.500	"	"	"	"	"	"		D, U
Anthracene	ND	0.500	0.500	"	"	"	"	"	"		D, U
Benzo (a) anthracene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Benzo (a) pyrene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Benzo (b) fluoranthene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Benzo (ghi) perylene	ND	0.500	0.500	"	"	"	"	"	"		D, U
Benzo (k) fluoranthene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Chrysene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Dibenzo (a,h) anthracene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Fluoranthene	ND	0.500	0.500	"	"	"	"	"	"		D, U
Fluorene	ND	0.500	0.500	"	"	"	"	"	"		D, U
Indeno (1,2,3-cd) pyrene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Naphthalene	122	5.00	5.00	"	100	"	"	08/05/04	"		D
Phenanthrene	ND	0.500	0.500	"	10	"	"	08/04/04	"		D, U
Pyrene	ND	0.500	0.500	"	"	"	"	"	"		D, U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-13 (A) (P4G0839-12) Water Sampled: 07/22/04 08:18 Received: 07/23/04 15:30 R-05a										
Surrogate: Fluorene-d10	69.5 %		25-150			4071238	07/28/04	08/04/04	EPA 8270m	D
Surrogate: Pyrene-d10	53.4 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	29.3 %		10-150			"	"	"	"	D
MW-12 (A) (P4G0839-13) Water Sampled: 07/22/04 06:55 Received: 07/23/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	0.0139	0.0100	0.0100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	0.0102	0.0100	0.0100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	0.0150	0.0100	0.0100	"	"	"	"	"	"	
Chrysene	0.0144	0.0100	0.0100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0584	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	101 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	94.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	80.9 %		10-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-29 (A) (P4G0839-14) Water Sampled: 07/22/04 13:01 Received: 07/23/04 15:30 R-05a										
Acenaphthene	ND	2.50	2.50	ug/l	50	4071238	07/28/04	08/04/04	EPA 8270m	D, U
Acenaphthylene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Anthracene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Chrysene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Fluoranthene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Fluorene	ND	2.50	2.50	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Naphthalene	1040	25.0	25.0	"	500	"	"	08/05/04	"	D
Phenanthrene	ND	2.50	2.50	"	50	"	"	08/04/04	"	D, U
Pyrene	ND	2.50	2.50	"	"	"	"	"	"	D, U

Surrogate: Fluorene-d10	68.2 %		25-150			"	"	"	"	D
Surrogate: Pyrene-d10	53.4 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	37.9 %		10-150			"	"	"	"	D

MW-2 (M) (P4G0839-15) Water Sampled: 07/22/04 17:57 Received: 07/23/04 15:30 R-05a										
Acenaphthene	1.41	0.500	0.500	ug/l	10	4071238	07/28/04	08/04/04	EPA 8270m	D
Acenaphthylene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Anthracene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Chrysene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Fluoranthene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Fluorene	1.83	0.500	0.500	"	"	"	"	"	"	D
Indeno (1,2,3-cd) pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Naphthalene	132	5.00	5.00	"	100	"	"	08/05/04	"	D
Phenanthrene	1.55	0.500	0.500	"	10	"	"	08/04/04	"	D

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (M) (P4G0839-15) Water										
Sampled: 07/22/04 17:57 Received: 07/23/04 15:30										R-05a
Pyrene	ND	0.500	0.500	ug/l	10	4071238	07/28/04	08/04/04	EPA 8270m	D, U
Surrogate: Fluorene-d10	80.1 %		25-150			"	"	"	"	D
Surrogate: Pyrene-d10	58.5 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	31.1 %		10-150			"	"	"	"	D
MW-17 (A) (P4G0839-16) Water										
Sampled: 07/22/04 16:36 Received: 07/23/04 15:30										
Acenaphthene	0.0864	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.649	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	92.8 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	91.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	69.9 %		10-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BM-17 (A) (P4G0839-17) Water Sampled: 07/22/04 16:36 Received: 07/23/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/04/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.246	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	106 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	99.6 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	86.0 %		10-150			"	"	"	"	

MW-16 (A) (P4G0839-18) Water Sampled: 07/22/04 15:15 Received: 07/23/04 15:30

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/03/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.740	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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MW-16 (A) (P4G0839-18) Water Sampled: 07/22/04 15:15 Received: 07/23/04 15:30

Surrogate: Fluorene-d10	88.1 %		25-150			4071238	07/28/04	08/03/04	EPA 8270m	
Surrogate: Pyrene-d10	94.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	78.8 %		10-150			"	"	"	"	

MW-14 (A) (P4G0839-19) Water Sampled: 07/23/04 07:57 Received: 07/23/04 15:30

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4071238	07/28/04	08/04/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0668	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	95.8 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	91.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	75.4 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-28 (A) (P4G0839-21) Water Sampled: 07/23/04 09:05 Received: 07/23/04 15:30 R-05a										
Acenaphthene	ND	0.500	0.500	ug/l	10	4071238	07/28/04	08/04/04	EPA 8270m	D, U
Acenaphthylene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Anthracene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Chrysene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Fluoranthene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Fluorene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Naphthalene	113	5.00	5.00	"	100	"	"	08/05/04	"	D
Phenanthrene	ND	0.500	0.500	"	10	"	"	08/04/04	"	D, U
Pyrene	ND	0.500	0.500	"	"	"	"	"	"	D, U
<i>Surrogate: Fluorene-d10</i>	<i>74.6 %</i>		<i>25-150</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: Pyrene-d10</i>	<i>63.1 %</i>		<i>23-150</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>40.4 %</i>		<i>10-150</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Bend**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-11 (M) (P4G0839-01) Water Sampled: 07/21/04 16:46 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	ND		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	102 %		50-150			"	"	"	"	
MW-18 (A) (P4G0839-02) Water Sampled: 07/21/04 15:35 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	266		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	97.4 %		50-150			"	"	"	"	
MW-45 (A) (P4G0839-03) Water Sampled: 07/21/04 14:44 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	ND		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	101 %		50-150			"	"	"	"	
MW-39 (A) (P4G0839-04) Water Sampled: 07/21/04 13:33 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	421		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	87.8 %		50-150			"	"	"	"	
MW-24 (A) (P4G0839-07) Water Sampled: 07/22/04 12:22 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	915		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	110 %		50-150			"	"	"	"	
MW-26 (A) (P4G0839-08) Water Sampled: 07/22/04 11:40 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	26000		4000	ug/l	50	0407078	07/29/04	07/29/04	NW TPH-G	R-05
Surrogate: a,a,a-TFT (FID)	93.3 %		50-150			"	"	"	"	
MW-27 (A) (P4G0839-09) Water Sampled: 07/22/04 11:00 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	ND		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	103 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Bend**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-36 (A) (P4G0839-10) Water Sampled: 07/22/04 10:11 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	ND		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	106 %		50-150			"	"	"	"	
MW-38 (A) (P4G0839-11) Water Sampled: 07/22/04 09:10 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	ND		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	104 %		50-150			"	"	"	"	
MW-13 (A) (P4G0839-12) Water Sampled: 07/22/04 08:18 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	9140		4000	ug/l	50	0407078	07/29/04	07/29/04	NW TPH-G	R-05
Surrogate: a,a,a-TFT (FID)	93.9 %		50-150			"	"	"	"	
MW-12 (A) (P4G0839-13) Water Sampled: 07/22/04 06:55 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	ND		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	99.8 %		50-150			"	"	"	"	
MW-29 (A) (P4G0839-14) Water Sampled: 07/22/04 13:01 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	39800		8000	ug/l	100	0407078	07/29/04	07/29/04	NW TPH-G	R-05
Surrogate: a,a,a-TFT (FID)	98.7 %		50-150			"	"	"	"	
MW-2 (M) (P4G0839-15) Water Sampled: 07/22/04 17:57 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	5010		800	ug/l	10	0407078	07/29/04	07/29/04	NW TPH-G	R-05
Surrogate: a,a,a-TFT (FID)	89.5 %		50-150			"	"	"	"	
MW-17 (A) (P4G0839-16) Water Sampled: 07/22/04 16:36 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	124		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
Surrogate: a,a,a-TFT (FID)	98.2 %		50-150			"	"	"	"	

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 Project Number: 10077.004
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Reported:
 08/16/04 17:11

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Bend

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BM-17 (A) (P4G0839-17) Water Sampled: 07/22/04 16:36 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	131		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
<i>Surrogate: a,a,a-TFT (FID)</i>	97.6 %		50-150			"	"	"	"	
MW-16 (A) (P4G0839-18) Water Sampled: 07/22/04 15:15 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	458		80.0	ug/l	1	0407078	07/29/04	07/29/04	NW TPH-G	
<i>Surrogate: a,a,a-TFT (FID)</i>	112 %		50-150			"	"	"	"	
MW-14 (A) (P4G0839-19) Water Sampled: 07/23/04 07:57 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	ND		80.0	ug/l	1	0407078	07/29/04	07/30/04	NW TPH-G	
<i>Surrogate: a,a,a-TFT (FID)</i>	108 %		50-150			"	"	"	"	
MW-28 (A) (P4G0839-21) Water Sampled: 07/23/04 09:05 Received: 07/23/04 15:30										
Gasoline Range Hydrocarbons	2240		800	ug/l	10	0407078	07/29/04	07/30/04	NW TPH-G	R-05
<i>Surrogate: a,a,a-TFT (FID)</i>	89.2 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071067: Prepared 07/26/04 Using EPA 3510 Fuels

Blank (4071067-BLK1)

Diesel Range Organics	ND	0.0870	0.250	mg/l							U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"							U
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.0842</i>			"	<i>0.0960</i>		<i>87.7</i>	<i>50-150</i>			

LCS (4071067-BS1)

Diesel Range Organics	2.18	0.0870	0.250	mg/l	2.50		87.2	50-150			
Heavy Oil Range Hydrocarbons	1.34	0.183	0.500	"	1.50		89.3	50-150			
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.112</i>			"	<i>0.0960</i>		<i>117</i>	<i>50-150</i>			

LCS Dup (4071067-BSD1)

Diesel Range Organics	2.12	0.0870	0.250	mg/l	2.50		84.8	50-150	2.79	50	
Heavy Oil Range Hydrocarbons	1.29	0.183	0.500	"	1.50		86.0	50-150	3.80	50	
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.120</i>			"	<i>0.0960</i>		<i>125</i>	<i>50-150</i>			

Batch 4071068: Prepared 07/26/04 Using EPA 3510 Fuels

Blank (4071068-BLK1)

Diesel Range Organics	ND	0.0870	0.250	mg/l							U
Heavy Oil Range Hydrocarbons	ND	0.183	0.500	"							U
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.0984</i>			"	<i>0.0960</i>		<i>102</i>	<i>50-150</i>			

LCS (4071068-BS1)

Diesel Range Organics	2.21	0.0870	0.250	mg/l	2.50		88.4	50-150			
Heavy Oil Range Hydrocarbons	1.24	0.183	0.500	"	1.50		82.7	50-150			
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.114</i>			"	<i>0.0960</i>		<i>119</i>	<i>50-150</i>			

LCS Dup (4071068-BSD1)

Diesel Range Organics	1.90	0.0870	0.250	mg/l	2.50		76.0	50-150	15.1	50	
Heavy Oil Range Hydrocarbons	1.11	0.183	0.500	"	1.50		74.0	50-150	11.1	50	
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.108</i>			"	<i>0.0960</i>		<i>112</i>	<i>50-150</i>			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071068: Prepared 07/26/04 Using EPA 3510 Fuels

Matrix Spike (4071068-MS1)

Source: P4G0839-18

Diesel Range Organics	2.41	0.0870	0.250	mg/l	2.36	0.551	78.8	50-150			
Heavy Oil Range Hydrocarbons	1.13	0.183	0.500	"	1.42	ND	79.6	50-150			
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.0876</i>			"	<i>0.0906</i>		<i>96.7</i>	<i>50-150</i>			

Matrix Spike Dup (4071068-MSD1)

Source: P4G0839-18

Diesel Range Organics	2.50	0.0870	0.250	mg/l	2.36	0.551	82.6	50-150	3.67	50	
Heavy Oil Range Hydrocarbons	1.13	0.183	0.500	"	1.42	ND	79.6	50-150	0.00	50	
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.0886</i>			"	<i>0.0906</i>		<i>97.8</i>	<i>50-150</i>			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Total Metals per EPA 200 Series Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4071082: Prepared 07/26/04 Using EPA 200/3005											
Blank (4071082-BLK1)											
Lead	ND	0.000224	0.00100	mg/l							U
LCS (4071082-BS1)											
Lead	0.104	0.000224	0.00100	mg/l	0.100		104	85-115			
LCS Dup (4071082-BSD1)											
Lead	0.108	0.000224	0.00100	mg/l	0.100		108	85-115	3.77	20	
Duplicate (4071082-DUP1)						Source: P4G0839-01					
Lead	0.000300	0.000224	0.00100	mg/l		0.000450			40.0	20	Q-06, J
Matrix Spike (4071082-MS1)						Source: P4G0839-18					
Lead	0.0983	0.000224	0.00100	mg/l	0.100	0.00131	97.0	70-130			
Matrix Spike Dup (4071082-MSD1)						Source: P4G0839-18					
Lead	0.0971	0.000224	0.00100	mg/l	0.100	0.00131	95.8	70-130	1.23	20	

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EnviroLogic Resources, Inc.
 P.O. Box 80762
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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071155: Prepared 07/27/04 Using EPA 5030B

Blank (4071155-BLK1)

1,2-Dibromoethane	ND	0.187	0.500	ug/l							U
1,2-Dichloroethane	ND	0.142	0.500	"							U
Benzene	ND	0.147	0.200	"							U
Toluene	ND	0.155	0.500	"							U
Ethylbenzene	ND	0.110	0.500	"							U
Xylenes (total)	ND	0.262	1.00	"							U
Methyl tert-butyl ether	ND	0.0865	2.00	"							U
Naphthalene	ND	0.0989	2.00	"							U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"							U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"							U
Isopropylbenzene	ND	0.107	2.00	"							U
n-Propylbenzene	ND	0.138	0.500	"							U
<i>Surrogate: 4-BFB</i>	18.7			"	20.0		93.5	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	19.0			"	20.0		95.0	77-129			
<i>Surrogate: Dibromofluoromethane</i>	18.3			"	20.0		91.5	80-121			
<i>Surrogate: Toluene-d8</i>	20.2			"	20.0		101	80-120			

LCS (4071155-BS1)

Benzene	20.3	0.147	0.200	ug/l	20.0		102	80-120			
Toluene	19.7	0.155	0.500	"	20.0		98.5	80-124			
Ethylbenzene	19.5	0.110	0.500	"	20.0		97.5	80-120			
Xylenes (total)	59.1	0.262	1.00	"	60.0		98.5	73-124			
Methyl tert-butyl ether	19.7	0.0865	2.00	"	20.0		98.5	80-129			
Naphthalene	20.0	0.0989	2.00	"	20.0		100	72-149			
<i>Surrogate: 4-BFB</i>	20.7			"	20.0		104	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.0			"	20.0		100	77-129			
<i>Surrogate: Dibromofluoromethane</i>	20.4			"	20.0		102	80-121			
<i>Surrogate: Toluene-d8</i>	20.9			"	20.0		104	80-120			

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071155: Prepared 07/27/04 Using EPA 5030B

Matrix Spike (4071155-MS1)

Source: P4G0839-18

Benzene	29.2	0.147	0.200	ug/l	20.0	7.26	110	80-124			
Toluene	21.4	0.155	0.500	"	20.0	2.15	96.2	79.7-131			
Ethylbenzene	20.5	0.110	0.500	"	20.0	1.39	95.6	80-124			
Xylenes (total)	54.8	0.262	1.00	"	60.0	2.83	86.6	44.6-154			
Methyl tert-butyl ether	20.6	0.0865	2.00	"	20.0	ND	103	80-130			
Naphthalene	20.7	0.0989	2.00	"	20.0	0.490	101	69-163			
Surrogate: 4-BFB	21.1			"	20.0		106	75-120			
Surrogate: 1,2-DCA-d4	20.6			"	20.0		103	77-129			
Surrogate: Dibromofluoromethane	21.1			"	20.0		106	80-121			
Surrogate: Toluene-d8	20.6			"	20.0		103	80-120			

Matrix Spike Dup (4071155-MSD1)

Source: P4G0839-18

Benzene	28.0	0.147	0.200	ug/l	20.0	7.26	104	80-124	4.20	25	
Toluene	20.8	0.155	0.500	"	20.0	2.15	93.2	79.7-131	2.84	25	
Ethylbenzene	19.0	0.110	0.500	"	20.0	1.39	88.0	80-124	7.59	25	
Xylenes (total)	49.5	0.262	1.00	"	60.0	2.83	77.8	44.6-154	10.2	25	
Methyl tert-butyl ether	20.0	0.0865	2.00	"	20.0	ND	100	80-130	2.96	25	
Naphthalene	21.1	0.0989	2.00	"	20.0	0.490	103	69-163	1.91	25	
Surrogate: 4-BFB	20.2			"	20.0		101	75-120			
Surrogate: 1,2-DCA-d4	19.6			"	20.0		98.0	77-129			
Surrogate: Dibromofluoromethane	20.7			"	20.0		104	80-121			
Surrogate: Toluene-d8	20.2			"	20.0		101	80-120			

Batch 4071315: Prepared 07/29/04 Using EPA 5030B

Blank (4071315-BLK1)

1,2-Dibromoethane	ND	0.187	0.500	ug/l							U
1,2-Dichloroethane	ND	0.142	0.500	"							U
Benzene	ND	0.147	0.200	"							U
Toluene	ND	0.155	0.500	"							U
Ethylbenzene	ND	0.110	0.500	"							U
Xylenes (total)	ND	0.262	1.00	"							U
Methyl tert-butyl ether	ND	0.0865	2.00	"							U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071315: Prepared 07/29/04 Using EPA 5030B

Blank (4071315-BLK1)

Naphthalene	ND	0.0989	2.00	ug/l							U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"							U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"							U
Isopropylbenzene	ND	0.107	2.00	"							U
n-Propylbenzene	ND	0.138	0.500	"							U
<i>Surrogate: 4-BFB</i>	18.5			"	20.0		92.5	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	19.9			"	20.0		99.5	77-129			
<i>Surrogate: Dibromofluoromethane</i>	19.5			"	20.0		97.5	80-121			
<i>Surrogate: Toluene-d8</i>	20.8			"	20.0		104	80-120			

LCS (4071315-BS1)

Benzene	20.1	0.147	0.200	ug/l	20.0		100	80-120			
Toluene	19.8	0.155	0.500	"	20.0		99.0	80-124			
Ethylbenzene	18.2	0.110	0.500	"	20.0		91.0	80-120			
Xylenes (total)	54.7	0.262	1.00	"	60.0		91.2	73-124			
Methyl tert-butyl ether	18.8	0.0865	2.00	"	20.0		94.0	80-129			
Naphthalene	21.4	0.0989	2.00	"	20.0		107	72-149			
<i>Surrogate: 4-BFB</i>	19.7			"	20.0		98.5	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.2			"	20.0		101	77-129			
<i>Surrogate: Dibromofluoromethane</i>	21.0			"	20.0		105	80-121			
<i>Surrogate: Toluene-d8</i>	21.4			"	20.0		107	80-120			

Matrix Spike (4071315-MS1)

Source: P4G0850-01

Benzene	20.6	0.147	0.200	ug/l	20.0	ND	103	80-124			
Toluene	19.6	0.155	0.500	"	20.0	0.280	96.6	79.7-131			
Ethylbenzene	17.8	0.110	0.500	"	20.0	ND	89.0	80-124			
Xylenes (total)	49.7	0.262	1.00	"	60.0	ND	82.8	44.6-154			
Methyl tert-butyl ether	19.6	0.0865	2.00	"	20.0	ND	98.0	80-130			
Naphthalene	21.7	0.0989	2.00	"	20.0	ND	108	69-163			
<i>Surrogate: 4-BFB</i>	19.6			"	20.0		98.0	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.0			"	20.0		100	77-129			
<i>Surrogate: Dibromofluoromethane</i>	20.9			"	20.0		104	80-121			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071315: Prepared 07/29/04 Using EPA 5030B

Matrix Spike (4071315-MS1)

Source: P4G0850-01

Surrogate: Toluene-d8 20.8 ug/l 20.0 104 80-120

Matrix Spike Dup (4071315-MSD1)

Source: P4G0850-01

Benzene	20.7	0.147	0.200	ug/l	20.0	ND	104	80-124	0.484	25	
Toluene	19.3	0.155	0.500	"	20.0	0.280	95.1	79.7-131	1.54	25	
Ethylbenzene	17.2	0.110	0.500	"	20.0	ND	86.0	80-124	3.43	25	
Xylenes (total)	47.2	0.262	1.00	"	60.0	ND	78.7	44.6-154	5.16	25	
Methyl tert-butyl ether	19.8	0.0865	2.00	"	20.0	ND	99.0	80-130	1.02	25	
Naphthalene	20.5	0.0989	2.00	"	20.0	ND	102	69-163	5.69	25	
Surrogate: 4-BFB	19.3			"	20.0		96.5	75-120			
Surrogate: 1,2-DCA-d4	20.6			"	20.0		103	77-129			
Surrogate: Dibromofluoromethane	21.3			"	20.0		106	80-121			
Surrogate: Toluene-d8	20.9			"	20.0		104	80-120			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4071238: Prepared 07/28/04 Using EPA 3520/600 Series

Blank (4071238-BLK1)

Acenaphthene	ND	0.0500	0.0500	ug/l							U
Acenaphthylene	ND	0.0500	0.0500	"							U
Anthracene	ND	0.0500	0.0500	"							U
Benzo (a) anthracene	ND	0.0100	0.0100	"							U
Benzo (a) pyrene	ND	0.0100	0.0100	"							U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"							U
Benzo (ghi) perylene	ND	0.0500	0.0500	"							U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"							U
Chrysene	ND	0.0100	0.0100	"							U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"							U
Fluoranthene	ND	0.0500	0.0500	"							U
Fluorene	ND	0.0500	0.0500	"							U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"							U
Naphthalene	ND	0.0500	0.0500	"							U
Phenanthrene	ND	0.0500	0.0500	"							U
Pyrene	ND	0.0500	0.0500	"							U
Surrogate: Fluorene-d10	2.43			"	2.50		97.2	25-150			
Surrogate: Pyrene-d10	2.55			"	2.50		102	23-150			
Surrogate: Benzo (a) pyrene-d12	2.15			"	2.50		86.0	10-150			

LCS (4071238-BS1)

Acenaphthene	3.06	0.0500	0.0500	ug/l	2.50		122	26-150			
Benzo (a) pyrene	2.22	0.0100	0.0100	"	2.50		88.8	38-150			
Pyrene	2.52	0.0500	0.0500	"	2.50		101	33-150			
Surrogate: Fluorene-d10	2.55			"	2.50		102	25-150			
Surrogate: Pyrene-d10	2.51			"	2.50		100	23-150			
Surrogate: Benzo (a) pyrene-d12	2.40			"	2.50		96.0	10-150			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4071238: Prepared 07/28/04 Using EPA 3520/600 Series

Matrix Spike (4071238-MS1)

Source: P4G0839-18

Acenaphthene	2.42	0.0500	0.0500	ug/l	2.36	ND	103	26-135			
Benzo (a) pyrene	1.43	0.0100	0.0100	"	2.36	ND	60.6	38-137			
Pyrene	2.28	0.0500	0.0500	"	2.36	ND	96.6	33-133			
<i>Surrogate: Fluorene-d10</i>	<i>1.94</i>			"	<i>2.36</i>		<i>82.2</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>2.08</i>			"	<i>2.36</i>		<i>88.1</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.40</i>			"	<i>2.36</i>		<i>59.3</i>	<i>10-150</i>			

Matrix Spike Dup (4071238-MSD1)

Source: P4G0839-18

Acenaphthene	2.74	0.0500	0.0500	ug/l	2.36	ND	116	26-135	12.4	60	
Benzo (a) pyrene	1.48	0.0100	0.0100	"	2.36	ND	62.7	38-137	3.44	60	
Pyrene	2.22	0.0500	0.0500	"	2.36	ND	94.1	33-133	2.67	60	
<i>Surrogate: Fluorene-d10</i>	<i>2.04</i>			"	<i>2.36</i>		<i>86.4</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>2.01</i>			"	<i>2.36</i>		<i>85.2</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.42</i>			"	<i>2.36</i>		<i>60.2</i>	<i>10-150</i>			

Batch 4080328: Prepared 08/09/04 Using EPA 3520/600 Series

Blank (4080328-BLK1)

Acenaphthene	ND	0.0500	0.0500	ug/l							U
Acenaphthylene	ND	0.0500	0.0500	"							U
Anthracene	ND	0.0500	0.0500	"							U
Benzo (a) anthracene	ND	0.0100	0.0100	"							U
Benzo (a) pyrene	ND	0.0100	0.0100	"							U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"							U
Benzo (ghi) perylene	ND	0.0500	0.0500	"							U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"							U
Chrysene	ND	0.0100	0.0100	"							U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"							U
Fluoranthene	ND	0.0500	0.0500	"							U
Fluorene	ND	0.0500	0.0500	"							U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"							U
Naphthalene	ND	0.0500	0.0500	"							U
Phenanthrene	ND	0.0500	0.0500	"							U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4080328: Prepared 08/09/04 Using EPA 3520/600 Series

Blank (4080328-BLK1)

Pyrene	ND	0.0500	0.0500	ug/l							U
Surrogate: Fluorene-d10	1.98			"	2.50		79.2	25-150			
Surrogate: Pyrene-d10	2.28			"	2.50		91.2	23-150			
Surrogate: Benzo (a) pyrene-d12	2.12			"	2.50		84.8	10-150			

LCS (4080328-BS1)

Acenaphthene	1.70	0.0500	0.0500	ug/l	2.50		68.0	26-150			
Benzo (a) pyrene	1.18	0.0100	0.0100	"	2.50		47.2	38-150			
Pyrene	1.82	0.0500	0.0500	"	2.50		72.8	33-150			
Surrogate: Fluorene-d10	1.43			"	2.50		57.2	25-150			
Surrogate: Pyrene-d10	1.84			"	2.50		73.6	23-150			
Surrogate: Benzo (a) pyrene-d12	1.20			"	2.50		48.0	10-150			

LCS Dup (4080328-BSD1)

Acenaphthene	3.13	0.0500	0.0500	ug/l	2.50		125	26-150	59.2	60	
Benzo (a) pyrene	2.09	0.0100	0.0100	"	2.50		83.6	38-150	55.7	60	
Pyrene	2.45	0.0500	0.0500	"	2.50		98.0	33-150	29.5	60	
Surrogate: Fluorene-d10	2.48			"	2.50		99.2	25-150			
Surrogate: Pyrene-d10	2.41			"	2.50		96.4	23-150			
Surrogate: Benzo (a) pyrene-d12	2.23			"	2.50		89.2	10-150			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 08/16/04 17:11

Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Bend

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0407078: Prepared 07/29/04 Using EPA 5030B / 5035											
Blank (0407078-BLK1)											
Gasoline Range Hydrocarbons	ND		80.0	ug/l							
Surrogate: a,a,a-TFT (FID)	95.0			"	100		95.0	50-150			
LCS (0407078-BS1)											
Gasoline Range Hydrocarbons	463		80.0	ug/l	500		92.6	50-150			
Surrogate: a,a,a-TFT (FID)	110			"	100		110	50-150			
Duplicate (0407078-DUP1) Source: P4G0839-08											
Gasoline Range Hydrocarbons	26700		4000	ug/l		26000			2.66	50	R-05
Surrogate: a,a,a-TFT (FID)	98.2			"	100		98.2	50-150			
Duplicate (0407078-DUP2) Source: P4G0839-14											
Gasoline Range Hydrocarbons	37400		8000	ug/l		39800			6.22	50	R-05
Surrogate: a,a,a-TFT (FID)	95.4			"	100		95.4	50-150			
Matrix Spike (0407078-MS1) Source: P4G0839-18											
Gasoline Range Hydrocarbons	928		80.0	ug/l	500	458	94.0	50-150			
Surrogate: a,a,a-TFT (FID)	119			"	100		119	50-150			
Matrix Spike Dup (0407078-MSD1) Source: P4G0839-18											
Gasoline Range Hydrocarbons	958		80.0	ug/l	500	458	100	50-150	3.18	50	
Surrogate: a,a,a-TFT (FID)	128			"	100		128	50-150			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
08/16/04 17:11

Notes and Definitions

- A-01 Detected hydrocarbons appear to be due to weathered gas as well as weathered diesel.
- A-02 Detected hydrocarbons appear to be due to gas as well as biogenic interference.
- D Data reported from a preparation or analytical dilution.
- D-08 Detected hydrocarbons in the diesel range appear to be due to overlap of gasoline range hydrocarbons.
- D-15 Detected hydrocarbons have non-petroleum peaks or elution pattern that suggests the presence of biogenic interference.
- D-17 Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel or possibly biogenic interference.
- J Estimated value.
- O-07 This sample was extracted outside the EPA recommended holding time.
- Q-06 Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
- R-03 The reporting limit for this analyte was raised due to matrix interference.
- R-05 Reporting limits raised due to dilution necessary for analysis.
- R-05a Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- S-10 The recovery for this parameter is outside acceptance limits. See case narrative.
- U Analyte included in the analysis but not detected.
- X See case narrative.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Case Narrative

CLIENT: Envirolgic Resources, Inc.
PROJECT: Astoria Area-Wide Petroleum Site RI-1
PROJECT #: 10077.004

August 16, 2004
NCA #: P4G0839
page 1 of 2

1.0 DESCRIPTION OF CASE

North Creek Analytical-Portland received nineteen water samples and two Trip Blanks on May 28, 2004 from Envirolgic Resources, Inc. for Diesel/Residual Range Organics by NWTPH-Dx, Gasoline Range Organics by NWTPH-Gx, Specific Volatile Organic Compounds by EPA Method 8260B, Total Lead by EPA 200.8 and Polynuclear Aromatic Compounds by EPA Method 8270M-SIM analyses.

2.0 SAMPLE LIST

Refer to the *Chain of Custody* documents for a summary of sample information.

Each group of samples received is given NCA #, preceded by a "P" for Portland. This number consists of a one-digit code for the year, a two-digit code for the month and a sequential number for the group within the month. Each sample within the group is numbered sequentially by placing a dash after the NCA#.

3.0 COMMENTS ON ANALYSIS

3.1 Sample Receipt

The samples were received intact from Envirolgic Resources, Inc. Ten coolers were brought to the lab by NCA courier. There was custody seals present on the coolers. The samples were clearly labeled and matched the chain of custody. Sample temperature was measured at 5.5, 6.5, 5.9, 4.8, 3.1, 4.0, 2.5, 2.5, 5.4 and 1.9 degrees Celsius upon receipt using a Digital thermometer and recorded with sample log in information.

3.2 Analysis

The samples were analyzed following the procedures outlined in the applicable methods. The samples were refrigerated at ~4 °C, and extracted and analyzed within the EPA recommended holding times without incident with the exception of sample **MW-36 (A)**. This sample was initially extracted within hold time but had to be re-extracted out of recommended hold time due to the low surrogate recovery of Fluorene-d10. Exceptions and/or anomalies encountered during analysis are footnoted and described in the *Notes and Definitions* section of the *Analytical Reports* and summarized in Sections 4.0 and 5.0 below.



Case Narrative

CLIENT: Envirologic Resources, Inc.
PROJECT: Astoria Area-Wide Petroleum Site RI-1
PROJECT #: 10077.004

August 16, 2004
NCA #: P4G0839
page 2 of 2

4.0 QC RESULTS

Surrogate and quality control parameters that were outside control limits are noted on the appropriate pages of the *Analytical Reports*. With the exception of those noted below or on the *Analytical Reports* following, all quality control parameters, including those specific to instrumentation, such as daily CCV recoveries, were within established control limits:

Polynuclear Aromatic Compounds by EPA Method 8270M-SIM

Surrogate recovery of Fluorene-d10 on sample **MW-36 (A)**, batch 4071238 was below the control limits. This sample was re-extracted outside the recommended hold time and analyzed as batch #4080328 with acceptable surrogate recoveries. Sample results of both initial and re-analyses are reported with no target analyte detected.

5.0 SAMPLE RESULTS

Where applicable, qualifiers have been added to sample results as footnotes and are detailed in the *Notes and Definitions* section of the *Analytical Report*. There were no anomalies encountered during the preparation and analysis of the samples.

The dilution factor for a sample, if applicable, is depicted on the *Analytical Report*. Method Reporting Limit (MRL) values for analyte quantitated from a dilution are raised by the dilution factor. The method blank sample may be referenced for the initial MRL.

Joy Chang, Project Manager
North Creek Analytical, Portland



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October 04, 2004

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

RE: Astoria Area-Wide / Baker Tank

Enclosed are the results of analyses for samples received by the laboratory on 09/17/04 09:12.
The following list is a summary of the NCA Work Orders contained in this report.
If you have any questions concerning this report, please feel free to contact me.

<u>Work</u>	<u>Project</u>	<u>ProjectNumber</u>
P4I0619	Astoria Area-Wide / Baker Tank	10077.013

Thank You,

Joy D. Chang, Project Manager

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Environmental Laboratory Network



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EnviroLogic Resources, Inc. P.O. Box 80762 Portland, OR 97280-0762	Project Name:	Astoria Area-Wide / Baker Tank	<u>Report Created:</u> 10/04/04 12:58
	Project Number:	10077.013	
	Project Manager:	Tom Calabrese	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Baker Tank	P4I0619-01	Water	09/16/04 14:45	09/17/04 09:12

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc. P.O. Box 80762 Portland, OR 97280-0762	Project Name:	Astoria Area-Wide / Baker Tank	<u>Report Created:</u> 10/04/04 12:58
	Project Number:	10077.013	
	Project Manager:	Tom Calabrese	

Oil and Grease Analysis per EPA Method 1664
 North Creek Analytical - Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
P4I0619-01	Water	Baker Tank	Sampled: 09/16/04 14:45							
Oil & Grease	EPA 1664	ND	4.20	5.00	mg/l	1x	4091327	09/29/04	09/30/04 12:47	F-02, U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc. P.O. Box 80762 Portland, OR 97280-0762	Project Name:	Astoria Area-Wide / Baker Tank	<u>Report Created:</u> 10/04/04 12:58
	Project Number:	10077.013	
	Project Manager:	Tom Calabrese	

Total Metals per EPA 200 Series Methods
 North Creek Analytical - Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
P410619-01	Water	Baker Tank	Sampled: 09/16/04 14:45							
Chromium	EPA 200.8	0.00149	0.000720	0.00100	mg/l	1x	4090754	09/17/04	09/18/04 11:39	
Lead	"	0.000260	0.000224	0.00100	"	"	"	"	"	J

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc. P.O. Box 80762 Portland, OR 97280-0762	Project Name:	Astoria Area-Wide / Baker Tank	<u>Report Created:</u> 10/04/04 12:58
	Project Number:	10077.013	
	Project Manager:	Tom Calabrese	

Selected Volatile Organic Compounds (Including BTEX) per EPA Method 8260B
 North Creek Analytical - Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
P410619-01	Water	Baker Tank	Sampled: 09/16/04 14:45							
Tetrachloroethene	EPA 8260B	ND	0.109	0.500	ug/l	1x	4090979	09/22/04	09/22/04 16:54	U
Benzene	"	ND	0.147	0.200	"	"	"	"	"	U
Toluene	"	ND	0.155	0.500	"	"	"	"	"	U
Ethylbenzene	"	ND	0.110	0.500	"	"	"	"	"	U
Xylenes (total)	"	ND	0.262	1.00	"	"	"	"	"	U
<i>Surrogate(s): 4-BFB</i>		<i>Recovery: 88.0%</i>		<i>Limits: 75 - 120 %</i>		<i>"</i>				
<i>1,2-DCA-d4</i>		<i>98.5%</i>		<i>77 - 129 %</i>		<i>"</i>				
<i>Dibromofluoromethane</i>		<i>100%</i>		<i>80 - 121 %</i>		<i>"</i>				
<i>Toluene-d8</i>		<i>100%</i>		<i>80 - 120 %</i>		<i>"</i>				

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EnviroLogic Resources, Inc. P.O. Box 80762 Portland, OR 97280-0762	Project Name:	Astoria Area-Wide / Baker Tank	<u>Report Created:</u> 10/04/04 12:58
	Project Number:	10077.013	
	Project Manager:	Tom Calabrese	

Polynuclear Aromatic Compounds per EPA 8270M-SIM
 North Creek Analytical - Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
P410619-01	Water	Baker Tank	Sampled: 09/16/04 14:45							
Acenaphthene	EPA 8270m	ND	0.0500	0.0500	ug/l	1x	4090808	09/20/04	09/30/04 17:52	U
Acenaphthylene	"	ND	0.0500	0.0500	"	"	"	"	"	U
Anthracene	"	ND	0.0500	0.0500	"	"	"	"	"	U
Benzo (a) anthracene	"	ND	0.0100	0.0100	"	"	"	"	"	U
Benzo (a) pyrene	"	ND	0.0100	0.0100	"	"	"	"	"	U
Benzo (b) fluoranthene	"	ND	0.0100	0.0100	"	"	"	"	"	U
Benzo (ghi) perylene	"	ND	0.0500	0.0500	"	"	"	"	"	U
Benzo (k) fluoranthene	"	ND	0.0100	0.0100	"	"	"	"	"	U
Chrysene	"	ND	0.0100	0.0100	"	"	"	"	"	U
Dibenzo (a,h) anthracene	"	ND	0.0100	0.0100	"	"	"	"	"	U
Fluoranthene	"	ND	0.0500	0.0500	"	"	"	"	"	U
Fluorene	"	ND	0.0500	0.0500	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	"	ND	0.0100	0.0100	"	"	"	"	"	U
Naphthalene	"	ND	0.0500	0.0500	"	"	"	"	"	U
Phenanthrene	"	ND	0.0500	0.0500	"	"	"	"	"	U
Pyrene	"	ND	0.0500	0.0500	"	"	"	"	"	U
<i>Surrogate(s): Fluorene-d10</i>		<i>Recovery: 99.6%</i>		<i>Limits: 25 - 150 %</i>		"		"		
<i>Pyrene-d10</i>		<i>87.7%</i>		<i>23 - 150 %</i>		"		"		
<i>Benzo (a) pyrene-d12</i>		<i>75.4%</i>		<i>10 - 150 %</i>		"		"		

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EnviroLogic Resources, Inc. P.O. Box 80762 Portland, OR 97280-0762	Project Name:	Astoria Area-Wide / Baker Tank	<u>Report Created:</u> 10/04/04 12:58
	Project Number:	10077.013	
	Project Manager:	Tom Calabrese	

Conventional Chemistry Parameters per APHA/EPA Methods
 North Creek Analytical - Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
P410619-01	Water	Baker Tank	Sampled: 09/16/04 14:45							
Total Suspended Solids	EPA 160.2	2.00	1.19	10.0	mg/l	1x	4090878	09/21/04	09/21/04 17:10	J
pH	150.1/9040A	7.73			pH Units	"	4090751	09/17/04	09/17/04 11:15	

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EnviroLogic Resources, Inc. P.O. Box 80762 Portland, OR 97280-0762	Project Name:	Astoria Area-Wide / Baker Tank	<u>Report Created:</u> 10/04/04 12:58
	Project Number:	10077.013	
	Project Manager:	Tom Calabrese	

Oil and Grease Analysis per EPA Method 1664 - Laboratory Quality Control Results
North Creek Analytical - Portland

QC Batch: 4091327 Water Preparation Method: EPA 1664

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC (Limits)	% RPD (Limits)	Analyzed	Notes
Blank (4091327-BLK1)								Extracted: 09/29/04 13:13				
Oil & Grease	EPA 1664	ND	4.20	5.00	mg/l	1x	--	--	--	--	09/30/04 12:47	U
Oil & Grease (non-polar)	"	ND	1.55	5.00	"	"	--	--	--	--	"	U
Oil & Grease (polar)	"	ND		5.00	"	"	--	--	--	--	"	
LCS (4091327-BS1)								Extracted: 09/29/04 13:13				
Oil & Grease	EPA 1664	78.1	4.20	5.00	mg/l	1x	--	80.0	97.6% (79-114)	--	09/30/04 12:47	
Oil & Grease (non-polar)	"	34.3	1.55	5.00	"	"	--	40.0	85.8% (66-114)	--	"	

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EnviroLogic Resources, Inc. P.O. Box 80762 Portland, OR 97280-0762	Project Name:	Astoria Area-Wide / Baker Tank	Report Created: 10/04/04 12:58
	Project Number:	10077.013	
	Project Manager:	Tom Calabrese	

Total Metals per EPA 200 Series Methods - Laboratory Quality Control Results
North Creek Analytical - Portland

QC Batch: 4090754 **Water Preparation Method: EPA 200/3005**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (4090754-BLK1)										Extracted: 09/17/04 10:54				
Chromium	EPA 200.8	0.000720	0.000720	0.00100	mg/l	1x	--	--	--	--	--	--	09/20/04 11:48	J
Lead	"	ND	0.000224	0.00100	"	"	--	--	--	--	--	--	"	U
LCS (4090754-BS1)										Extracted: 09/17/04 10:54				
Chromium	EPA 200.8	0.102	0.000720	0.00100	mg/l	1x	--	0.100	102%	(85-115)	--	--	09/20/04 11:54	
Lead	"	0.0972	0.000224	0.00100	"	"	--	"	97.2%	"	--	--	"	
LCS Dup (4090754-BSD1)										Extracted: 09/17/04 10:54				
Chromium	EPA 200.8	0.102	0.000720	0.00100	mg/l	1x	--	0.100	102%	(85-115)	0.00% (20)		09/20/04 12:01	
Lead	"	0.0978	0.000224	0.00100	"	"	--	"	97.8%	"	0.615%	"	"	
Duplicate (4090754-DUP1)				QC Source: P4I0509-01				Extracted: 09/17/04 10:54						
Chromium	EPA 200.8	0.000910	0.000720	0.00100	mg/l	1x	0.00108	--	--	--	17.1% (20)		09/20/04 18:10	J
Lead	"	0.000270	0.000224	0.00100	"	"	ND	--	--	--	NR	"	"	J
Matrix Spike (4090754-MS1)				QC Source: P4I0346-04RE1				Extracted: 09/17/04 10:54						
Chromium	EPA 200.8	0.103	0.000720	0.00100	mg/l	1x	0.00133	0.100	102%	(70-130)	--	--	09/20/04 12:20	
Lead	"	0.0972	0.000224	0.00100	"	"	0.00300	"	94.2%	"	--	--	"	
Matrix Spike Dup (4090754-MSD1)				QC Source: P4I0346-04RE1				Extracted: 09/17/04 10:54						
Chromium	EPA 200.8	0.100	0.000720	0.00100	mg/l	1x	0.00133	0.100	98.7%	(70-130)	2.96% (20)		09/20/04 17:58	
Lead	"	0.0966	0.000224	0.00100	"	"	0.00300	"	93.6%	"	0.619%	"	"	

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Project Name: **Astoria Area-Wide / Baker Tank**

Project Number: 10077.013
Project Manager: Tom Calabrese

Report Created:
10/04/04 12:58

Selected Volatile Organic Compounds (Including BTEX) per EPA Method 8260B - Laboratory Quality Control Results
North Creek Analytical - Portland

QC Batch: 4090979 Water Preparation Method: EPA 5030B

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC (Limits)	% RPD (Limits)	Analyzed	Notes	
Blank (4090979-BLK1)												Extracted: 09/22/04 10:31	
1,2-Dibromoethane	EPA 8260B	ND	0.187	0.500	ug/l	1x	--	--	--	--	09/22/04 15:34	U	
1,2-Dichloroethane	"	ND	0.142	0.500	"	"	--	--	--	--	"	U	
Benzene	"	ND	0.147	0.200	"	"	--	--	--	--	"	U	
Toluene	"	ND	0.155	0.500	"	"	--	--	--	--	"	U	
Ethylbenzene	"	ND	0.110	0.500	"	"	--	--	--	--	"	U	
Xylenes (total)	"	ND	0.262	1.00	"	"	--	--	--	--	"	U	
Methyl tert-butyl ether	"	ND	0.0865	2.00	"	"	--	--	--	--	"	U	
Naphthalene	"	0.740	0.0989	2.00	"	"	--	--	--	--	"	J	
1,2,4-Trimethylbenzene	"	ND	0.0884	1.00	"	"	--	--	--	--	"	U	
1,3,5-Trimethylbenzene	"	ND	0.157	0.500	"	"	--	--	--	--	"	U	
Isopropylbenzene	"	ND	0.107	2.00	"	"	--	--	--	--	"	U	
n-Propylbenzene	"	ND	0.138	0.500	"	"	--	--	--	--	"	U	
Surrogate(s): 4-BFB		Recovery:	89.0%	Limits:	75-120%	"					09/22/04 15:34		
1,2-DCA-d4			97.5%		77-129%	"					"		
Dibromofluoromethane			99.5%		80-121%	"					"		
Toluene-d8			102%		80-120%	"					"		
LCS (4090979-BS1)												Extracted: 09/22/04 10:31	
Benzene	EPA 8260B	21.2	0.147	0.200	ug/l	1x	--	20.0	106% (80-120)	--	09/22/04 13:46		
Toluene	"	21.6	0.155	0.500	"	"	--	"	108% (80-124)	--	"		
Ethylbenzene	"	20.6	0.110	0.500	"	"	--	"	103% (80-120)	--	"		
Xylenes (total)	"	61.3	0.262	1.00	"	"	--	60.0	102% (73-124)	--	"		
Methyl tert-butyl ether	"	22.6	0.0865	2.00	"	"	--	20.0	113% (80-129)	--	"		
Naphthalene	"	28.2	0.0989	2.00	"	"	--	"	141% (72-149)	--	"		
Surrogate(s): 4-BFB		Recovery:	97.0%	Limits:	75-120%	"					09/22/04 13:46		
1,2-DCA-d4			92.5%		77-129%	"					"		
Dibromofluoromethane			92.0%		80-121%	"					"		
Toluene-d8			102%		80-120%	"					"		
Matrix Spike (4090979-MS1)												QC Source: P410571-01	Extracted: 09/22/04 10:31
Benzene	EPA 8260B	20.1	0.147	0.200	ug/l	1x	ND	20.0	100% (80-124)	--	09/22/04 14:14		
Toluene	"	20.3	0.155	0.500	"	"	ND	"	102% (79.7-131)	--	"		
Ethylbenzene	"	17.9	0.110	0.500	"	"	ND	"	89.5% (80-124)	--	"		
Xylenes (total)	"	49.8	0.262	1.00	"	"	ND	60.0	83.0% (44.6-154)	--	"		
Methyl tert-butyl ether	"	20.7	0.0865	2.00	"	"	ND	20.0	104% (80-130)	--	"		
Naphthalene	"	22.2	0.0989	2.00	"	"	ND	"	111% (69-163)	--	"		
Surrogate(s): 4-BFB		Recovery:	84.5%	Limits:	75-120%	"					09/22/04 14:14		
1,2-DCA-d4			98.0%		77-129%	"					"		
Dibromofluoromethane			101%		80-121%	"					"		
Toluene-d8			101%		80-120%	"					"		

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EnviroLogic Resources, Inc. P.O. Box 80762 Portland, OR 97280-0762	Project Name:	Astoria Area-Wide / Baker Tank	<u>Report Created:</u> 10/04/04 12:58
	Project Number:	10077.013	
	Project Manager:	Tom Calabrese	

Selected Volatile Organic Compounds (Including BTEX) per EPA Method 8260B - Laboratory Quality Control Results
 North Creek Analytical - Portland

QC Batch: 4090979 **Water Preparation Method: EPA 5030B**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC (Limits)	% RPD (Limits)	Analyzed	Notes
Matrix Spike Dup (4090979-MSD1)			QC Source: P4I0571-01				Extracted: 09/22/04 10:31					
Benzene	EPA 8260B	19.7	0.147	0.200	ug/l	1x	ND	20.0	98.5% (80-124)	2.01% (25)	09/22/04 14:41	
Toluene	"	19.6	0.155	0.500	"	"	ND	"	98.0% (79.7-131)	3.51% "	"	"
Ethylbenzene	"	18.1	0.110	0.500	"	"	ND	"	90.5% (80-124)	1.11% "	"	"
Xylenes (total)	"	52.2	0.262	1.00	"	"	ND	60.0	87.0% (44.6-154)	4.71% "	"	"
Methyl tert-butyl ether	"	21.0	0.0865	2.00	"	"	ND	20.0	105% (80-130)	1.44% "	"	"
Naphthalene	"	20.8	0.0989	2.00	"	"	ND	"	104% (69-163)	6.51% "	"	"
<i>Surrogate(s): 4-BFB</i>		<i>Recovery:</i>	<i>95.0%</i>	<i>Limits:</i>		<i>75-120%</i>					<i>09/22/04 14:41</i>	
<i>1,2-DCA-d4</i>			<i>100%</i>			<i>77-129%</i>						
<i>Dibromofluoromethane</i>			<i>102%</i>			<i>80-121%</i>						
<i>Toluene-d8</i>			<i>103%</i>			<i>80-120%</i>						

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EnviroLogic Resources, Inc.

P.O. Box 80762
Portland, OR 97280-0762

Project Name: **Astoria Area-Wide / Baker Tank**

Project Number: 10077.013
Project Manager: Tom Calabrese

Report Created:
10/04/04 12:58

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results
North Creek Analytical - Portland

QC Batch: 4090808 Water Preparation Method: EPA 3520/600 Series

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC (Limits)	% RPD (Limits)	Analyzed	Notes
Blank (4090808-BLK1)												Extracted: 09/20/04 08:50
Acenaphthene	EPA 8270m	ND	0.0500	0.0500	ug/l	1x	--	--	--	--	09/30/04 18:27	U
Acenaphthylene	"	ND	0.0500	0.0500	"	"	--	--	--	--	"	U
Anthracene	"	ND	0.0500	0.0500	"	"	--	--	--	--	"	U
Benzo (a) anthracene	"	ND	0.0100	0.0100	"	"	--	--	--	--	"	U
Benzo (a) pyrene	"	ND	0.0100	0.0100	"	"	--	--	--	--	"	U
Benzo (b) fluoranthene	"	ND	0.0100	0.0100	"	"	--	--	--	--	"	U
Benzo (ghi) perylene	"	ND	0.0500	0.0500	"	"	--	--	--	--	"	U
Benzo (k) fluoranthene	"	ND	0.0100	0.0100	"	"	--	--	--	--	"	U
Chrysene	"	ND	0.0100	0.0100	"	"	--	--	--	--	"	U
Dibenzo (a,h) anthracene	"	ND	0.0100	0.0100	"	"	--	--	--	--	"	U
Fluoranthene	"	ND	0.0500	0.0500	"	"	--	--	--	--	"	U
Fluorene	"	ND	0.0500	0.0500	"	"	--	--	--	--	"	U
Indeno (1,2,3-cd) pyrene	"	ND	0.0100	0.0100	"	"	--	--	--	--	"	U
Naphthalene	"	ND	0.0500	0.0500	"	"	--	--	--	--	"	U
Phenanthrene	"	ND	0.0500	0.0500	"	"	--	--	--	--	"	U
Pyrene	"	ND	0.0500	0.0500	"	"	--	--	--	--	"	U

Surrogate(s): Fluorene-d10 Recovery: 91.6% Limits: 25-150% " 09/30/04 18:27
 Pyrene-d10 86.0% 23-150% " "
 Benzo (a) pyrene-d12 81.6% 10-150% " "

LCS (4090808-BS1)

Extracted: 09/20/04 08:50

Acenaphthene	EPA 8270m	2.07	0.0500	0.0500	ug/l	1x	--	2.50	82.8% (26-150)	--	09/30/04 19:01	
Benzo (a) pyrene	"	2.10	0.0100	0.0100	"	"	--	"	84.0% (38-150)	--	"	
Pyrene	"	2.12	0.0500	0.0500	"	"	--	"	84.8% (33-150)	--	"	

Surrogate(s): Fluorene-d10 Recovery: 88.0% Limits: 25-150% " 09/30/04 19:01
 Pyrene-d10 85.6% 23-150% " "
 Benzo (a) pyrene-d12 83.2% 10-150% " "

LCS Dup (4090808-BSD1)

Extracted: 09/20/04 08:50

Acenaphthene	EPA 8270m	2.19	0.0500	0.0500	ug/l	1x	--	2.50	87.6% (26-150)	5.63% (60)	09/30/04 19:36	
Benzo (a) pyrene	"	2.08	0.0100	0.0100	"	"	--	"	83.2% (38-150)	0.957% "	"	
Pyrene	"	2.17	0.0500	0.0500	"	"	--	"	86.8% (33-150)	2.33% "	"	

Surrogate(s): Fluorene-d10 Recovery: 90.8% Limits: 25-150% " 09/30/04 19:36
 Pyrene-d10 84.8% 23-150% " "
 Benzo (a) pyrene-d12 83.6% 10-150% " "

North Creek Analytical - Portland

Joy D. Chang, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.	Project Name: Astoria Area-Wide / Baker Tank	
P.O. Box 80762	Project Number: 10077.013	Report Created:
Portland, OR 97280-0762	Project Manager: Tom Calabrese	10/04/04 12:58

Conventional Chemistry Parameters per APHA/EPA Methods - Laboratory Quality Control Results
 North Creek Analytical - Portland

QC Batch: 4090751 Water Preparation Method: General Preparation

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC (Limits)	% RPD (Limits)	Analyzed	Notes	
Duplicate (4090751-DUP1)			QC Source: P4I0597-01				Extracted: 09/17/04 10:15						
pH	150.1/9040A	8.01			pH Units	1x	8.04	--	--	--	0.374% (25)	09/17/04 10:15	

QC Batch: 4090878 Water Preparation Method: General Preparation

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC (Limits)	% RPD (Limits)	Analyzed	Notes	
Blank (4090878-BLK1)							Extracted: 09/21/04 09:24						
Total Suspended Solids	EPA 160.2	ND	1.19	10.0	mg/l	1x	--	--	--	--	09/21/04 17:10	U	
LCS (4090878-BS1)							Extracted: 09/21/04 09:24						
Total Suspended Solids	EPA 160.2	52.0	2.38	20.0	mg/l	1x	--	50.0	104% (80-120)	--	09/21/04 17:10	D	
Duplicate (4090878-DUP1)			QC Source: P4I0642-01				Extracted: 09/21/04 09:24						
Total Suspended Solids	EPA 160.2	4.00	1.19	10.0	mg/l	1x	4.00	--	--	--	0.00% (20)	09/21/04 17:10	J

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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North Creek Analytical, Inc.
 Environmental Laboratory Network

EnviroLogic Resources, Inc.

P.O. Box 80762
Portland, OR 97280-0762

Project Name: **Astoria Area-Wide / Baker Tank**

Project Number: 10077.013

Project Manager: Tom Calabrese

Report Created:
10/04/04 12:58

Notes and Definitions

Report Specific Notes:

- D - Data reported from a preparation or analytical dilution.
- F-02 - Since Total Oil & Grease was ND for sample, Non-polar hydrocarbon analysis was not performed.
- J - Estimated value.
- U - Analyte included in the analysis but not detected.

Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR / NA - Not Reported / Not Available
- dry - Sample results reported on a dry weight basis. Reporting Limits are corrected for %Solids when %Solids are <50%.
- wet - Sample results and reporting limits reported on a wet weight basis (as received).
- RPD - Relative Percent Difference. (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.





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 541-383-9310 FAX 382-7588
 907-334-9200 FAX 334-9210

ASTORIA AREA - WIDE

CHAIN OF CUSTODY REPORT

Work Order #: **PT10619**

CLIENT: EnviroLogic Resources		INVOICE TO:		EnviroLogic Resources	
REPORT TO: Tom Campbell		P.O. NUMBER: 10077.013		PRESERVATIVE	
ADDRESS: PO BOX 80763 Portland, OR 97280		PROJECT NAME: ASTORIA AREA WIDE		REQUESTED ANALYSES	
PHONE: 503-768-5101 FAX: 503-743-1801		PROJECT NUMBER: 10077.013		<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Semivolatile Organics <input type="checkbox"/> PCBs <input type="checkbox"/> Pesticides <input type="checkbox"/> PAHs <input type="checkbox"/> Metals <input type="checkbox"/> Inorganic Anions <input type="checkbox"/> Inorganic Cations <input type="checkbox"/> NCA <input type="checkbox"/> WOI D	
SAMPLED BY: MJB		SAMPLING DATE/TIME: 7-16-04 / 1445		OTHER: <input type="checkbox"/> Specify: _____	
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	ENVIRONMENTAL	LABORATORY	DATE	TIME
1. BAKER TANK	7-16-04 / 1445	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7-17-04	9:12
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

RECEIVED BY: **Michelle Pansino**
 PRINT NAME: **Michelle Pansino**
 RECEIVED BY: _____
 PRINT NAME: _____
 DATE: **9/17/04**
 TIME: **0912**
 FIRM: **NCA**

DATE: **7-17-04**
 TIME: **9:12**
 FIRM: **EnviroLogic Resources**

ADDITIONAL REMARKS: **8 LOW LEVELS**

TEMP: **5.7** PAGE **OF**

NORTH CREEK ANALYTICAL COOLER RECEIPT FORM

(Army Corp. compliant)

Client: Envirologic

1. Please sign for receipt and opening of 1 cooler or other

By (print) Carrie Farnsworth (sign) Carrie Farnsworth

2. Date samples received 9/17/04 Date opened: Same or / /

3. Delivered by: NCA courier FedEx UPS Courier Client Other
Airbill # if applicable (Put copy of shipping papers in file)

4. There were 0 custody seals present, signed by date / /

5. Were the custody seals unbroken and intact at the date and time of arrival? Yes No

6. Was ice used? yes no Type of ice: blue ice gel ice real ice
Temperature (degrees C) 5.7 Raytek thermometer Digi-Therm (probe temperature blank)

7. Are custody papers sealed in a plastic bag and taped inside to lid? Yes No

8. Were custody papers filled out properly (ink, signed, etc.)? Yes No
If "no" please specify:

9. Was project identifiable from custody papers? Yes No
Name of project Astoria (if applicable)

10. Initial and date for unpacking: VE (initials) date / /

11. Packing material: bubble wrap/bag styrofoam cardboard other

12. Were samples in bags? Yes No

13. Did all containers indicated on the COC arrive? Yes No
If "no" please indicate which containers were absent

14. Were all containers unbroken and labels in good condition? Yes No
If "no" please indicate which containers

15. Were all bottle labels complete (ID, date, time, signature, etc.)? Yes No
Do the IDs, times, etc. agree with the COC? Yes No
If "no" please indicate which containers

16. Are containers properly preserved for indicated analysis? Yes No

17. Is there adequate volume for the test(s) requested? Yes No

18. If voa vials were submitted, are they free of bubbles? N/A Yes No

19. Log-in phase: Date samples were logged in: 9/17/04 Elm Project # P 410019

20. Logged in by (print) Vanessa Elias (sign) Vanessa Elias

21. Was the project manager notified of status? (Use back of form as a record) Yes No