# Appendix A

## Chemicals Detected in Sediment Samples
## EAA-2: Near DMC Property

**Table A-1**
**Chemicals Detected in Surface Sediment Samples**
**EAA-2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Chemical | Conc'n (mg/kg DW) | TOC (%) | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|
| EPA Site Inspection | DR136 (702) | 2-Methylnaphthalene | 0.040 | 2.55 | 1.6 | 38 | 64 | mg/kg OC | 0.04 | 0.02 |
| EPA Site Inspection | DR136 (702) | Acenaphthene | 0.15 | 2.55 | 5.9 | 16 | 57 | mg/kg OC | 0.4 | 0.1 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Acenaphthene | 0.050 J | 1.97 | 2.5 | 16 | 57 | mg/kg OC | 0.2 | 0.04 |
| EPA Site Inspection | DR156 (722) | Acenaphthene | 0.020 | 2.75 | 0.73 | 16 | 57 | mg/kg OC | 0.05 | 0.01 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Acenaphthylene | 0.022 | 1.97 | 1.1 | 66 | 66 | mg/kg OC | 0.02 | 0.02 |
| EPA Site Inspection | DR156 (722) | Aluminum | 20,000 | 2.75 | | | | | | |
| EPA Site Inspection | DR136 (702) | Aluminum | 19,000 | 2.55 | | | | | | |
| EPA Site Inspection | DR169 (735) | Aluminum | 18,000 | 2.01 | | | | | | |
| EPA Site Inspection | DR137 (703) | Aluminum | 16,000 | 2.2 | | | | | | |
| EPA Site Inspection | DR136 (702) | Anthracene | 0.36 | 2.55 | 14 | 220 | 1200 | mg/kg OC | 0.06 | 0.01 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Anthracene | 0.13 | 1.97 | 6.6 | 220 | 1200 | mg/kg OC | 0.03 | 0.005 |
| EPA Site Inspection | DR137 (703) | Anthracene | 0.080 | 2.2 | 3.6 | 220 | 1200 | mg/kg OC | 0.02 | 0.003 |
| EPA Site Inspection | DR156 (722) | Anthracene | 0.050 | 2.75 | 1.8 | 220 | 1200 | mg/kg OC | 0.008 | 0.002 |
| EPA Site Inspection | DR169 (735) | Anthracene | 0.030 | 2.01 | 1.5 | 220 | 1200 | mg/kg OC | 0.007 | 0.001 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Aroclor-1248 | 0.061 | 1.97 | 3.1 | | | | | |
| EPA Site Inspection | DR137 (703) | Aroclor-1254 | 0.098 | 2.2 | 4.5 | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Aroclor-1254 | 0.078 | 1.97 | 4.0 | | | | | |
| EPA Site Inspection | DR156 (722) | Aroclor-1254 | 0.051 | 2.75 | 1.9 | | | | | |
| EPA Site Inspection | DR136 (702) | Aroclor-1254 | 0.038 | 2.55 | 1.5 | | | | | |
| EPA Site Inspection | DR169 (735) | Aroclor-1254 | 0.035 | 2.01 | 1.7 | | | | | |
| EPA Site Inspection | DR137 (703) | Aroclor-1260 | 0.083 J | 2.2 | 3.8 | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Aroclor-1260 | 0.061 | 1.97 | 3.1 | | | | | |
| EPA Site Inspection | DR136 (702) | Aroclor-1260 | 0.041 J | 2.55 | 1.6 | | | | | |
| EPA Site Inspection | DR156 (722) | Aroclor-1260 | 0.041 J | 2.75 | 1.5 | | | | | |
| EPA Site Inspection | DR169 (735) | Aroclor-1260 | 0.030 J | 2.01 | 1.5 | | | | | |
| EPA Site Inspection | DR136 (702) | Arsenic | 12 | 2.55 | | 57 | 93 | mg/kg DW | 0.2 | 0.1 |
| EPA Site Inspection | DR156 (722) | Arsenic | 12 | 2.75 | | 57 | 93 | mg/kg DW | 0.2 | 0.1 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Arsenic | 9.0 | 1.97 | | 57 | 93 | mg/kg DW | 0.2 | 0.1 |
| EPA Site Inspection | DR169 (735) | Arsenic | 8.0 | 2.01 | | 57 | 93 | mg/kg DW | 0.1 | 0.09 |
| EPA Site Inspection | DR137 (703) | Arsenic | 5.7 | 2.2 | | 57 | 93 | mg/kg DW | 0.1 | 0.06 |
| EPA Site Inspection | DR156 (722) | Barium | 86 | 2.75 | | | | | | |
| EPA Site Inspection | DR169 (735) | Barium | 70 | 2.01 | | | | | | |
| EPA Site Inspection | DR136 (702) | Barium | 69 | 2.55 | | | | | | |
| EPA Site Inspection | DR137 (703) | Barium | 56 | 2.2 | | | | | | |
| EPA Site Inspection | DR136 (702) | Benzo(a)anthracene | 1.6 | 2.55 | 63 | 110 | 270 | mg/kg OC | 0.6 | 0.2 |

**Table A-1**
**Chemicals Detected in Surface Sediment Samples**
**EAA-2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Chemical | Conc'n (mg/kg DW) | TOC (%) | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Benzo(a)anthracene | 0.40 | 1.97 | 20 | 110 | 270 | mg/kg OC | 0.2 | 0.08 |
| EPA Site Inspection | DR137 (703) | Benzo(a)anthracene | 0.22 | 2.2 | 10 | 110 | 270 | mg/kg OC | 0.09 | 0.04 |
| EPA Site Inspection | DR156 (722) | Benzo(a)anthracene | 0.19 | 2.75 | 6.9 | 110 | 270 | mg/kg OC | 0.06 | 0.03 |
| EPA Site Inspection | DR169 (735) | Benzo(a)anthracene | 0.10 | 2.01 | 5.0 | 110 | 270 | mg/kg OC | 0.05 | 0.02 |
| EPA Site Inspection | DR136 (702) | Benzo(a)pyrene | 1.3 | 2.55 | 51 | 99 | 210 | mg/kg OC | 0.5 | 0.2 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Benzo(a)pyrene | 0.33 | 1.97 | 17 | 99 | 210 | mg/kg OC | 0.2 | 0.08 |
| EPA Site Inspection | DR137 (703) | Benzo(a)pyrene | 0.20 | 2.2 | 9.1 | 99 | 210 | mg/kg OC | 0.09 | 0.04 |
| EPA Site Inspection | DR156 (722) | Benzo(a)pyrene | 0.18 | 2.75 | 6.5 | 99 | 210 | mg/kg OC | 0.07 | 0.03 |
| EPA Site Inspection | DR169 (735) | Benzo(a)pyrene | 0.090 | 2.01 | 4.5 | 99 | 210 | mg/kg OC | 0.05 | 0.02 |
| EPA Site Inspection | DR136 (702) | Benzo(b)fluoranthene | 1.7 | 2.55 | 67 | 230 | 450 | mg/kg OC | 0.3 | 0.1 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Benzo(b)fluoranthene | 0.51 | 1.97 | 26 | 230 | 450 | mg/kg OC | 0.1 | 0.06 |
| EPA Site Inspection | DR137 (703) | Benzo(b)fluoranthene | 0.25 | 2.2 | 11 | 230 | 450 | mg/kg OC | 0.05 | 0.03 |
| EPA Site Inspection | DR156 (722) | Benzo(b)fluoranthene | 0.23 | 2.75 | 8.4 | 230 | 450 | mg/kg OC | 0.04 | 0.02 |
| EPA Site Inspection | DR169 (735) | Benzo(b)fluoranthene | 0.12 | 2.01 | 6.0 | 230 | 450 | mg/kg OC | 0.03 | 0.01 |
| EPA Site Inspection | DR136 (702) | Benzo(g,h,i)perylene | 0.84 | 2.55 | 33 | 31 | 78 | mg/kg OC | 1.1 | 0.4 |
| EPA Site Inspection | DR156 (722) | Benzo(g,h,i)perylene | 0.12 | 2.75 | 4.4 | 31 | 78 | mg/kg OC | 0.1 | 0.06 |
| EPA Site Inspection | DR137 (703) | Benzo(g,h,i)perylene | 0.11 | 2.2 | 5.0 | 31 | 78 | mg/kg OC | 0.2 | 0.06 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Benzo(g,h,i)perylene | 0.085 | 1.97 | 4.3 | 31 | 78 | mg/kg OC | 0.1 | 0.06 |
| EPA Site Inspection | DR169 (735) | Benzo(g,h,i)perylene | 0.060 | 2.01 | 3.0 | 31 | 78 | mg/kg OC | 0.1 | 0.04 |
| EPA Site Inspection | DR136 (702) | Benzo(k)fluoranthene | 1.1 | 2.55 | 43 | 230 | 450 | mg/kg OC | 0.2 | 0.1 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Benzo(k)fluoranthene | 0.32 | 1.97 | 16 | 230 | 450 | mg/kg OC | 0.07 | 0.04 |
| EPA Site Inspection | DR137 (703) | Benzo(k)fluoranthene | 0.19 | 2.2 | 8.6 | 230 | 450 | mg/kg OC | 0.04 | 0.02 |
| EPA Site Inspection | DR156 (722) | Benzo(k)fluoranthene | 0.16 | 2.75 | 5.8 | 230 | 450 | mg/kg OC | 0.03 | 0.01 |
| EPA Site Inspection | DR169 (735) | Benzo(k)fluoranthene | 0.090 | 2.01 | 4.5 | 230 | 450 | mg/kg OC | 0.02 | 0.01 |
| EPA Site Inspection | DR136 (702) | Benzofluoranthenes (total-calc'd) | 2.8 | 2.55 | 110 | 230 | 450 | mg/kg OC | 0.5 | 0.2 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Benzofluoranthenes (total-calc'd) | 0.83 | 1.97 | 42 | 230 | 450 | mg/kg OC | 0.2 | 0.09 |
| EPA Site Inspection | DR137 (703) | Benzofluoranthenes (total-calc'd) | 0.44 | 2.2 | 20 | 230 | 450 | mg/kg OC | 0.09 | 0.04 |
| EPA Site Inspection | DR156 (722) | Benzofluoranthenes (total-calc'd) | 0.39 | 2.75 | 14 | 230 | 450 | mg/kg OC | 0.06 | 0.03 |
| EPA Site Inspection | DR169 (735) | Benzofluoranthenes (total-calc'd) | 0.21 | 2.01 | 10 | 230 | 450 | mg/kg OC | 0.05 | 0.02 |
| EPA Site Inspection | DR136 (702) | Beryllium | 0.54 | 2.55 | | | | | | |
| EPA Site Inspection | DR156 (722) | Beryllium | 0.54 | 2.75 | | | | | | |
| EPA Site Inspection | DR169 (735) | Beryllium | 0.43 | 2.01 | | | | | | |
| EPA Site Inspection | DR137 (703) | Beryllium | 0.31 | 2.2 | | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Bis(2-ethylhexyl)phthalate | 0.19 | 1.97 | 9.6 | 47 | 78 | mg/kg OC | 0.2 | 0.1 |
| EPA Site Inspection | DR136 (702) | Butyl benzyl phthalate | 0.050 | 2.55 | 2.0 | 4.9 | 64 | mg/kg OC | 0.4 | 0.03 |

**Table A-1**
**Chemicals Detected in Surface Sediment Samples**
**EAA-2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Chemical | Conc'n (mg/kg DW) | TOC (%) | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|
| EPA Site Inspection | DR137 (703) | Butyl benzyl phthalate | 0.030 | 2.2 | 1.4 | 4.9 | 64 | mg/kg OC | 0.3 | 0.02 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Cadmium | 0.40 | 1.97 | | 5.1 | 6.7 | mg/kg DW | 0.08 | 0.06 |
| EPA Site Inspection | DR156 (722) | Cadmium | 0.38 | 2.75 | | 5.1 | 6.7 | mg/kg DW | 0.07 | 0.06 |
| EPA Site Inspection | DR136 (702) | Cadmium | 0.36 | 2.55 | | 5.1 | 6.7 | mg/kg DW | 0.07 | 0.05 |
| EPA Site Inspection | DR137 (703) | Cadmium | 0.27 | 2.2 | | 5.1 | 6.7 | mg/kg DW | 0.05 | 0.04 |
| EPA Site Inspection | DR169 (735) | Cadmium | 0.17 | 2.01 | | 5.1 | 6.7 | mg/kg DW | 0.03 | 0.03 |
| EPA Site Inspection | DR136 (702) | Carbazole | 0.34 | 2.55 | 13 | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Carbazole | 0.056 J | 1.97 | 2.8 | | | | | |
| EPA Site Inspection | DR137 (703) | Carbazole | 0.020 | 2.2 | 0.91 | | | | | |
| EPA Site Inspection | DR156 (722) | Carbazole | 0.020 | 2.75 | 0.73 | | | | | |
| EPA Site Inspection | DR156 (722) | Chromium | 28 | 2.75 | | 260 | 270 | mg/kg DW | 0.1 | 0.1 |
| EPA Site Inspection | DR136 (702) | Chromium | 27 | 2.55 | | 260 | 270 | mg/kg DW | 0.1 | 0.1 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Chromium | 27 | 1.97 | | 260 | 270 | mg/kg DW | 0.1 | 0.1 |
| EPA Site Inspection | DR169 (735) | Chromium | 26 | 2.01 | | 260 | 270 | mg/kg DW | 0.1 | 0.1 |
| EPA Site Inspection | DR137 (703) | Chromium | 24 | 2.2 | | 260 | 270 | mg/kg DW | 0.09 | 0.09 |
| EPA Site Inspection | DR136 (702) | Chrysene | 1.8 | 2.55 | 71 | 110 | 460 | mg/kg OC | 0.6 | 0.2 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Chrysene | 0.61 | 1.97 | 31 | 110 | 460 | mg/kg OC | 0.3 | 0.07 |
| EPA Site Inspection | DR137 (703) | Chrysene | 0.35 | 2.2 | 16 | 110 | 460 | mg/kg OC | 0.1 | 0.03 |
| EPA Site Inspection | DR156 (722) | Chrysene | 0.26 | 2.75 | 9.5 | 110 | 460 | mg/kg OC | 0.09 | 0.02 |
| EPA Site Inspection | DR169 (735) | Chrysene | 0.14 | 2.01 | 7.0 | 110 | 460 | mg/kg OC | 0.06 | 0.02 |
| EPA Site Inspection | DR156 (722) | Cobalt | 10 | 2.75 | | | | | | |
| EPA Site Inspection | DR136 (702) | Cobalt | 9.0 | 2.55 | | | | | | |
| EPA Site Inspection | DR169 (735) | Cobalt | 9.0 | 2.01 | | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Cobalt | 8.6 | 1.97 | | | | | | |
| EPA Site Inspection | DR137 (703) | Cobalt | 7.0 | 2.2 | | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Copper | 55.7 | 1.97 | | 390 | 390 | mg/kg DW | 0.1 | 0.1 |
| EPA Site Inspection | DR156 (722) | Copper | 48 | 2.75 | | 390 | 390 | mg/kg DW | 0.1 | 0.1 |
| EPA Site Inspection | DR136 (702) | Copper | 44 | 2.55 | | 390 | 390 | mg/kg DW | 0.1 | 0.1 |
| EPA Site Inspection | DR137 (703) | Copper | 39 | 2.2 | | 390 | 390 | mg/kg DW | 0.1 | 0.1 |
| EPA Site Inspection | DR169 (735) | Copper | 34 | 2.01 | | 390 | 390 | mg/kg DW | 0.09 | 0.09 |
| EPA Site Inspection | DR136 (702) | Dibenzo(a,h)anthracene | 0.19 | 2.55 | 7.5 | 12 | 33 | mg/kg OC | 0.6 | 0.2 |
| EPA Site Inspection | DR137 (703) | Dibenzo(a,h)anthracene | 0.030 | 2.2 | 1.4 | 12 | 33 | mg/kg OC | 0.1 | 0.04 |
| EPA Site Inspection | DR156 (722) | Dibenzo(a,h)anthracene | 0.030 | 2.75 | 1.1 | 12 | 33 | mg/kg OC | 0.09 | 0.03 |
| EPA Site Inspection | DR136 (702) | Dibenzofuran | 0.14 | 2.55 | 5.5 | 15 | 58 | mg/kg OC | 0.4 | 0.09 |
| EPA Site Inspection | DR136 (702) | Dibutyltin as ion | 0.031 | 2.55 | | | | | | |

**Table A-1**
**Chemicals Detected in Surface Sediment Samples**
**EAA-2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Chemical | Conc'n (mg/kg DW) | TOC (%) | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|
| EPA Site Inspection | DR136 (702) | Fluoranthene | 4.0 | 2.55 | 157 | 160 | 1200 | mg/kg OC | 1.0 | 0.1 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Fluoranthene | 0.82 | 1.97 | 42 | 160 | 1200 | mg/kg OC | 0.3 | 0.03 |
| EPA Site Inspection | DR156 (722) | Fluoranthene | 0.51 | 2.75 | 19 | 160 | 1200 | mg/kg OC | 0.1 | 0.02 |
| EPA Site Inspection | DR137 (703) | Fluoranthene | 0.43 | 2.2 | 20 | 160 | 1200 | mg/kg OC | 0.1 | 0.02 |
| EPA Site Inspection | DR169 (735) | Fluoranthene | 0.26 | 2.01 | 13 | 160 | 1200 | mg/kg OC | 0.08 | 0.01 |
| EPA Site Inspection | DR136 (702) | Fluorene | 0.15 | 2.55 | 5.9 | 23 | 79 | mg/kg OC | 0.3 | 0.07 |
| EPA Site Inspection | DR137 (703) | Fluorene | 0.03 | 2.2 | 1.4 | 23 | 79 | mg/kg OC | 0.06 | 0.02 |
| EPA Site Inspection | DR156 (722) | Fluorene | 0.03 | 2.75 | 1.1 | 23 | 79 | mg/kg OC | 0.05 | 0.01 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Fluorene | 0.024 | 1.97 | 1.2 | 23 | 79 | mg/kg OC | 0.05 | 0.02 |
| EPA Site Inspection | DR136 (702) | Indeno(1,2,3-cd)pyrene | 0.94 | 2.55 | 37 | 34 | 88 | mg/kg OC | 1.1 | 0.4 |
| EPA Site Inspection | DR137 (703) | Indeno(1,2,3-cd)pyrene | 0.12 | 2.2 | 5.5 | 34 | 88 | mg/kg OC | 0.2 | 0.06 |
| EPA Site Inspection | DR156 (722) | Indeno(1,2,3-cd)pyrene | 0.12 | 2.75 | 4.4 | 34 | 88 | mg/kg OC | 0.1 | 0.05 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Indeno(1,2,3-cd)pyrene | 0.12 | 1.97 | 6.1 | 34 | 88 | mg/kg OC | 0.2 | 0.07 |
| EPA Site Inspection | DR169 (735) | Indeno(1,2,3-cd)pyrene | 0.060 | 2.01 | 3.0 | 34 | 88 | mg/kg OC | 0.09 | 0.03 |
| EPA Site Inspection | DR156 (722) | Iron | 26,000 J | 2.75 | | | | | | |
| EPA Site Inspection | DR136 (702) | Iron | 25,000 J | 2.55 | | | | | | |
| EPA Site Inspection | DR169 (735) | Iron | 23,000 J | 2.01 | | | | | | |
| EPA Site Inspection | DR137 (703) | Iron | 22,000 J | 2.2 | | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Lead | 180 | 1.97 | | 450 | 530 | mg/kg DW | 0.4 | 0.3 |
| EPA Site Inspection | DR137 (703) | Lead | 53 | 2.2 | | 450 | 530 | mg/kg DW | 0.1 | 0.1 |
| EPA Site Inspection | DR136 (702) | Lead | 33 | 2.55 | | 450 | 530 | mg/kg DW | 0.07 | 0.06 |
| EPA Site Inspection | DR156 (722) | Lead | 29 | 2.75 | | 450 | 530 | mg/kg DW | 0.06 | 0.05 |
| EPA Site Inspection | DR169 (735) | Lead | 19 | 2.01 | | 450 | 530 | mg/kg DW | 0.04 | 0.04 |
| EPA Site Inspection | DR156 (722) | Manganese | 300 | 2.75 | | | | | | |
| EPA Site Inspection | DR136 (702) | Manganese | 260 | 2.55 | | | | | | |
| EPA Site Inspection | DR169 (735) | Manganese | 240 | 2.01 | | | | | | |
| EPA Site Inspection | DR137 (703) | Manganese | 210 | 2.2 | | | | | | |
| EPA Site Inspection | DR136 (702) | Mercury | 0.17 | 2.55 | | 0.41 | 0.59 | mg/kg DW | 0.4 | 0.3 |
| EPA Site Inspection | DR156 (722) | Mercury | 0.15 | 2.75 | | 0.41 | 0.59 | mg/kg DW | 0.4 | 0.3 |
| EPA Site Inspection | DR137 (703) | Mercury | 0.14 | 2.2 | | 0.41 | 0.59 | mg/kg DW | 0.3 | 0.2 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Mercury | 0.13 | 1.97 | | 0.41 | 0.59 | mg/kg DW | 0.3 | 0.2 |
| EPA Site Inspection | DR169 (735) | Mercury | 0.12 | 2.01 | | 0.41 | 0.59 | mg/kg DW | 0.3 | 0.2 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Molybdenum | 1.0 | 1.97 | | | | | | |
| EPA Site Inspection | DR136 (702) | Monobutyltin as ion | 0.022 J | 2.55 | | | | | | |
| EPA Site Inspection | DR136 (702) | Naphthalene | 0.040 | 2.55 | 1.6 | 99 | 170 | mg/kg OC | 0.02 | 0.009 |

**Table A-1**
**Chemicals Detected in Surface Sediment Samples**
**EAA-2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Chemical | Conc'n (mg/kg DW) | | TOC (%) | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA Site Inspection | DR169 (735) | Nickel | 24 | | 2.01 | | | | | | |
| EPA Site Inspection | DR136 (702) | Nickel | 23 | | 2.55 | | | | | | |
| EPA Site Inspection | DR156 (722) | Nickel | 23 | | 2.75 | | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Nickel | 20 | | 1.97 | | | | | | |
| EPA Site Inspection | DR137 (703) | Nickel | 16 | | 2.2 | | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | PCBs (total calc'd) | 0.20 | | 1.97 | 10 | 12 | 65 | mg/kg OC | 0.8 | 0.2 |
| EPA Site Inspection | DR137 (703) | PCBs (total calc'd) | 0.18 | J | 2.2 | 8.2 | 12 | 65 | mg/kg OC | 0.7 | 0.1 |
| NOAA Site Characterization | WST347 (322) | PCBs (total calc'd) | 0.14 | | 1.55 | 9.0 | 12 | 65 | mg/kg OC | 0.8 | 0.1 |
| NOAA Site Characterization | WST345 (320) | PCBs (total calc'd) | 0.11 | | 1.89 | 5.8 | 12 | 65 | mg/kg OC | 0.5 | 0.09 |
| NOAA Site Characterization | WST346 (321) | PCBs (total calc'd) | 0.11 | | 2.04 | 5.4 | 12 | 65 | mg/kg OC | 0.4 | 0.08 |
| EPA Site Inspection | DR156 (722) | PCBs (total calc'd) | 0.092 | J | 2.75 | 3.3 | 12 | 65 | mg/kg OC | 0.3 | 0.05 |
| EPA Site Inspection | DR136 (702) | PCBs (total calc'd) | 0.079 | J | 2.55 | 3.1 | 12 | 65 | mg/kg OC | 0.3 | 0.05 |
| EPA Site Inspection | DR169 (735) | PCBs (total calc'd) | 0.065 | J | 2.01 | 3.2 | 12 | 65 | mg/kg OC | 0.3 | 0.05 |
| NOAA Site Characterization | WST347 (322) | PCTs (total) | 0.032 | | 1.55 | 2.1 | | | | | |
| NOAA Site Characterization | WST346 (321) | PCTs (total) | 0.015 | | 2.04 | 0.74 | | | | | |
| NOAA Site Characterization | WST345 (320) | PCTs (total) | 0.010 | | 1.89 | 0.53 | | | | | |
| EPA Site Inspection | DR136 (702) | Phenanthrene | 1.6 | | 2.55 | 63 | 100 | 480 | mg/kg OC | 0.6 | 0.1 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Phenanthrene | 0.31 | | 1.97 | 16 | 100 | 480 | mg/kg OC | 0.2 | 0.03 |
| EPA Site Inspection | DR137 (703) | Phenanthrene | 0.19 | | 2.2 | 8.6 | 100 | 480 | mg/kg OC | 0.09 | 0.02 |
| EPA Site Inspection | DR156 (722) | Phenanthrene | 0.14 | | 2.75 | 5.1 | 100 | 480 | mg/kg OC | 0.05 | 0.01 |
| EPA Site Inspection | DR169 (735) | Phenanthrene | 0.090 | | 2.01 | 4.5 | 100 | 480 | mg/kg OC | 0.04 | 0.009 |
| EPA Site Inspection | DR136 (702) | Phenol | 0.020 | | 2.55 | | 420 | 1200 | ug/kg DW | 0.05 | 0.02 |
| EPA Site Inspection | DR169 (735) | Phenol | 0.020 | | 2.01 | | 420 | 1200 | ug/kg DW | 0.05 | 0.02 |
| EPA Site Inspection | DR136 (702) | Pyrene | 3.2 | | 2.55 | 125 | 1000 | 1400 | mg/kg OC | 0.1 | 0.09 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Pyrene | 0.62 | | 1.97 | 31 | 1000 | 1400 | mg/kg OC | 0.03 | 0.02 |
| EPA Site Inspection | DR137 (703) | Pyrene | 0.56 | | 2.2 | 25 | 1000 | 1400 | mg/kg OC | 0.03 | 0.02 |
| EPA Site Inspection | DR156 (722) | Pyrene | 0.39 | | 2.75 | 14 | 1000 | 1400 | mg/kg OC | 0.01 | 0.01 |
| EPA Site Inspection | DR169 (735) | Pyrene | 0.23 | | 2.01 | 11 | 1000 | 1400 | mg/kg OC | 0.01 | 0.008 |
| EPA Site Inspection | DR156 (722) | Selenium | 7.0 | | 2.75 | | | | | | |
| EPA Site Inspection | DR169 (735) | Selenium | 7.0 | | 2.01 | | | | | | |
| EPA Site Inspection | DR136 (702) | Selenium | 6.0 | | 2.55 | | | | | | |
| EPA Site Inspection | DR137 (703) | Selenium | 4.0 | | 2.2 | | | | | | |
| EPA Site Inspection | DR136 (702) | Silver | 0.23 | | 2.55 | | 6.1 | 6.1 | mg/kg DW | 0.04 | 0.04 |
| EPA Site Inspection | DR156 (722) | Silver | 0.22 | | 2.75 | | 6.1 | 6.1 | mg/kg DW | 0.04 | 0.04 |
| EPA Site Inspection | DR137 (703) | Silver | 0.19 | | 2.2 | | 6.1 | 6.1 | mg/kg DW | 0.03 | 0.03 |

**Table A-1**
**Chemicals Detected in Surface Sediment Samples**
**EAA-2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Chemical | Conc'n (mg/kg DW) | TOC (%) | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|
| EPA Site Inspection | DR169 (735) | Silver | 0.15 | 2.01 | | 6.1 | 6.1 | mg/kg DW | 0.02 | 0.02 |
| EPA Site Inspection | DR156 (722) | Thallium | 0.11 | 2.75 | | | | | | |
| EPA Site Inspection | DR136 (702) | Thallium | 0.10 | 2.55 | | | | | | |
| EPA Site Inspection | DR169 (735) | Thallium | 0.10 | 2.01 | | | | | | |
| EPA Site Inspection | DR137 (703) | Thallium | 0.090 | 2.2 | | | | | | |
| EPA Site Inspection | DR137 (703) | Tin | 4.0 | 2.2 | | | | | | |
| EPA Site Inspection | DR136 (702) | Tin | 3.0 | 2.55 | | | | | | |
| EPA Site Inspection | DR156 (722) | Tin | 3.0 | 2.75 | | | | | | |
| EPA Site Inspection | DR136 (702) | Total HPAH (calc'd) | 16.7 | 2.55 | 655 | 960 | 5300 | mg/kg OC | 0.7 | 0.1 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Total HPAH (calc'd) | 3.8 | 1.97 | 194 | 960 | 5300 | mg/kg OC | 0.2 | 0.04 |
| EPA Site Inspection | DR137 (703) | Total HPAH (calc'd) | 2.5 | 2.2 | 112 | 960 | 5300 | mg/kg OC | 0.1 | 0.02 |
| EPA Site Inspection | DR156 (722) | Total HPAH (calc'd) | 2.2 | 2.75 | 80 | 960 | 5300 | mg/kg OC | 0.08 | 0.02 |
| EPA Site Inspection | DR169 (735) | Total HPAH (calc'd) | 1.2 | 2.01 | 57 | 960 | 5300 | mg/kg OC | 0.06 | 0.01 |
| EPA Site Inspection | DR136 (702) | Total LPAH (calc'd) | 2.3 | 2.55 | 90 | 370 | 780 | mg/kg OC | 0.2 | 0.12 |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Total LPAH (calc'd) | 0.54 J | 1.97 | 27 | 370 | 780 | mg/kg OC | 0.07 | 0.04 |
| EPA Site Inspection | DR137 (703) | Total LPAH (calc'd) | 0.30 | 2.2 | 14 | 370 | 780 | mg/kg OC | 0.04 | 0.02 |
| EPA Site Inspection | DR156 (722) | Total LPAH (calc'd) | 0.24 | 2.75 | 8.7 | 370 | 780 | mg/kg OC | 0.02 | 0.01 |
| EPA Site Inspection | DR169 (735) | Total LPAH (calc'd) | 0.12 | 2.01 | 6.0 | 370 | 780 | mg/kg OC | 0.02 | 0.008 |
| EPA Site Inspection | DR136 (702) | Total PAH (calc'd) | 19 | 2.55 | 745 | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Total PAH (calc'd) | 4.4 J | 1.97 | 221 | | | | | |
| EPA Site Inspection | DR137 (703) | Total PAH (calc'd) | 2.8 | 2.2 | 125 | | | | | |
| EPA Site Inspection | DR156 (722) | Total PAH (calc'd) | 2.4 | 2.75 | 88 | | | | | |
| EPA Site Inspection | DR169 (735) | Total PAH (calc'd) | 1.3 | 2.01 | 63 | | | | | |
| EPA Site Inspection | DR136 (702) | Tributyltin as ion | 0.12 | 2.55 | | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Vanadium | 62.1 | 1.97 | | | | | | |
| EPA Site Inspection | DR156 (722) | Vanadium | 54 | 2.75 | | | | | | |
| EPA Site Inspection | DR136 (702) | Vanadium | 53 | 2.55 | | | | | | |
| EPA Site Inspection | DR169 (735) | Vanadium | 49 | 2.01 | | | | | | |
| EPA Site Inspection | DR137 (703) | Vanadium | 47 | 2.2 | | | | | | |
| LDW RI Phase 2 Round 2 | LDW-SS82 (12904) | Zinc | 128 | 1.97 | | 410 | 960 | mg/kg DW | 0.3 | 0.1 |
| EPA Site Inspection | DR136 (702) | Zinc | 92 | 2.55 | | 410 | 960 | mg/kg DW | 0.2 | 0.1 |
| EPA Site Inspection | DR156 (722) | Zinc | 92 | 2.75 | | 410 | 960 | mg/kg DW | 0.2 | 0.1 |
| EPA Site Inspection | DR137 (703) | Zinc | 88 | 2.2 | | 410 | 960 | mg/kg DW | 0.2 | 0.09 |
| EPA Site Inspection | DR169 (735) | Zinc | 70 | 2.01 | | 410 | 960 | mg/kg DW | 0.2 | 0.07 |

**Table A-1**
**Chemicals Detected in Surface Sediment Samples**
**EAA-2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Chemical | Conc'n (mg/kg DW) | TOC (%) | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|

DW - Dry weight
TOC - Total organic carbon
OC - Organic carbon normalized
SQS - Sediment Quality Standard
CSL - Cleanup Screening Level
PAH - Polynuclear aromatic hydrocarbon
PCB - polychlorinated biphenyl

**Notes:**
(1) Exceedance factorss are the ratio of the detected concentrations to the CSL or SQS
(2) Chemicals with exceedance factors greater than 1 are highlighted gray.

**Table A-2**
**Chemicals Detected in Subsurface Sediment Samples**
**EAA2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Sample Depth (feet) | Chemical | Conc'n (mg/kg DW) | TOC % | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,4,6,7,8-HpCDD | 3.4E-04 | 0.633 | 5.4E-02 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,4,6,7,8-HpCDD | 1.9E-04 | 0.747 | 2.5E-02 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,4,6,7,8-HpCDD | 2.1E-04 | 1.02 | 2.0E-02 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,4,6,7,8-HpCDD | 2.7E-04 | 1.56 | 1.7E-02 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 1,2,3,4,6,7,8-HpCDD | 1.3E-05 | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,4,6,7,8-HpCDF | 3.6E-05 | 0.633 | 5.7E-03 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,4,6,7,8-HpCDF | 7.6E-05 | 1.56 | 4.9E-03 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,4,6,7,8-HpCDF | 3.5E-05 | 0.747 | 4.7E-03 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,4,6,7,8-HpCDF | 3.2E-05 | 1.02 | 3.1E-03 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 1,2,3,4,6,7,8-HpCDF | 2.2E-06 | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,4,7,8,9-HpCDF | 6.4E-06 | 1.56 | 4.1E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,4,7,8,9-HpCDF | 2.3E-06 | 0.633 | 3.6E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,4,7,8,9-HpCDF | 2.3E-06 | 0.747 | 3.0E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,4,7,8,9-HpCDF | 2.3E-06 | 1.02 | 2.2E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 1,2,3,4,7,8,9-HpCDF | 1.3E-07 J | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,4,7,8-HxCDD | 5.6E-06 | 0.633 | 8.8E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,4,7,8-HxCDD | 2.6E-06 | 1.02 | 2.5E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,4,7,8-HxCDD | 1.4E-06 | 0.747 | 1.9E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,4,7,8-HxCDD | 2.8E-06 | 1.56 | 1.8E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 1,2,3,4,7,8-HxCDD | 1.7E-07 J | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,4,7,8-HxCDF | 1.3E-05 | 1.56 | 8.1E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,4,7,8-HxCDF | 5.2E-06 | 0.747 | 7.0E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,4,7,8-HxCDF | 3.8E-06 | 0.633 | 5.9E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,4,7,8-HxCDF | 3.7E-06 | 1.02 | 3.7E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 1,2,3,4,7,8-HxCDF | 2.1E-07 J | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,6,7,8-HxCDD | 1.6E-05 | 0.633 | 2.5E-03 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,6,7,8-HxCDD | 6.6E-06 | 0.747 | 8.8E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,6,7,8-HxCDD | 1.3E-05 | 1.56 | 8.5E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,6,7,8-HxCDD | 8.3E-06 | 1.02 | 8.2E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 1,2,3,6,7,8-HxCDD | 4.3E-07 J | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,6,7,8-HxCDF | 1.7E-06 | 0.633 | 2.6E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,6,7,8-HxCDF | 3.6E-06 | 1.56 | 2.3E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,6,7,8-HxCDF | 1.5E-06 | 0.747 | 2.0E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,6,7,8-HxCDF | 1.3E-06 | 1.02 | 1.3E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 1,2,3,6,7,8-HxCDF | 1.4E-07 J | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,7,8,9-HxCDD | 1.5E-05 | 0.633 | 2.4E-03 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,7,8,9-HxCDD | 7.6E-06 | 1.02 | 7.5E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,7,8,9-HxCDD | 5.3E-06 | 0.747 | 7.1E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,7,8,9-HxCDD | 1.1E-05 | 1.56 | 7.0E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 1,2,3,7,8,9-HxCDD | 4.7E-07 J | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,7,8,9-HxCDF | 2.9E-07 J | 1.56 | 1.8E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,7,8-PeCDD | 2.8E-06 | 0.633 | 4.5E-04 | | | mg/kg OC | | |

**Table A-2**
**Chemicals Detected in Subsurface Sediment Samples**
**EAA2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Sample Depth (feet) | Chemical | Conc'n (mg/kg DW) | TOC % | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,7,8-PeCDD | 2.6E-06 | 1.56 | 1.7E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,7,8-PeCDD | 1.4E-06 | 1.02 | 1.4E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,7,8-PeCDD | 1.0E-06 | 0.747 | 1.4E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 1,2,3,7,8-PeCDD | 8.5E-08 J | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 1,2,3,7,8-PeCDF | 5.6E-07 J | 0.633 | 8.8E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 1,2,3,7,8-PeCDF | 9.6E-07 | 1.56 | 6.2E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 1,2,3,7,8-PeCDF | 4.1E-07 J | 0.747 | 5.5E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 1,2,3,7,8-PeCDF | 3.6E-07 J | 1.02 | 3.5E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 2,3,4,6,7,8-HxCDF | 1.3E-06 | 0.633 | 2.0E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 2,3,4,6,7,8-HxCDF | 2.3E-06 | 1.56 | 1.5E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 2,3,4,6,7,8-HxCDF | 1.0E-06 | 0.747 | 1.4E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 2,3,4,6,7,8-HxCDF | 1.0E-06 | 1.02 | 1.0E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 2,3,4,6,7,8-HxCDF | 1.5E-07 J | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 2,3,4,7,8-PeCDF | 1.1E-06 | 0.633 | 1.8E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 2,3,4,7,8-PeCDF | 1.1E-06 | 0.747 | 1.5E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 2,3,4,7,8-PeCDF | 2.2E-06 | 1.56 | 1.4E-04 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 2,3,4,7,8-PeCDF | 1.0E-06 | 1.02 | 9.9E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | 2,3,4,7,8-PeCDF | 1.1E-07 J | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | 2,3,7,8-TCDD | 3.0E-07 | 0.211 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | 2,3,7,8-TCDD | 7.5E-07 | 1.02 | 7.4E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | 2,3,7,8-TCDD | 4.1E-07 | 0.633 | 6.4E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | 2,3,7,8-TCDD | 9.2E-07 | 1.56 | 5.9E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 2,3,7,8-TCDD | 4.0E-07 | 0.747 | 5.3E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | 2,3,7,8-TCDF | 4.5E-07 | 0.747 | 6.0E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Acenaphthene | 0.021 J | 1.56 | 1.3 | 16 | 57 | mg/kg OC | 0.08 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Anthracene | 0.058 J | 1.02 | 5.7 | 220 | 1200 | mg/kg OC | 0.03 | 0.005 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Anthracene | 0.032 | 0.747 | 4.3 | 220 | 1200 | mg/kg OC | 0.02 | 0.004 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Aroclor-1248 | 0.074 | 0.633 | 12 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Aroclor-1248 | 0.061 | 0.747 | 8.2 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Aroclor-1248 | 0.031 | 1.02 | 3.0 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Aroclor-1248 | 0.042 | 1.56 | 2.7 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Aroclor-1254 | 0.19 | 0.633 | 30 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Aroclor-1254 | 0.10 J | 0.747 | 13 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Aroclor-1254 | 0.086 | 1.02 | 8.4 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Aroclor-1254 | 0.090 | 1.56 | 5.8 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Aroclor-1260 | 0.18 | 0.633 | 28 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Aroclor-1260 | 0.091 | 1.02 | 8.9 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41943) | 4 - 6 | Aroclor-1260 | 0.15 | 2.5 | 6.0 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Aroclor-1260 | 0.088 | 1.56 | 5.6 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Arsenic | 7.0 | 0.633 | | 57 | 93 | mg/kg DW | 0.1 | 0.08 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Arsenic | 7.0 | 0.747 | | 57 | 93 | mg/kg DW | 0.1 | 0.08 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Arsenic | 9.0 | 1.02 | | 57 | 93 | mg/kg DW | 0.2 | 0.1 |

**Table A-2**
**Chemicals Detected in Subsurface Sediment Samples**
**EAA2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Sample Depth (feet) | Chemical | Conc'n (mg/kg DW) | TOC % | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Arsenic | 14 | 1.56 | | 57 | 93 | mg/kg DW | 0.2 | 0.2 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Benzo(a)anthracene | 0.21 | 1.02 | 21 | 110 | 270 | mg/kg OC | 0.2 | 0.08 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Benzo(a)anthracene | 0.054 | 0.747 | 7.2 | 110 | 270 | mg/kg OC | 0.07 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Benzo(a)anthracene | 0.042 J | 0.633 | 6.6 | 110 | 270 | mg/kg OC | 0.06 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Benzo(a)anthracene | 0.037 J | 1.56 | 2.4 | 110 | 270 | mg/kg OC | 0.02 | 0.009 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Benzo(a)pyrene | 0.16 | 1.02 | 16 | 99 | 210 | mg/kg OC | 0.2 | 0.07 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Benzo(a)pyrene | 0.046 J | 0.633 | 7.3 | 99 | 210 | mg/kg OC | 0.07 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Benzo(a)pyrene | 0.030 | 0.747 | 4.0 | 99 | 210 | mg/kg OC | 0.04 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Benzo(a)pyrene | 0.036 J | 1.56 | 2.3 | 99 | 210 | mg/kg OC | 0.02 | 0.01 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Benzo(b)fluoranthene | 0.27 | 1.02 | 26 | 230 | 450 | mg/kg OC | 0.1 | 0.06 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Benzo(b)fluoranthene | 0.048 J | 0.633 | 7.6 | 230 | 450 | mg/kg OC | 0.03 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Benzo(b)fluoranthene | 0.041 | 0.747 | 5.5 | 230 | 450 | mg/kg OC | 0.02 | 0.01 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Benzo(b)fluoranthene | 0.055 | 1.56 | 3.5 | 230 | 450 | mg/kg OC | 0.02 | 0.008 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Benzo(g,h,i)perylene | 0.043 J | 1.02 | 4.2 | 31 | 78 | mg/kg OC | 0.1 | 0.05 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Benzo(g,h,i)perylene | 0.018 J | 0.747 | 2.4 | 31 | 78 | mg/kg OC | 0.08 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Benzo(k)fluoranthene | 0.29 | 1.02 | 28 | 230 | 450 | mg/kg OC | 0.1 | 0.06 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Benzo(k)fluoranthene | 0.054 J | 0.633 | 8.5 | 230 | 450 | mg/kg OC | 0.04 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Benzo(k)fluoranthene | 0.044 | 0.747 | 5.9 | 230 | 450 | mg/kg OC | 0.03 | 0.01 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Benzo(k)fluoranthene | 0.048 | 1.56 | 3.1 | 230 | 450 | mg/kg OC | 0.01 | 0.007 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Benzofluoranthenes (total-calc'd) | 0.56 | 1.02 | 55 | 230 | 450 | mg/kg OC | 0.2 | 0.1 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Benzofluoranthenes (total-calc'd) | 0.10 J | 0.633 | 16 | 230 | 450 | mg/kg OC | 0.07 | 0.04 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Benzofluoranthenes (total-calc'd) | 0.085 | 0.747 | 11 | 230 | 450 | mg/kg OC | 0.05 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Benzofluoranthenes (total-calc'd) | 0.10 | 1.56 | 6.6 | 230 | 450 | mg/kg OC | 0.03 | 0.01 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Bis(2-ethylhexyl)phthalate | 0.048 | 0.747 | 6.4 | 47 | 78 | mg/kg OC | 0.1 | 0.08 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Bis(2-ethylhexyl)phthalate | 0.045 J | 1.02 | 4.4 | 47 | 78 | mg/kg OC | 0.09 | 0.06 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Butyl benzyl phthalate | 0.010 | 0.747 | 1.3 | 4.9 | 64 | mg/kg OC | 0.3 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Butyl benzyl phthalate | 0.011 | 1.02 | 1.1 | 4.9 | 64 | mg/kg OC | 0.2 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Cadmium | 0.60 | 1.56 | | 5.1 | 6.7 | mg/kg DW | 0.1 | 0.09 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | Chromium | 12 | 0.211 | | 260 | 270 | mg/kg DW | 0.05 | 0.04 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Chromium | 14 | 0.747 | | 260 | 270 | mg/kg DW | 0.06 | 0.05 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Chromium | 16 | 0.633 | | 260 | 270 | mg/kg DW | 0.06 | 0.06 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Chromium | 17 | 0.328 | | 260 | 270 | mg/kg DW | 0.07 | 0.06 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Chromium | 18 | 1.02 | | 260 | 270 | mg/kg DW | 0.07 | 0.07 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Chromium | 27 | 1.56 | | 260 | 270 | mg/kg DW | 0.1 | 0.1 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Chrysene | 0.43 | 1.02 | 42 | 110 | 460 | mg/kg OC | 0.4 | 0.09 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Chrysene | 0.085 | 0.747 | 11 | 110 | 460 | mg/kg OC | 0.1 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Chrysene | 0.046 J | 0.633 | 7.3 | 110 | 460 | mg/kg OC | 0.07 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Chrysene | 0.044 | 1.56 | 2.8 | 110 | 460 | mg/kg OC | 0.03 | 0.006 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Cobalt | 5.5 | 1.02 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Cobalt | 6.0 | 0.633 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Cobalt | 7.2 | 1.56 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Cobalt | 4.3 | 0.747 | | | | mg/kg DW | | |

**Table A-2**
**Chemicals Detected in Subsurface Sediment Samples**
**EAA2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Sample Depth (feet) | Chemical | Conc'n (mg/kg DW) | TOC % | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Cobalt | 4.6 | 0.328 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | Cobalt | 3.7 | 0.211 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | Copper | 8.3 | 0.211 | | 390 | 390 | mg/kg DW | 0.02 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Copper | 14 | 0.328 | | 390 | 390 | mg/kg DW | 0.04 | 0.04 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Copper | 21 | 0.747 | | 390 | 390 | mg/kg DW | 0.05 | 0.05 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Copper | 27 | 1.02 | | 390 | 390 | mg/kg DW | 0.07 | 0.07 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Copper | 29 | 0.633 | | 390 | 390 | mg/kg DW | 0.07 | 0.07 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Copper | 35 | 1.56 | | 390 | 390 | mg/kg DW | 0.09 | 0.09 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Dibutyltin as ion | 0.0064 | 1.02 | | | | | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | 1.31E-05 J | 2.0 | 0.000655 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | 1.22E-05 J | 2.0 | 0.00061 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | 7.8E-06 J | 2.0 | 0.00039 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | 6.55E-06 J | 2.0 | 0.000328 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | 4.87E-07 J | 2.0 | 2.44E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | Dioxin/furan TEQ - Mammal WHO 1998 - Half DL | 3.6E-07 J | 2.0 | 0.000018 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | 1.31E-05 J | 2.0 | 0.000655 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | 1.24E-05 J | 2.0 | 0.00062 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | 7.91E-06 J | 2.0 | 0.00040 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | 6.71E-06 J | 2.0 | 0.000336 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | 4.85E-07 J | 2.0 | 2.43E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | Dioxin/furan TEQ - Mammal WHO 2005 - Half DL | 3.55E-07 J | 2.0 | 1.78E-05 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Fluoranthene | 1.6 | 1.02 | 157 | 160 | 1200 | mg/kg OC | 1.0 | 0.13 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Fluoranthene | 0.32 | 0.747 | 43 | 160 | 1200 | mg/kg OC | 0.3 | 0.04 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Fluoranthene | 0.11 | 0.633 | 17 | 160 | 1200 | mg/kg OC | 0.1 | 0.01 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Fluoranthene | 0.10 | 1.56 | 6.4 | 160 | 1200 | mg/kg OC | 0.04 | 0.005 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Indeno(1,2,3-cd)pyrene | 0.056 J | 1.02 | 5.5 | 34 | 88 | mg/kg OC | 0.2 | 0.06 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Indeno(1,2,3-cd)pyrene | 0.020 | 0.747 | 2.7 | 34 | 88 | mg/kg OC | 0.08 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Lead | 18 | 0.747 | | 450 | 530 | mg/kg DW | 0.04 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Lead | 23 | 1.02 | | 450 | 530 | mg/kg DW | 0.05 | 0.04 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Lead | 35 | 0.633 | | 450 | 530 | mg/kg DW | 0.08 | 0.07 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Lead | 44 | 0.328 | | 450 | 530 | mg/kg DW | 0.1 | 0.08 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Lead | 48 | 1.56 | | 450 | 530 | mg/kg DW | 0.1 | 0.09 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Mercury | 0.05 | 0.747 | | 0.41 | 0.59 | mg/kg DW | 0.1 | 0.08 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Mercury | 0.06 | 0.633 | | 0.41 | 0.59 | mg/kg DW | 0.1 | 0.1 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Mercury | 0.22 | 1.02 | | 0.41 | 0.59 | mg/kg DW | 0.5 | 0.4 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Mercury | 0.24 | 1.56 | | 0.41 | 0.59 | mg/kg DW | 0.6 | 0.4 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Molybdenum | 1.0 | 0.747 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Molybdenum | 0.90 | 0.328 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Nickel | 15 | 1.02 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Nickel | 15 | 0.633 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Nickel | 17 | 1.56 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Nickel | 10 | 0.747 | | | | mg/kg DW | | |

**Table A-2**
**Chemicals Detected in Subsurface Sediment Samples**
**EAA2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Sample Depth (feet) | Chemical | Conc'n (mg/kg DW) | TOC % | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Nickel | 15 | 0.328 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | Nickel | 8.0 | 0.211 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | OCDD | 0.0022 | 0.633 | 0.34 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | OCDD | 0.0018 | 0.747 | 0.24 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | OCDD | 0.0015 | 1.02 | 0.15 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | OCDD | 0.0023 | 1.56 | 0.15 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | OCDD | 0.0001 | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | OCDD | 2.92E-06 | 0.211 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | OCDF | 0.0001 | 0.633 | 0.016 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | OCDF | 1.0E-04 | 0.747 | 0.013 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | OCDF | 0.0002 | 1.56 | 0.010 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | OCDF | 8.33E-05 | 1.02 | 0.0082 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | OCDF | 3.51E-06 | 0.328 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | OCDF | 8.75E-08 J | 0.211 | NA | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | PCBs (total calc'd) | 0.44 | 0.633 | 70 | 12 | 65 | mg/kg OC | 5.8 | 1.1 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | PCBs (total calc'd) | 0.16 J | 0.747 | 21 | 12 | 65 | mg/kg OC | 1.8 | 0.3 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | PCBs (total calc'd) | 0.21 | 1.02 | 20 | 12 | 65 | mg/kg OC | 1.7 | 0.3 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | PCBs (total calc'd) | 0.22 | 1.56 | 14 | 12 | 65 | mg/kg OC | 1.2 | 0.2 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41943) | 4 - 6 | PCBs (total calc'd) | 0.15 | 2.5 | 6.0 | 12 | 65 | mg/kg OC | 0.5 | 0.09 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Phenanthrene | 0.13 | 0.747 | 17 | 100 | 480 | mg/kg OC | 0.2 | 0.04 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Phenanthrene | 0.14 | 1.02 | 14 | 100 | 480 | mg/kg OC | 0.1 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Phenanthrene | 0.072 | 0.633 | 11 | 100 | 480 | mg/kg OC | 0.1 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Phenanthrene | 0.034 J | 1.56 | 2.2 | 100 | 480 | mg/kg OC | 0.02 | 0.005 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Pyrene | 0.8 | 1.02 | 78 | 1000 | 1400 | mg/kg OC | 0.08 | 0.06 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Pyrene | 0.24 | 0.747 | 32 | 1000 | 1400 | mg/kg OC | 0.03 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Pyrene | 0.12 | 0.633 | 19 | 1000 | 1400 | mg/kg OC | 0.02 | 0.01 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Pyrene | 0.11 | 1.56 | 7.1 | 1000 | 1400 | mg/kg OC | 0.007 | 0.005 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Total HPAH (calc'd) | 3.9 J | 1.02 | 382 | 960 | 5300 | mg/kg OC | 0.4 | 0.07 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Total HPAH (calc'd) | 0.85 J | 0.747 | 114 | 960 | 5300 | mg/kg OC | 0.1 | 0.02 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Total HPAH (calc'd) | 0.47 J | 0.633 | 74 | 960 | 5300 | mg/kg OC | 0.08 | 0.01 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Total HPAH (calc'd) | 0.43 J | 1.56 | 28 | 960 | 5300 | mg/kg OC | 0.03 | 0.005 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Total LPAH (calc'd) | 0.16 | 0.747 | 21 | 370 | 780 | mg/kg OC | 0.06 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Total LPAH (calc'd) | 0.2 J | 1.02 | 20 | 370 | 780 | mg/kg OC | 0.05 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Total LPAH (calc'd) | 0.072 | 0.633 | 11 | 370 | 780 | mg/kg OC | 0.03 | 0.01 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Total LPAH (calc'd) | 0.055 J | 1.56 | 3.5 | 370 | 780 | mg/kg OC | 0.01 | 0.005 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Total PAH (calc'd) | 4.1 J | 1.02 | 402 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Total PAH (calc'd) | 1.0 J | 0.747 | 135 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Total PAH (calc'd) | 0.54 J | 0.633 | 85 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Total PAH (calc'd) | 0.49 J | 1.56 | 31 | | | mg/kg OC | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Tributyltin as ion | 0.013 | 1.02 | | | | | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Vanadium | 45 | 1.02 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Vanadium | 51 | 0.633 | | | | mg/kg DW | | |

**Table A-2**
**Chemicals Detected in Subsurface Sediment Samples**
**EAA2: LDW Near Douglas Management Company**

| Sampling Event | Sample Location | Sample Depth (feet) | Chemical | Conc'n (mg/kg DW) | TOC % | Conc'n (mg/kg OC) | SQS | CSL | Units | SQS Exceedance Factor | CSL Exceedance Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Vanadium | 59 | 1.56 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Vanadium | 46 | 0.747 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Vanadium | 46 | 0.328 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | Vanadium | 43 | 0.211 | | | | mg/kg DW | | |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41949) | 2 - 4 | Zinc | 25 | 0.211 | | 410 | 960 | mg/kg DW | 0.06 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41948) | 1.3 - 2 | Zinc | 27 | 0.328 | | 410 | 960 | mg/kg DW | 0.07 | 0.03 |
| LDW RI Phase 2 Subsurface | LDW-SC40 (41946) | 0 - 1.3 | Zinc | 47 | 0.747 | | 410 | 960 | mg/kg DW | 0.1 | 0.05 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41941) | 1 - 2 | Zinc | 59 | 0.633 | | 410 | 960 | mg/kg DW | 0.1 | 0.06 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41940) | 0 - 1 | Zinc | 77 | 1.02 | | 410 | 960 | mg/kg DW | 0.2 | 0.08 |
| LDW RI Phase 2 Subsurface | LDW-SC39 (41942) | 2 - 4 | Zinc | 78 | 1.56 | | 410 | 960 | mg/kg DW | 0.2 | 0.08 |

DW - Dry weight
TOC - Total organic carbon
OC - Organic carbon normalized
SQS - Sediment Quality Standard
CSL - Cleanup Screening Level
PAH - Polynuclear aromatic hydrocarbons
PCB - polychlorinated biphenyl
Notes:
(1) Exceedance factors are the ratio of the detected concentrations to the CSL or SQS; exceedance factors are shown only if they are greater than 1.
(2) Chemicals with exceedance factors greater than 1 are highlighted gray.
(3) Organic carbon normalization is not considered to be appropriate for TOC concentrations less than or equal to 0.5%.

# Appendix B

# Douglas Management Company
# Historical Data

# B1. Soil and Groundwater Assessment (Dames & Moore 1991d)

## TABLE 2
## SUMMARY OF WELL CONSTRUCTION DETAILS
## 7100 Second Avenue
## Alaska Marine Lines

| WELL NO. | INSTALL DATE | BOREHOLE DIAMETER (inches) | WELL CASING DIAMETER (inches) | CASING TOTAL DEPTH (feet) | TOP OF SCREEN (feet) | TOP OF SAND PACK (feet) | TOP OF SEAL (feet) | SLOT SIZE (inches) | MONUMENT TYPE |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 10/25/90 | 12 | 4 | 20 | 10 | 8 | 4.5 | 0.01 | Flush-Cast Aluminum |
| MW-2 | 10/25/90 | 12 | 4 | 20 | 10 | 8 | 3 | 0.01 | Flush-Cast Aluminum |
| MW-3 | 10/25/90 | 12 | 4 | 20 | 10 | 8 | 3 | 0.01 | Flush-Cast Aluminum |
| MW-4 | 10/26/90 | 12 | 4 | 20 | 10 | 8 | 3 | 0.01 | Flush-Cast Aluminum |
| MW-5 | 12/06/90 | 6 | 2 | 3.8 | 1.8 | 6.5 | 2 | 0.01 | Flush-Cast Iron |
| MW-6 | 12/07/90 | 6 | 2 | 19 | 9 | 6 | 2 | 0.01 | Flush-Cast Iron |
| MW-7 | 12/07/90 | 6 | 2 | 19 | 9 | 6 | 2 | 0.01 | Flush-Cast Iron |
| SG-1 | 10/26/90 | 6 | 2 | 11.5 | 5 | 3 | 1.5 | 0.01 | Flush-Cast Iron |

AML:\R3-T2.XLS

# TABLE 3
## SUMMARY OF WATER LEVEL DATA
## 7100 Second Avenue
## Alaska Marine Lines

| WELL NO | REFERENCE ELEVATION | NOVEMBER 1, 1991 | | JANUARY 15, 1991 | | JANUARY 25, 1991 | |
|---|---|---|---|---|---|---|---|
| | | DEPTH TO WATER | WATER LEVEL ELEV. | DEPTH TO WATER | WATER LEVEL ELEV. | DEPTH TO WATER | WATER LEVEL ELEV. |
| MW-1 | 99.84 | 11.97 | 87.87 | 11.14 | 88.70 | 11.53 | 88.31 |
| MW-2 | 99.52 | 11.34 | 88.18 | 10.44 | 89.08 | 11.12 | 88.40 |
| MW-3 | 99.71 | 11.82 | 87.89 | 10.96 | 88.75 | 11.28 | 88.43 |
| MW-4 | 99.42 | 10.97 | 88.45 | 10.11 | 89.31 | 10.20 | 89.22 |
| MW-5 | 98.32 | - | - | 8.75 | 89.57 | 9.21 | 89.11 |
| MW-6 | 98.43 | - | - | 8.77 | 89.66 | 9.38 | 89.05 |
| MW-7 | 99.48 | - | - | 8.98 | 90.50 | 9.00 | 90.48 |
| PIER | 101.37 | - | - | 13.43 | 87.94 | 12.12 | 89.25 |

AML/R3-T3.XLS

# TABLE 4
## SUMMARY OF SOIL ANALYTICAL DATA
## 7100 Second Avenue
## Alaska Marine Lines

| | | | FUEL CONSTITUENTS | | | | | POLYCYCLIC AROMATIC HYDROCARBONS | | | VOLATILE ORGANIC COMPOUNDS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BORE-HOLE NO. | SAMPLE DEPTH | SAMPLE DATE | TPH (mg/kg) | BENZENE (ug/kg) | TOLUENE (ug/kg) | ETHYL-BENZENE (ug/kg) | XYLENES (ug/kg) | *FLUOR-ANTHENE (ug/kg) | PHEN-ANTHRENE (ug/kg) | PYRENE (ug/kg) | ACETONE (ug/kg) | METHYLENE CHLORIDE (ug/kg) |
| SB-1 | 3.0-3.5 | 10/25/90 | 12 | <5.0 | <5.0 | <5.0 | <5.0 | -- | -- | -- | -- | -- |
| SB-1 | 11.0-11.5 | 10/25/90 | 73 | <5.0 | <5.0 | <5.0 | <5.0 | -- | -- | -- | -- | -- |
| SB-2 | 3.0-3.5 | 10/25/90 | 57 | <5.0 | <5.0 | <5.0 | <5.0 | -- | -- | -- | -- | -- |
| SB-2 | 8.0-8.5 | 10/25/90 | 350 | <5.0 | <5.0 | <5.0 | <5.0 | -- | -- | -- | -- | -- |
| SB-3 | 3.0-3.5 | 10/25/90 | 99 | <5.0 | <5.0 | <5.0 | <5.0 | -- | -- | -- | -- | -- |
| SB-3 | 11.0-11.5 | 10/25/90 | 31 | <5.0 | <5.0 | <5.0 | <5.0 | -- | -- | -- | -- | -- |
| SB-4 | 8.0-8.5 | 12/13/90 | 130 | -- | -- | -- | -- | <40 | <40 | <40 | 220 | 110 |
| SB-4 | 13.0-13.5 | 12/13/90 | 207 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-4 | 18.0-18.5 | 12/13/90 | 460 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-4 | 23.0-23.5 | 12/13/90 | 240 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-4 | 28.0-28.5 | 12/13/90 | 450 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-4 | 33.0-33.5 | 12/13/90 | 55 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-5 | 13.0-13.5 | 12/13/90 | 210 | -- | -- | -- | -- | 56 | 67 | 70 | 94 | 54 |
| SB-5 | 18.0-18.5 | 12/13/90 | 3600 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-5 | 23.0-23.5 | 12/13/90 | 110 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-5 | 28.0-28.5 | 12/13/90 | 340 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-5 | 33.0-33.5 | 12/13/90 | 59 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SG-1 | 3.0-3.5 | 10/25/90 | 2800 | 97 | 13 | <5.0 | 18 | -- | -- | -- | -- | -- |
| SG-1 | 11.0-11.5 | 10/25/90 | 18 | 10 | <5.0 | <5.0 | <5.0 | -- | -- | -- | -- | -- |
| MW-1 | 3.0-3.5 | 10/26/90 | 720 | <2.0 | <2.0 | <2.0 | <2.0 | -- | -- | -- | -- | -- |
| MW-1 | 8.0-8.5 | 10/26/90 | 480 | <2.0 | <2.0 | <2.0 | <2.0 | -- | -- | -- | -- | -- |
| MW-1 | 13.0-13.5 | 10/26/90 | 820 | <2.0 | <2.0 | <2.0 | <2.0 | -- | -- | -- | -- | -- |
| MW-2 | 3.0-3.5 | 10/26/90 | 25 | <2.0 | <2.0 | <2.0 | <2.0 | -- | -- | -- | -- | -- |
| MW-2 | 13.0-13.5 | 10/26/90 | 110 | 50 | <2.0 | <2.0 | <2.0 | -- | -- | -- | -- | -- |
| MW-2 | 18.0-18.5 | 10/26/90 | 350 | <2.0 | <2.0 | <2.0 | <2.0 | -- | -- | -- | -- | -- |
| MW-3 | 3.0-3.5 | 10/26/90 | 550 | 15 | 2.3 | <2.0 | <2.0 | -- | -- | -- | -- | -- |
| MW-3 | 13.0-13.5 | 10/26/90 | 380 | 28 | <2.0 | <2.0 | <2.0 | -- | -- | -- | -- | -- |
| MW-3 | 18.0-18.5 | 10/26/90 | 540 | <2.0 | <2.0 | <2.0 | <2.0 | -- | -- | -- | -- | -- |
| MW-4 | 3.0-3.5 | 10/25/90 | 360 | <5.0 | <5.0 | <5.0 | <5.0 | -- | -- | -- | -- | -- |
| MTCA | | | 200 | 500 | 40,000 | 20,000 | 20,000 | ** | ** | ** | NE | 500 |

AML:\R3-T4.XLS

-- = Not analyzed
* = Carcinogenic PAH compound.
** = MTCA criteria is 20,000 ug/kg for the sum of all carcinogenic PAHs.
MTCA = Model Toxics Control Act Cleanup Regulation, effective February 28, 1991.

Only those compounds that were detected in one or more samples are reported.

# TABLE 5
## SUMMARY OF GROUND-WATER ANALYTICAL DATA
## 7100 Second Avenue
## Alaska Marine Lines

| | | WELL NO: | MW-1 | MW-2 | MW-3 | | MW-4 | | MW-5 | MW-6 | MW-7 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SAMPLE DATE: | 11/1/90 | 11/1/90 | 11/1/90 | 12/18/90 | 11/1/90 | 12/18/90 | 12/18/90 | 12/18/90 | 12/18/90 |
| ANALYSIS | UNITS | MTCA [1] | | | | | | | | | |
| TPH | mg/L | 1 | 0.59 | 0.56 | 0.33 | -- | 0.27 | -- | -- | -- | -- |
| BENZENE | ug/L | 5 | <1.0 | <1.0 | <1.0 | **420** | **4200** | **3600** | <5.0 | <5.0 | <5.0 |
| TOLUENE | ug/L | 40 | <1.0 | <1.0 | <1.0 | 3.5 | 8.3 | <50 | <5.0 | <5.0 | <5.0 |
| ETHYLBENZENE | ug/L | 30 | <1.0 | <1.0 | 1.1 | 13 | 2.1 | <50 | <5.0 | <5.0 | <5.0 |
| XYLENES | ug/L | 20 | <1.0 | <1.0 | 5.3 | **48.4** | 4.2 | **63** | <5.0 | <5.0 | <5.0 |

AML/R3-T5.XLS

MTCA = The Model Toxics Control Act Cleanup Regulation, effective February 28, 1991.
-- = Sample not analyzed.
< = This parameter was not detected at a concentration above the detection level indicated in the table.

# TABLE 6
# SUMMARY OF GROUND-WATER
# QA/QC ANALYTICAL DATA
# 7100 Second Avenue
# Alaska Marine Lines

| DUPLICATE WELL SAMPLES | SAMPLING DATE | WELL NO | ANALYSIS (ug/L) | SAMPLE VALUES | DUPLICATE VALUES |
|---|---|---|---|---|---|
| | 11-1-90 | MW-4 | Benzene | 4200 | 3700 |
| | | | Toluene | 8.3 | 6.9 |
| | | | Ethylbenzene | 2.1 | 1.4 |
| | | | Xylenes | 4.2 | 5.9 |
| | 12-18-90 | MW-4 | Benzene | 4100 | 3600 |
| | | | Toluene | <50 | <50 |
| | | | Ethylbenzene | <50 | <50 |
| | | | Xylenes | 64 | 63 |

| RINSATE SAMPLES | SAMPLING DATE | WELL NO | ANALYSIS (ug/L) | SAMPLE VALUES | DUPLICATE VALUES |
|---|---|---|---|---|---|
| | 11-1-90 | N/A | Benzene | <1.0 | N/A |
| | | | Toluene | <1.0 | N/A |
| | | | Ethylbenzene | <1.0 | N/A |
| | | | Xylenes | <1.0 | N/A |
| | 12-18-90 | N/A | Benzene | <1.0 | N/A |
| | | | Toluene | <1.0 | N/A |
| | | | Ethylbenzene | 1.4 | N/A |
| | | | Xylenes | <1.0 | N/A |

AML:R3-T6.XLS

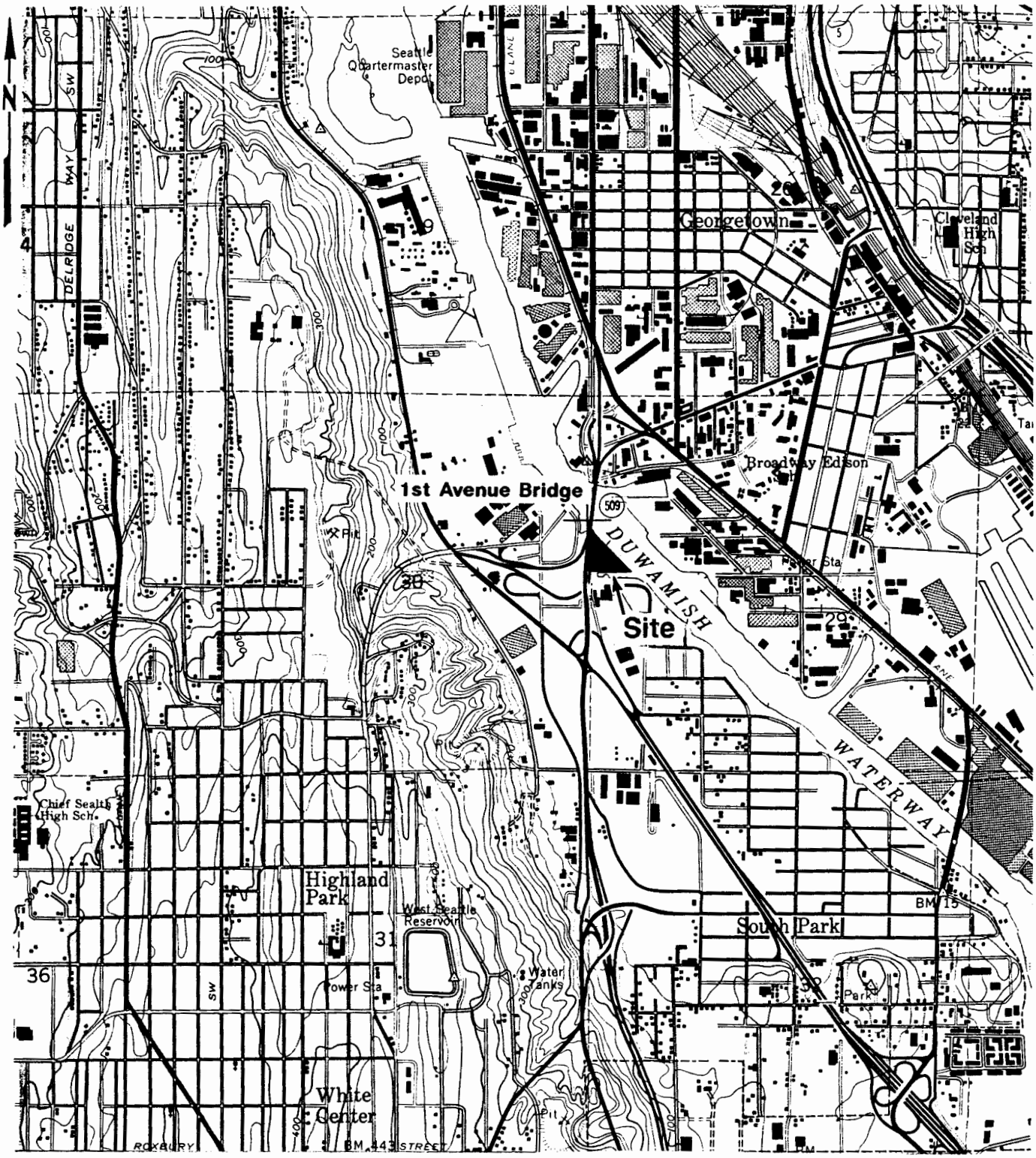
N/A - Not applicable.

# TABLE 7
## TPH CONCENTRATIONS IN SOIL versus DEPTH
## 7100 Second Avenue
## Alaska Marine Lines

| BOREHOLE NO: | SB-1 | SB-2 | SB-3 | SB-4 | SB-5 | SG-1 | MW-1 | MW-2 | MW-3 | MW-4 |
|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLE DATE: | 10/26/90 | 10/26/90 | 10/26/90 | 12/13/90 | 12/13/90 | 10/26/90 | 10/25/90 | 10/25/90 | 10/25/90 | 10/26/90 |
| SAMPLE DEPTH: 3.0-3.5 | 12 | 57 | 99 | * | * | 2800 | 720 | 25 | 550 | 360 |
| 8.0-8.5 | * | 350 | * | 130 | * | * | 480 | * | * | * |
| 11.0-11.5 | 73 | * | 31 | * | * | 18 | * | * | * | * |
| 13.0-13.5 | | | | 207 | 210 | * | 820 | 110 | 380 | * |
| 18.0-18.5 | | | | 460 | 3600 | * | * | 350 | 540 | * |
| 23.0-23.5 | | | | 240 | 110 | | | | | |
| 28.0-28.5 | | | | 450 | 340 | | | | | |
| 33.0-33.5 | | | | 55 | 59 | | | | | |

AML:R3-T7.XLS

* = Not analyzed.




0 2000 4000

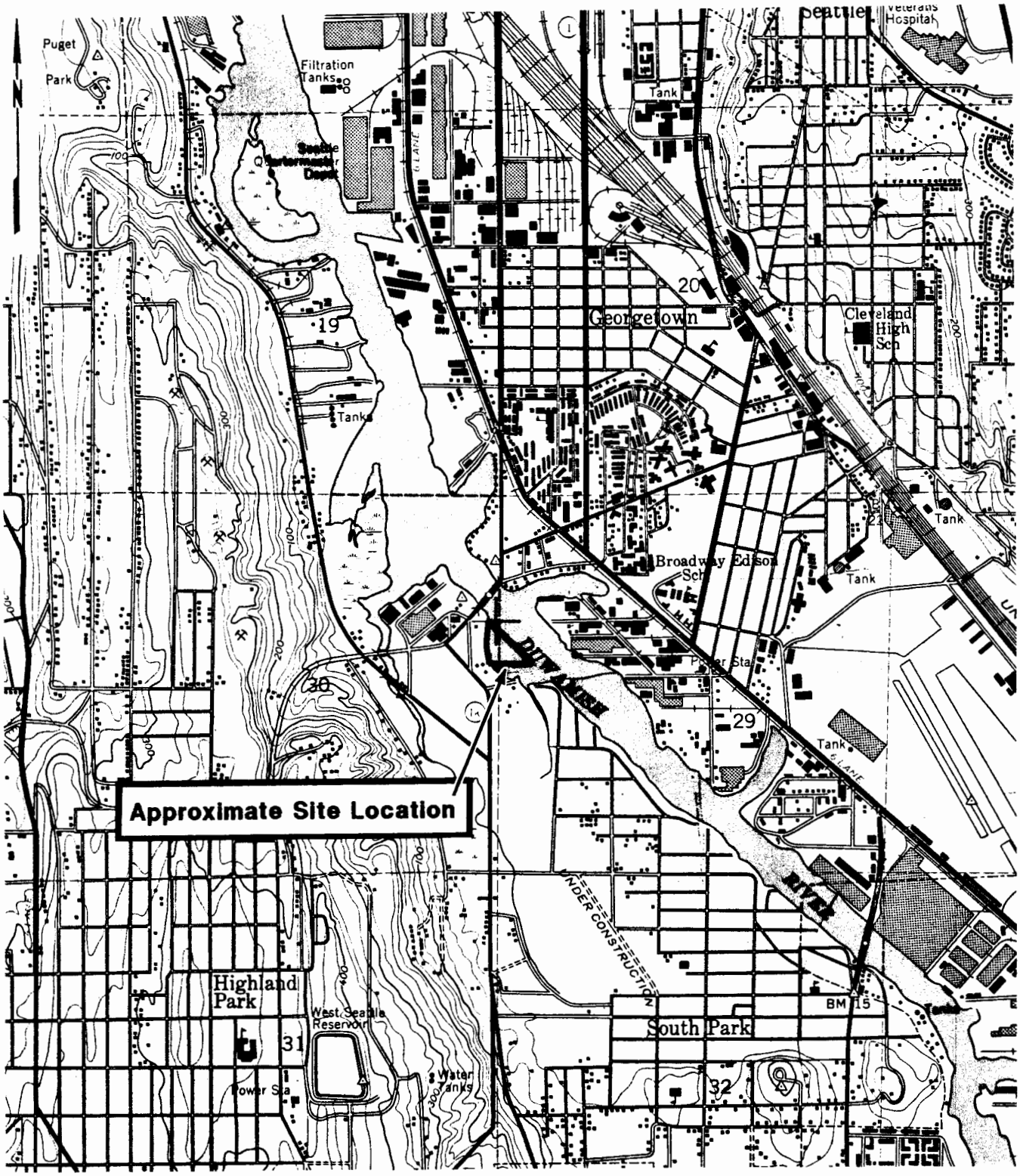
Scale in Feet

*Source: USGS Topographic Map Seattle South Quadrangle, 1949, Photorevised 1968 and 1973.*

**Figure 1**

**Site Location Map**
**Alaska Marine Lines**
**Seattle, Washington**
**Dames & Moore**

Job No. 21048-001-005




0 2000 4000

Scale in Feet

*Source: USGS Topographic Map, 7.5 Minute Quadrangle, Seattle South, 1949.*

**Figure 2**

**1949 Site Location Map**
**Alaska Marine Lines**
**7100 2nd Avenue**
**Seattle, WA**
**Dames & Moore**

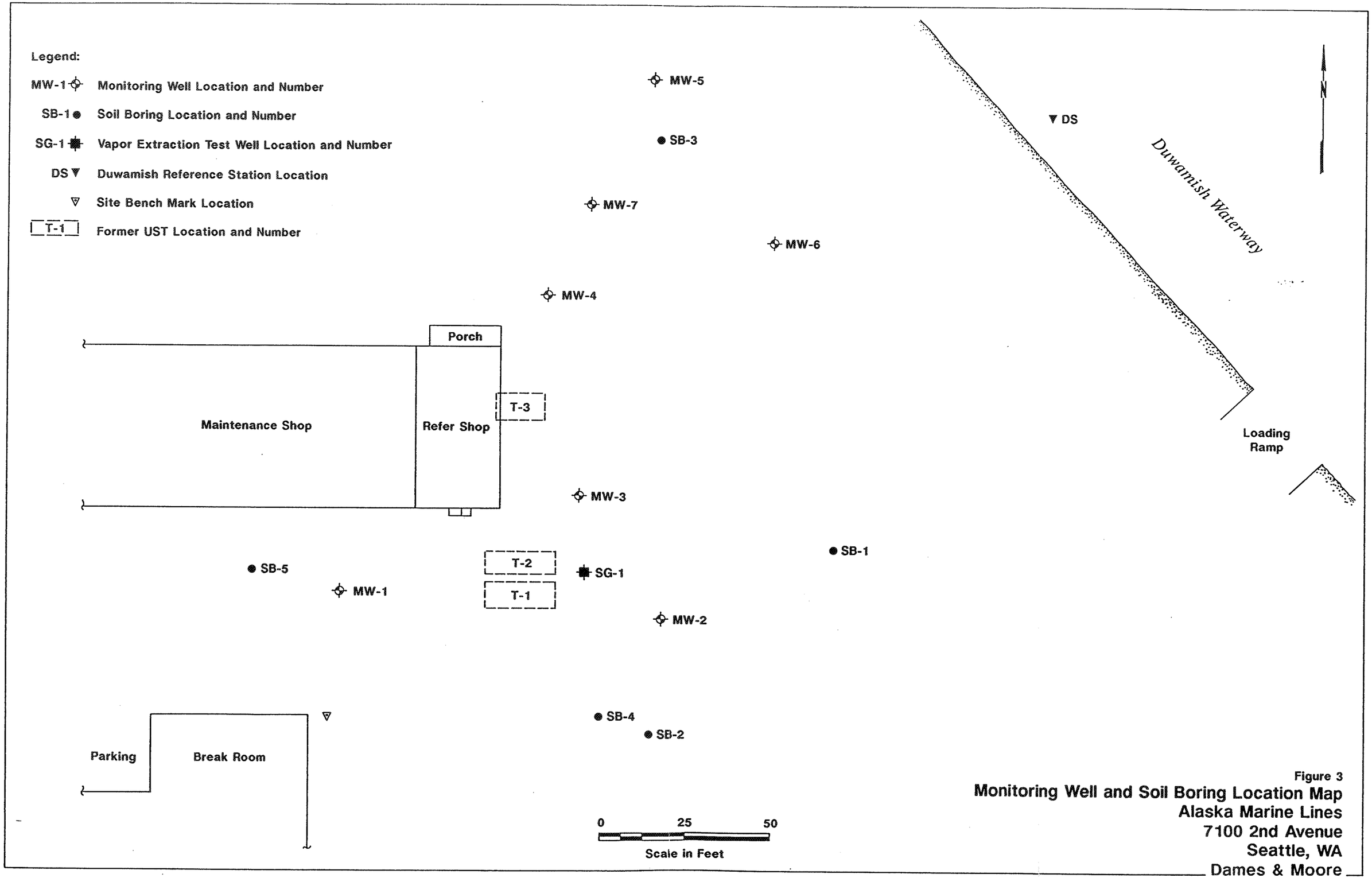



Figure 3
Monitoring Well and Soil Boring Location Map
Alaska Marine Lines
7100 2nd Avenue
Seattle, WA
Dames & Moore

Job No. 21048-001-005

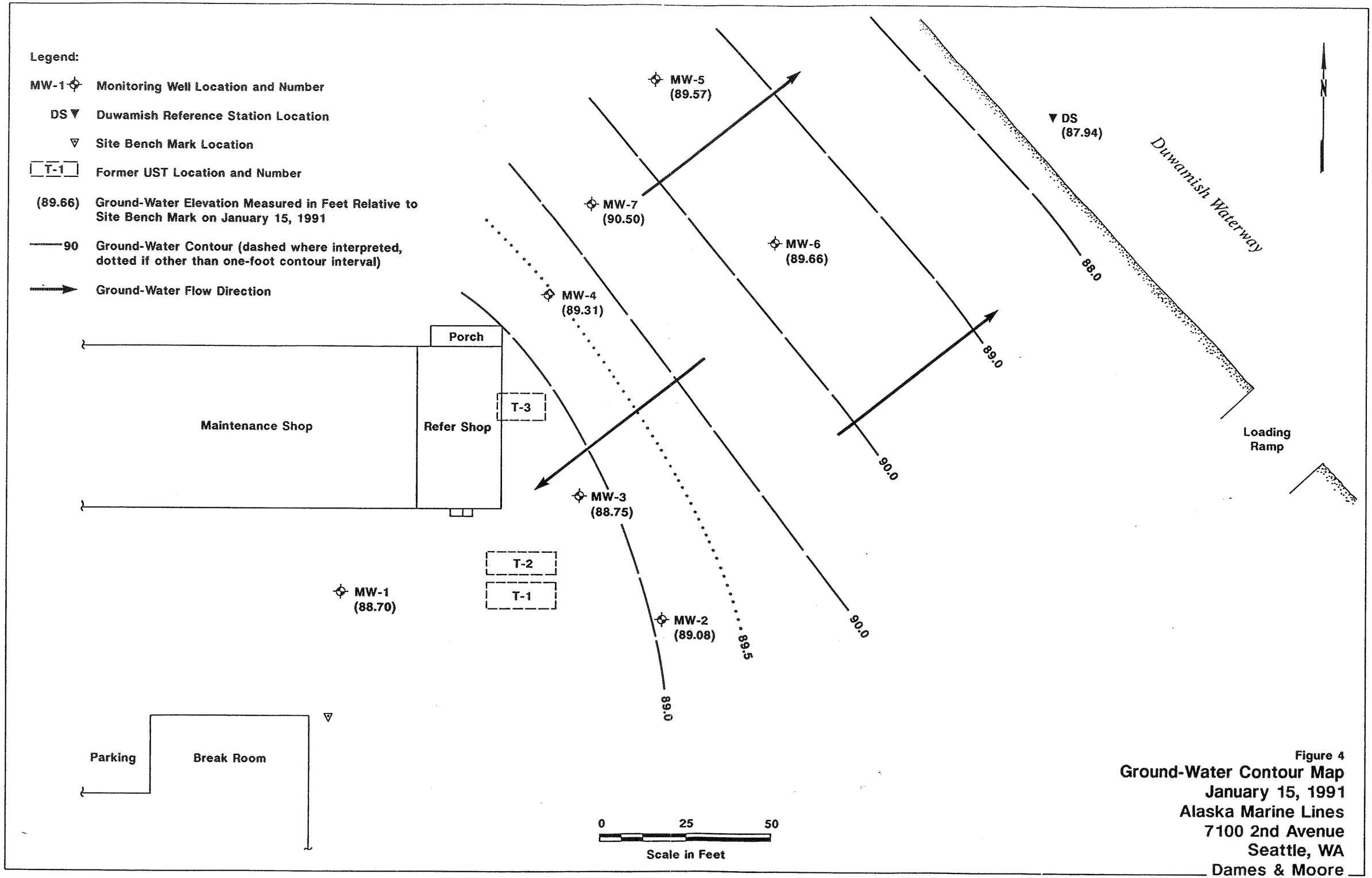



Figure 4
Ground-Water Contour Map
January 15, 1991
Alaska Marine Lines
7100 2nd Avenue
Seattle, WA
Dames & Moore

Job No. 21048-001-005

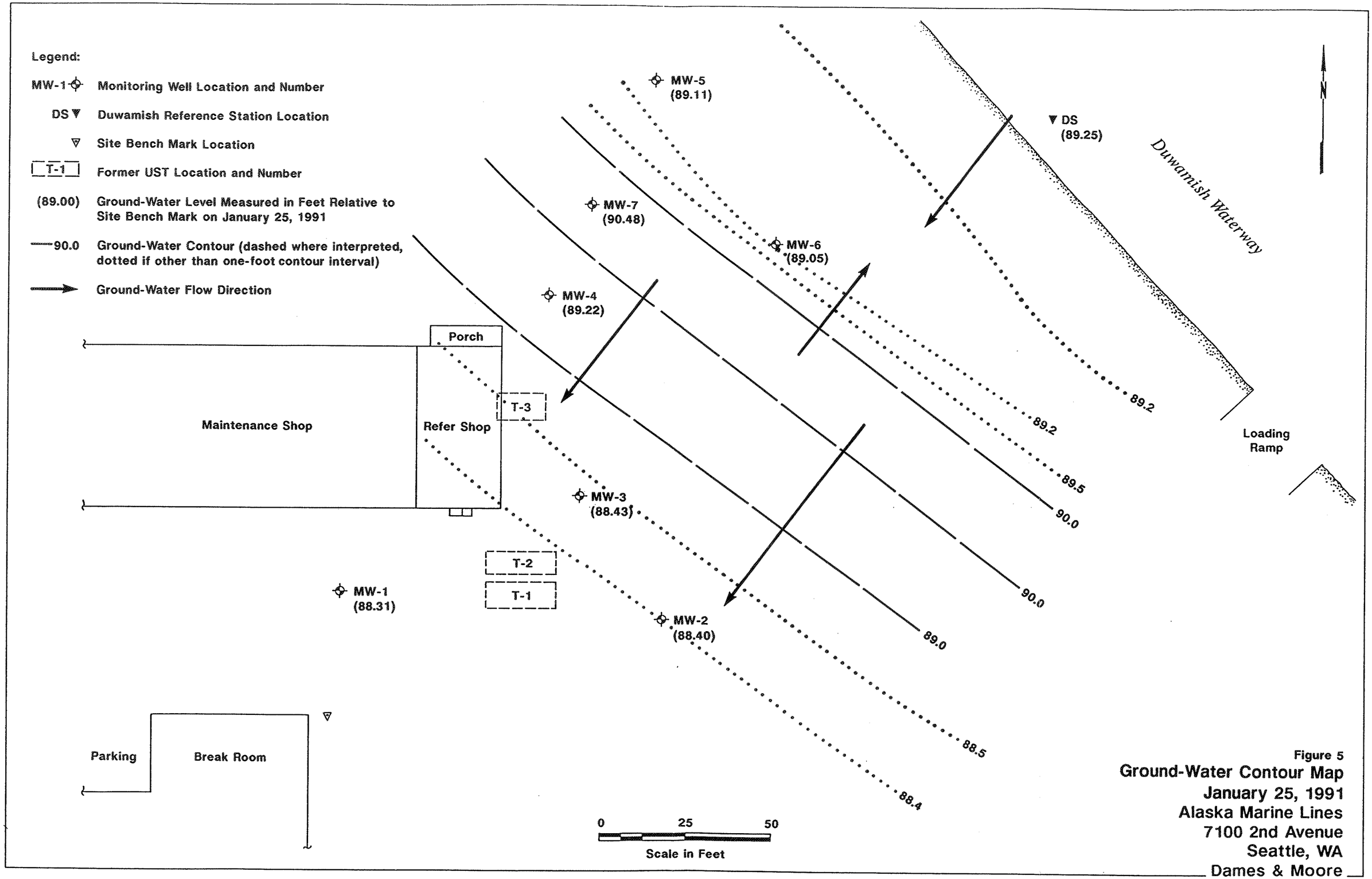



Figure 5
Ground-Water Contour Map
January 25, 1991
Alaska Marine Lines
7100 2nd Avenue
Seattle, WA
Dames & Moore

Job No. 21048-001-005

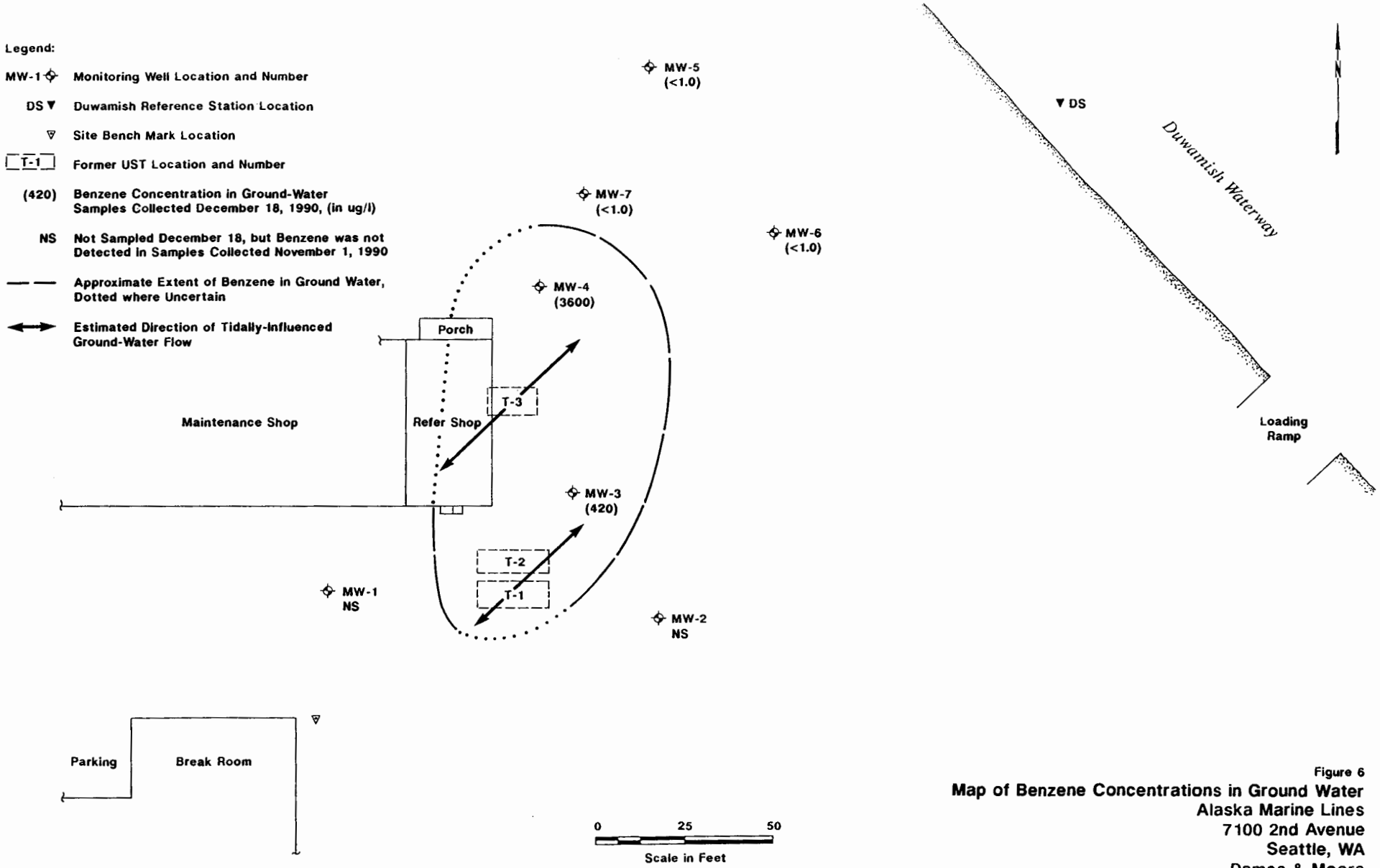



Figure 6
**Map of Benzene Concentrations in Ground Water**
Alaska Marine Lines
7100 2nd Avenue
Seattle, WA
Dames & Moore

Job No. 21048-001-005

# Geological Boring Log

## SB - 1

| Depth In Feet | Blows / 6" | Sample Type | Lithology | USCS | Description |
|---|---|---|---|---|---|
| 0 | | | | | Asphalt - Concrete (1.0) |
| | 4 6 7 | | | sp | Loose, dark grey to black, medium to coarse SAND with some gravel to ½ inch in diameter; damp, slight odor, sheen on cuttings. (4.5) |
| 5 | 3 6 6 | | | sm | Loose, black, silty, fine to medium SAND to sandy SILT with some pebbles to ½ inch in diameter; wet, slight odor. (10.5) |
| | 2 5 7 | | | | |
| 10 | 2 3 4 | | | cl | Medium stiff, black, silty CLAY with wood fragments and small pebbles; damp, no odor. |
| 15 | | | | | Boring terminated at 12.0 feet on 10/26/90. |
| 20 | | | | | |

## SB - 2

| Depth In Feet | Blows / 6" | Sample Type | Lithology | USCS | Description |
|---|---|---|---|---|---|
| 0 | | | | | Asphalt - Concrete (1.0) |
| | 4 4 5 | | | sp | Loose, black, medium to coarse SAND with some pebbles to ½ inch in diameter; damp, no odor. (5.5) |
| 5 | 2 4 4 | | | sm | Loose, silty SAND with some pebbles to ½ inch in diameter; damp, no odor. (7.5) |
| | 1 3 4 | | | cl | Medium stiff, dark grey to black, silty sandy CLAY with wood fragments; damp, no odor. (11.0) |
| 10 | 4 6 4 | | | sp | Alternating layers of light brown, fine SAND and dark grey to black, medium to coarse SAND; dry to damp, no odor. Boring terminated at 12.0 feet on 10/26/90. |
| 15 | | | | | |
| 20 | | | | | |

**Notes:**

| | | | |
|---|---|---|---|
| Client Name: | Alaska Marine Lines | Drilling Co.: | GeoBoring & Development, Inc. |
| Project Name: | 7100 2ND Ave. | Drilling Method: | Hollow-Stem Auger |
| Logged By: | MAC | | |

# Geological Boring Log

## SB - 3

| Depth in Feet | Blows / 6" | Sample Type | Lithology | USCS | |
|---|---|---|---|---|---|
| 0 | | | | | Asphalt — 0.75' |
| | 5 9 9 | | | sp | Medium dense, black, fine to medium SAND with some gravel up to 1 inch in diameter; damp, slight odor. |
| 5 | | | | | |
| | 3 3 2 | | | | Strong odor. — 8.0' |
| | | | | sm | Very loose, dark grey to black, sandy SILT and silty SAND with gravel to ½ inch in diameter; moist, no odor. |
| 10 | 2 6 5 | | | | Boring terminated at 12.0 feet on 10/26/90. |
| 15 | | | | | |
| 20 | | | | | |

**Notes:**

Client Name: Alaska Marine Lines
Project Name: 7100 2ND Ave.
Logged By: MAC

Drilling Co.: GeoBoring & Development, Inc.
Drilling Method: Hollow-Stem Auger

# Geological Boring Log

## SB - 4

| Depth in Feet | Blows / 6" | Sample Type | Lithology | USCS | Description |
|---|---|---|---|---|---|
| 0 | | | | | Asphalt - Concrete. 1.0 |
| | | | | | Medium dense, black, fine SAND with trace silt and wood fragments; moist, no odor. |
| | 11 18 20 | | | | |
| 5 | | | | sp | |
| | 6 8 12 | | | | Sheen on cuttings. |
| 10 | | | | | 10.5 |
| | | | | | Loose, black, silty SAND with wood fragments; saturated, no odor. |
| | 6 6 6 | | | | |
| 15 | | | | sm | |
| | 0 5 5 | | | | |
| 20 | | | | | Boring continues at top of page. |

## SB - 4 continued

| Depth in Feet | Blows / 6" | Sample Type | Lithology | USCS | Description |
|---|---|---|---|---|---|
| 20 | | | | | |
| | 0 2 3 | | | sm | |
| 25 | | | | | 26.0 |
| | | | | | Stiff, very dark grey, clayey SILT with wood fragments; moist to saturated. |
| | 7 9 11 | | | | |
| 30 | | | | cl | |
| | 5 7 8 | | | | Slight odor. |
| | | | | | Boring terminated at 34.0 feet on 12/6/90. |
| 35 | | | | | |
| 40 | | | | | |

**Notes:**

| | | | |
|---|---|---|---|
| Client Name: | Alaska Marine Lines | Drilling Co.: | GeoBoring & Development, Inc. |
| Project Name: | 7100 2ND Ave. | Drilling Method: | Hollow-Stem Auger |
| Logged By: | JKM | | |

# Geological Boring Log

## SB - 5

| Depth in Feet | Blows / 6" | Sample Type | Lithology | USCS | Description |
|---|---|---|---|---|---|
| 0 | | | | | Asphalt - Concrete (1.0') |
| | 7 7 7 | | | sp sm | Loose, black, fine SAND with trace silt; dry, no odor. (6.0') |
| 5 | | | | | |
| | 8 9 10 | | | sp | Medium dense, black, fine SAND with wood fragments; dry, no odor. (10.0') |
| 10 | | | | | |
| | 3 4 5 | | | cl | Stiff to very stiff, black, silty CLAY with wood fragments; moist to wet, no odor, occasional seams of fine sand. |
| 15 | | | | | |
| | 3 5 7 | | | | |
| 20 | | | | | |

Boring continues at top of page.

## SB - 5 continued

| Depth in Feet | Blows / 6" | Sample Type | Lithology | USCS | Description |
|---|---|---|---|---|---|
| 20 | | | | cl | |
| | 8 10 12 | | | | (23.0') Loose, black, fine SAND with wood fragments; moist, no odor. |
| 25 | | | | | |
| | 2 3 4 | | | sp | |
| 30 | | | | | |
| | 3 5 7 | | | | |
| 35 | | | | | |
| 40 | | | | | |

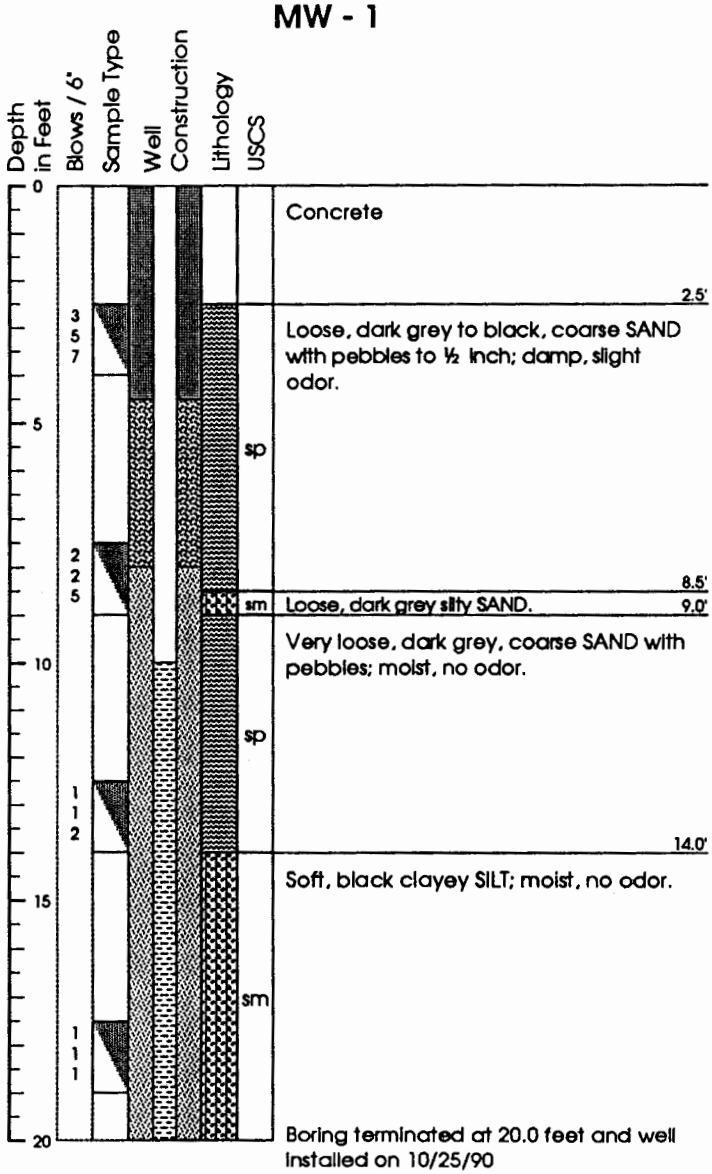
Boring terminted at 34.0 feet on 12/6/90.

**Notes:**

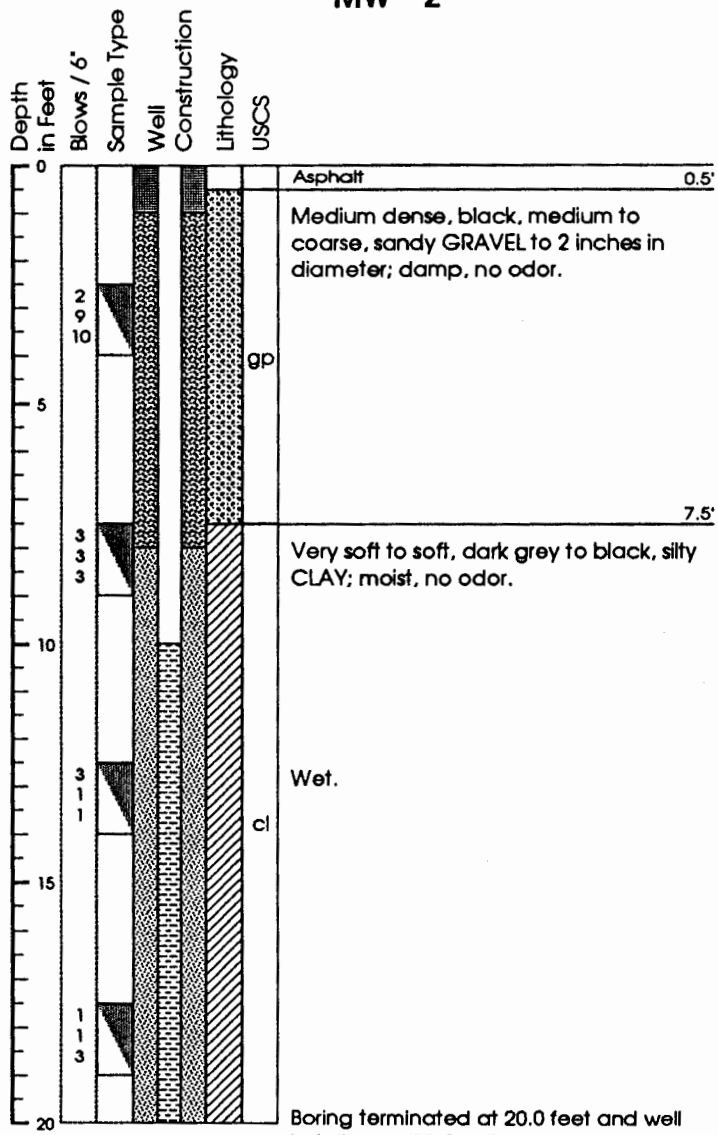
| | | | |
|---|---|---|---|
| Client Name: | Alaska Marine Lines | Drilling Co.: | GeoBoring & Development, Inc. |
| Project Name: | 7100 2ND Ave. | Drilling Method: | Hollow-Stem Auger |
| Logged By: | IMW | | |

# Monitoring Well Construction and Geological Boring Log

## MW - 1




## MW - 2




**Notes:**

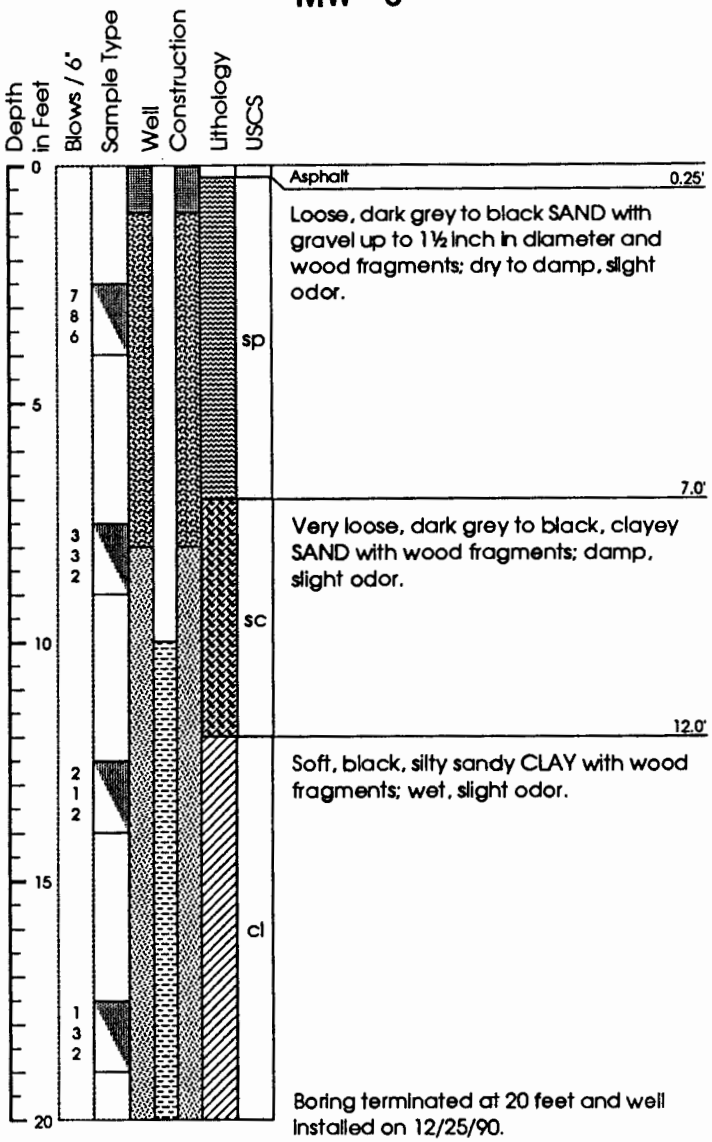
| | | | |
|---|---|---|---|
| Client Name: | Alaska Marine Lines | Drilling Co.: | GeoBoring & Development, Inc. |
| Project Name: | 7100 2ND Ave. | Drilling Method: | Hollow-Stem Auger |
| Logged By: | SW | Reference Elevation: | MW - 1 99.84' |
| | | | MW - 2 99.52' |

Well Description

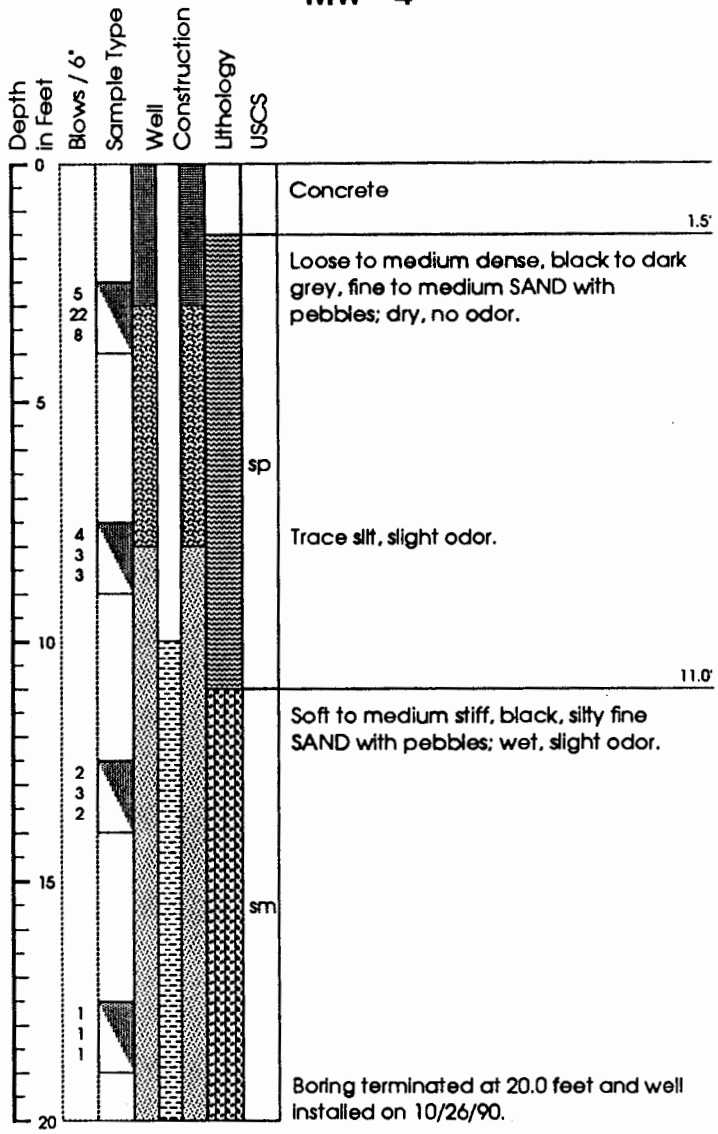
| | | | |
|---|---|---|---|
| Surface Casing: | Flush Mounted | Filter Pack: | 10 - 20 Silica Sand |
| Surface Seal: | Concrete | Seal: | Bentonite |
| Well Casing: | 4" Sched. 40, PVC | Grout: | Concrete |
| Well Screen: | 0.01" slots, Sched 40, PVC | | |

# Monitoring Well Construction and Geological Boring Log

## MW - 3




## MW - 4




**Notes:**

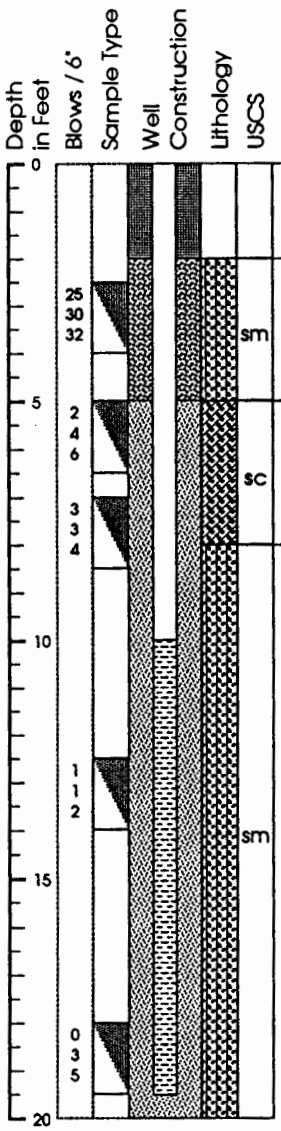
| | | | |
|---|---|---|---|
| Client Name: | Alaska Marine Lines | Drilling Co.: | GeoBoring & Development, Inc. |
| Project Name: | 7100 2 ND Ave. | Drilling Method: | Hollow-Stem Auger |
| Logged By: | MAC | Reference Elevation: | MW - 3 99.71' |
| | | | MW - 4 99.42' |

Well Description

| | | | |
|---|---|---|---|
| Surface Casing: | Flush Mounted | Filter Pack: | 10 - 20 Silica Sand |
| Surface Seal: | Concrete | Seal: | Bentonite |
| Well Casing: | 4" Sched. 40, PVC | Grout: | Concrete |
| Well Screen: | 0.01" slots, Sched 40, PVC | | |

# Monitoring Well Construction and Geological Boring Log

## MW - 5




Asphalt

2.0'

Loose, dark brown to black, silty fine to coarse SAND; dry, slight odor, blow counts are high because of brick debris.

5.0'

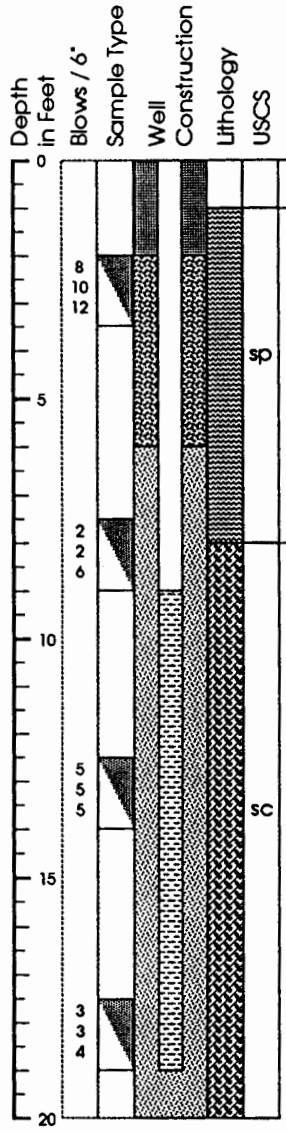
Medium stiff, grey, clayey fine SAND with wood particles; moist, no odor.

8.0'

Very loose to loose, black, silty fine SAND; moist, no odor.

Boring terminated at 20.0 feet and well installed on 1/22/91.

## MW - 6




Asphalt

1.0'

Medium dense, black, fine SAND with some coarse grains; dry, no odor.

8.0'

Loose, black, clayey fine SAND with occasional lenses of wood fragments; moist, no odor.

Loose, black, interbedded clayey fine SAND and CLAY; moist, no odor.

Boring terminated at 20.0 feet and well installed on 1/23/91.

**Notes:**

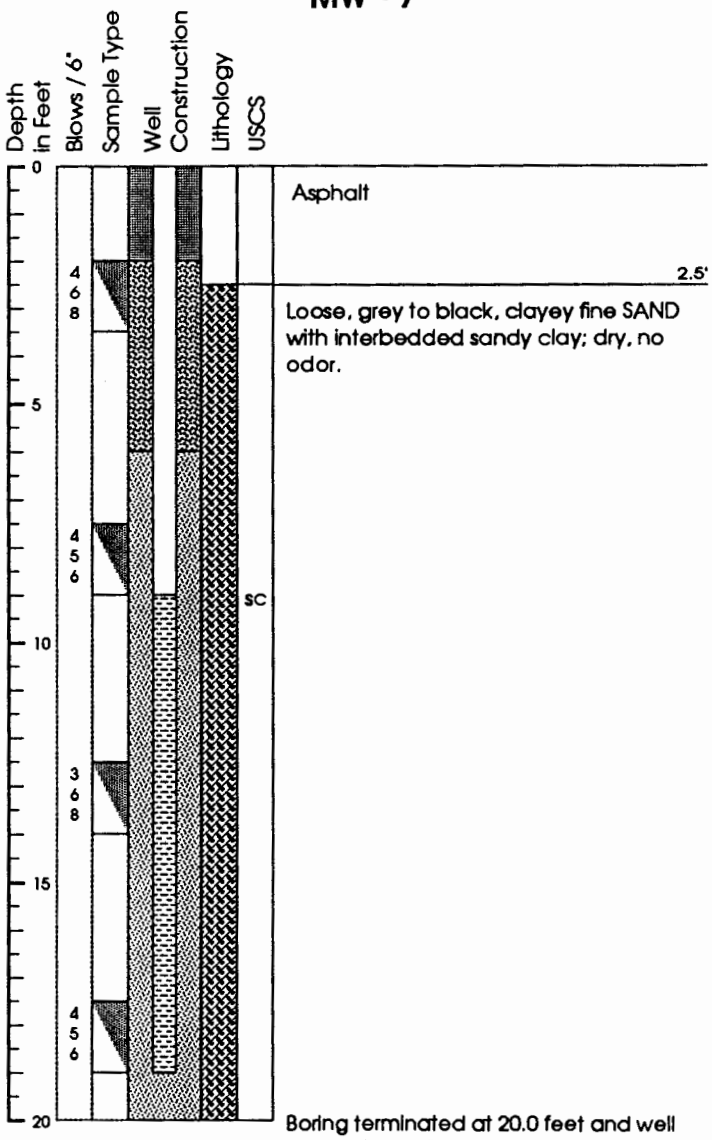
| | | | |
|---|---|---|---|
| Client Name: | Alaska Marine Lines | Drilling Co.: | GeoBoring & Development, Inc. |
| Project Name: | 7100 2 ND Ave. | Drilling Method: | Hollow-Stem Auger |
| Logged By: | IMW | Reference Elevation: | MW - 5 98.32' |
| | | | MW - 6 98.43' |

Well Description

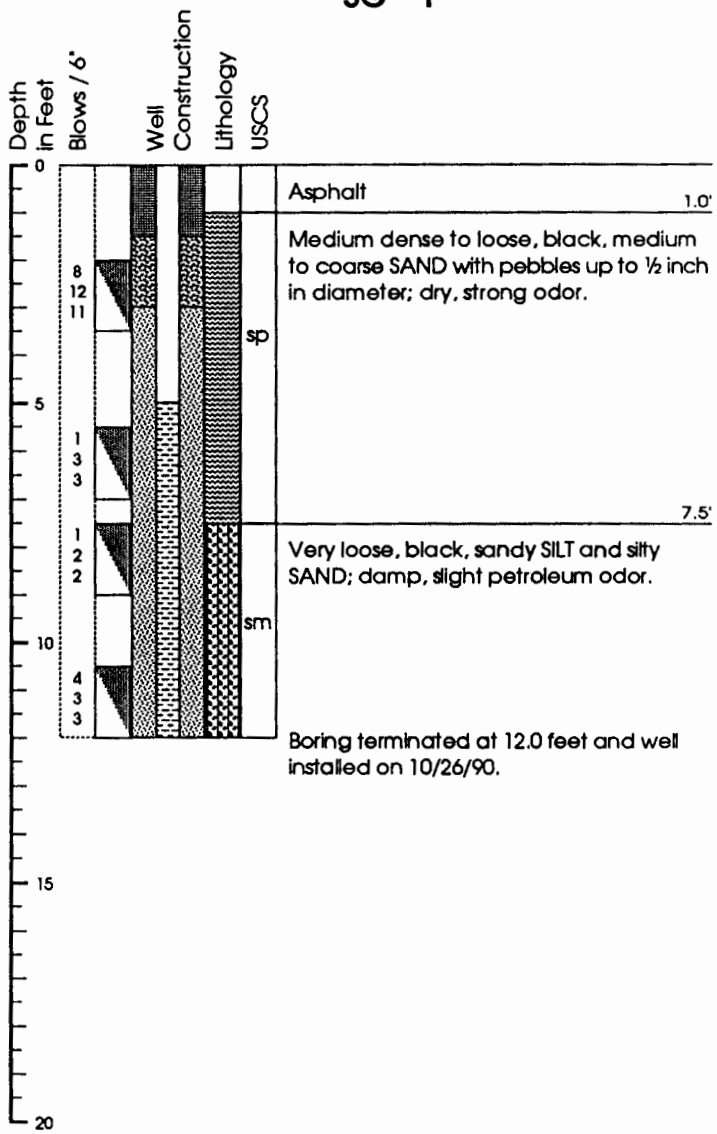
| | | | |
|---|---|---|---|
| Surface Casing: | Flush Mounted | Filter Pack: | 10 - 20 Silica Sand |
| Surface Seal: | Concrete | Seal: | Bentonite |
| Well Casing: | 4" Sched. 40, PVC | Grout: | Concrete |
| Well Screen: | 0.01" slots, Sched 40, PVC | | |

# Monitoring Well Construction and Geological Boring Log

## MW - 7




## SG - 1




**Notes:**

| | | | |
|---|---|---|---|
| Client Name: | Alaska Marine Lines | Drilling Co.: | GeoBoring & Development, Inc. |
| Project Name: | 7100 2 ND Ave. | Drilling Method: | Hollow-Stem Auger |
| Logged By: | IMW | Reference Elevation: | MW - 7 99.48' |

Well Description

| | | | |
|---|---|---|---|
| Surface Casing: | Flush Mounted | Filter Pack: | 10 - 20 Silica Sand |
| Surface Seal: | Concrete | Seal: | Bentonite |
| Well Casing: | 4" Sched. 40, PVC | Grout: | Concrete |
| Well Screen: | 0.01" slots, Sched 40, PVC | | |

# B2. Quarterly Groundwater Monitoring (Dames & Moore 1992e)

**TABLE 1**
**SUMMARY OF WATER LEVEL DATA**
**NOVEMBER 1990 TO AUGUST 1992**
**7100 Second Avenue**
**Alaska Marine Lines**

| WELL NO. | WATER LEVEL ELEVATION[2] | | | | | | |
|---|---|---|---|---|---|---|---|
| | November 1, 1990 | January 15, 1991 | January 25, 1991 | September 5, 1991 | January 10, 1992 | April 8, 1992 | August 14, 1992 |
| MW-1 | 87.87 | 88.70 | 88.31 | 88.23 | 88.73 | 88.74 | 88.07 |
| MW-2 | 88.18 | 89.08 | 88.40 | 88.26 | 88.82 | 88.82 | 88.24 |
| MW-3 | 87.89 | 88.75 | 88.43 | 88.29 | 87.81 | 88.81 | 88.23 |
| MW-4 | 88.45 | 89.31 | 89.22 | 89.09 | 88.92 | 89.42 | 88.97 |
| MW-5 | N/A | 89.57 | 89.11 | N/A[1] | 89.48 | 89.32 | 88.85 |
| MW-6 | N/A | 89.66 | 89.05 | N/A[1] | 90.93 | 89.63 | 89.18 |
| MW-7 | N/A | 90.50 | 90.48 | 90.31 | 90.42 | 90.48 | 90.20 |
| PIER | N/A | 87.94 | 89.25 | N/A | 90.77 | 89.57 | 90.92 |

N/A Not Analyzed
1 Well covered with asphalt on 9/5/91
2 Water elevations are relative to the site bench mark, which is the yellow-painted obstruction post located west of the voltage transformer on the south side of the site. The site bench mark is assigned an arbitrary elevation of 100.00 feet.

005\MISC\AML4Q.TBL

**TABLE 2**
**GROUND WATER FIELD SAMPLING PARAMETERS**
**FOURTH QUARTERLY SAMPLING EVENT**
**7100 2nd Avenue**
**Alaska Marine Lines**

| WELL NO. | DATE | TIME | pH (-log $H^+$) | T (°C) | SC (µS) | Well Vol (gal) | Purge Vol (gal) | Method | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 8/16/92 | 16:35 | 7.05 | 16.5 | 2310 | 4.8 | 8 | BK Pump | poor recovery of water in well |
| MW-2 | 8/16/92 | 11:05 | 7.29 | 16.8 | 1412 | 4.9 | 15 | BK Pump | black, turbid |
| MW-3 | 8/16/92 | 14:10 | 7.12 | 16.6 | 1737 | 5 | 15 | BK Pump | yellow, clear |
| MW-4 | 8/16/92 | 15:30 | 7.00 | 15.3 | 1401 | 5.6 | 8 | BK Pump | black, turbid, poor recovery of water in well |
| MW-5 | 8/16/92 | 09:50 | 7.70 | 21.2 | 3103 | 1.6 | 2 | BK Pump | black, turbid, poor recovery of water in well |
| MW-6 | 8/16/92 | 12:20 | 6.83 | 17.7 | 4200 | 1.4 | 6 | BK Pump | black |
| MW-7 | 8/16/92 | 10:10 | 7.29 | 18.1 | 1574 | 1.6 | 6 | BK Pump | black, turbid, foam on surface |

**TABLE 3**
**SUMMARY OF GROUND-WATER ANALYTICAL DATA**
**7100 2nd Avenue**
**Alaska Marine Lines**

| WELL NO. | DATE | Analysis | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | TPH ppm | TPH-D[1] ppm | TPH-G[2] ppm | Benzene ppb | Toluene ppb | Ethylbenzene ppb | Xylenes ppb |
| MW1 | 11/1/90 | 0.59 | NA | NA | <1.0 | <1.0 | <1.0 | <1.0 |
| | 12/18/90 | NA | NA | NA | | NA | NA | NA |
| | 9/5/91 | <10.0 | NA | NA | <1.0 | <1.0 | <1.0 | <2.0 |
| | 1/10/92 | <2.0 | NA | NA | <1.0 | <1.0 | <1.0 | <2.0 |
| | 4/9/92 | NA | <0.25 | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 |
| | 8/16/92 | NA | <0.25 | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 |
| MW2 | 11/1/90 | 0.56 | NA | NA | <1.0 | <1.0 | <1.0 | <1.0 |
| | 12/18/90 | NA | NA | NA | NA | NA | NA | NA |
| | 9/5/91 | NA | NA | NA | **88** | <1.0 | <1.0 | <2.0 |
| | 1/10/92 | <2.0 | NA | NA | **110** | <1.0 | <1.0 | <2.0 |
| | 4/9/92 | NA | 0.58 | 0.14J[1] | **65** | <1.0 | <1.0 | <2.0 |
| | 8/16/92 | NA | <0.25 | <0.25 | **94** | <1.0 | <1.0 | <2.0 |
| MW3 | 11/1/90 | 0.33 | NA | NA | <1.0 | <1.0 | 1.1 | 5.3 |
| | 12/18/90 | NA | NA | NA | **420** | 3.5 | 13 | **48.4** |
| | 9/5/91 | <10.0 | NA | NA | **630*** | 3.2 | 16 | **25** |
| | 1/10/92 | <2.0 | NA | NA | **500*** | 3.8 | 14 | 17 |
| | 4/9/92 | NA | <0.25 | 0.72[1] | **620*** | 3 | 9.1 | 18 |
| | 8/16/92 | NA | 0.30[1] | 0.31[1] | **910*** | 3.2 | 9.4 | 15 |
| MW4 | 11/1/90 | 0.27 | NA | NA | **4200** | 8.3 | 2.1 | 4.2 |
| | 12/18/90 | NA | NA | NA | **3600** | <50 | <50 | **63** |
| | 9/5/91 | <10.0 | NA | NA | **2000** | 12 | <1.0 | 19 |
| | 1/10/92 | <2.0 | NA | NA | **2700*** | 11 | 4.1 | 17 |
| | 4/9/92 | NA | <0.25 | 0.15J[1] | **1800*** | 6.2 | <1.0 | 5.7 |
| | 8/16/92 | NA | <0.25 | 0.22J[1] | **3400*** | 12 | 4.6 | 19 |

TABLE 3
SUMMARY OF GROUND-WATER ANALYTICAL DATA
(Cont.)

| WELL NO. | DATE | Analysis | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | TPH ppm | TPH-D[1] ppm | TPH-G[2] ppm | Benzene ppb | Toluene ppb | Ethylbenzene ppb | Xylenes ppb |
| MW5 | 11/1/90 | NA | NA | NA | NA | NA | NA | NA |
| | 12/18/90 | NA | NA | NA | <5.0 | <5.0 | <5.0 | <5.0 |
| | 9/5/91 | NA | NA | NA | NA | NA | NA | NA |
| | 1/10/92 | <2.0 | NA | NA | <1.0 | <1.0 | <1.0 | <2.0 |
| | 4/9/92 | NA | <0.25 | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 |
| | 8/16/92 | NA | 0.28[1] | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 |
| MW6 | 11/1/90 | NA | NA | NA | NA | NA | NA | NA |
| | 12/18/90 | NA | NA | NA | <5.0 | <5.0 | <5.0 | <5.0 |
| | 9/5/91 | NA | NA | NA | NA | NA | NA | NA |
| | 1/10/92 | <2.0 | NA | NA | <1.0 | <1.0 | <1.0 | <2.0 |
| | 4/9/92 | NA | **4.2**[1] | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 |
| | 8/16/92 | NA | **1.1**[1] | <0.25 | <1.0 | <1.0 | <1.0 | <2.0 |
| MW7 | 11/1/90 | NA | NA | NA | NA | NA | NA | NA |
| | 12/18/90 | NA | NA | NA | <5.0 | <5.0 | <5.0 | <5.0 |
| | 9/5/91 | <10.0 | NA | NA | 3.4 | **79** | <1.0 | <2.0 |
| | 1/10/92 | <2.0 | NA | NA | 1.7 | 4.2 | <1.0 | <2.0 |
| | 4/9/92 | NA | **6.6**[1] | <0.25 | 1.6 | <1.0 | <1.0 | <2.0 |
| | 8/16/92 | NA | 0.73[1] | <0.25 | 1.1 | 22 | <1.0 | <2.0 |
| MTCA[2] | | 1 | 1 | 1 | 5 | 40 | 30 | 20 |

1 - In the opinion of the laboratory analyst, there was no chromatographic pattern match for diesel or gasoline.
2 - MTCA - The Model Toxics Control Act Cleanup Regulation, effective February 28, 1991.
J - Indicates an estimated value when result is less than specified detection limit.
< - This parameter was not detected at a concentration above the detection level indicated in the table.
NA - Not Analyzed
* - Indicates the initial analysis of the sample was above the linear range of the analytical instrument. The value shown is the concentration obtained following the required dilution.
ppm - parts per million
ppb - parts per billion

Numbers in bold indicate a concentration at or above the MTCA cleanup levels.

**TABLE 4**
**SUMMARY OF GROUND-WATER QA/QC ANALYTICAL DATA**
**FOURTH QUARTERLY SAMPLING EVENT**
**7100 Second Avenue**
**Alaska Marine Lines**

| DUPLICATE WELL SAMPLES | SAMPLING DATE | WELL NO. | ANALYSIS | SAMPLE VALUES | DUPLICATE VALUES |
|---|---|---|---|---|---|
| | 8/16/92 | MW-2 | TPH - Diesel | <0.25 ppm | <0.25 ppm |

| TRIP BLANK | SAMPLING DATE | WELL NO. | ANALYSIS | SAMPLE VALUES | DUPLICATE VALUES |
|---|---|---|---|---|---|
| | 8/16/92 | N/A | Benzene | <1.0 ppb | N/A |
| | | | Toluene | <1.0 ppb | N/A |
| | | | Ethylbenzene | <1.0 ppb | N/A |
| | | | Xylenes | <2.0 ppb | N/A |
| | | | WTPH - Gasoline | <0.25 ppm | N/A |

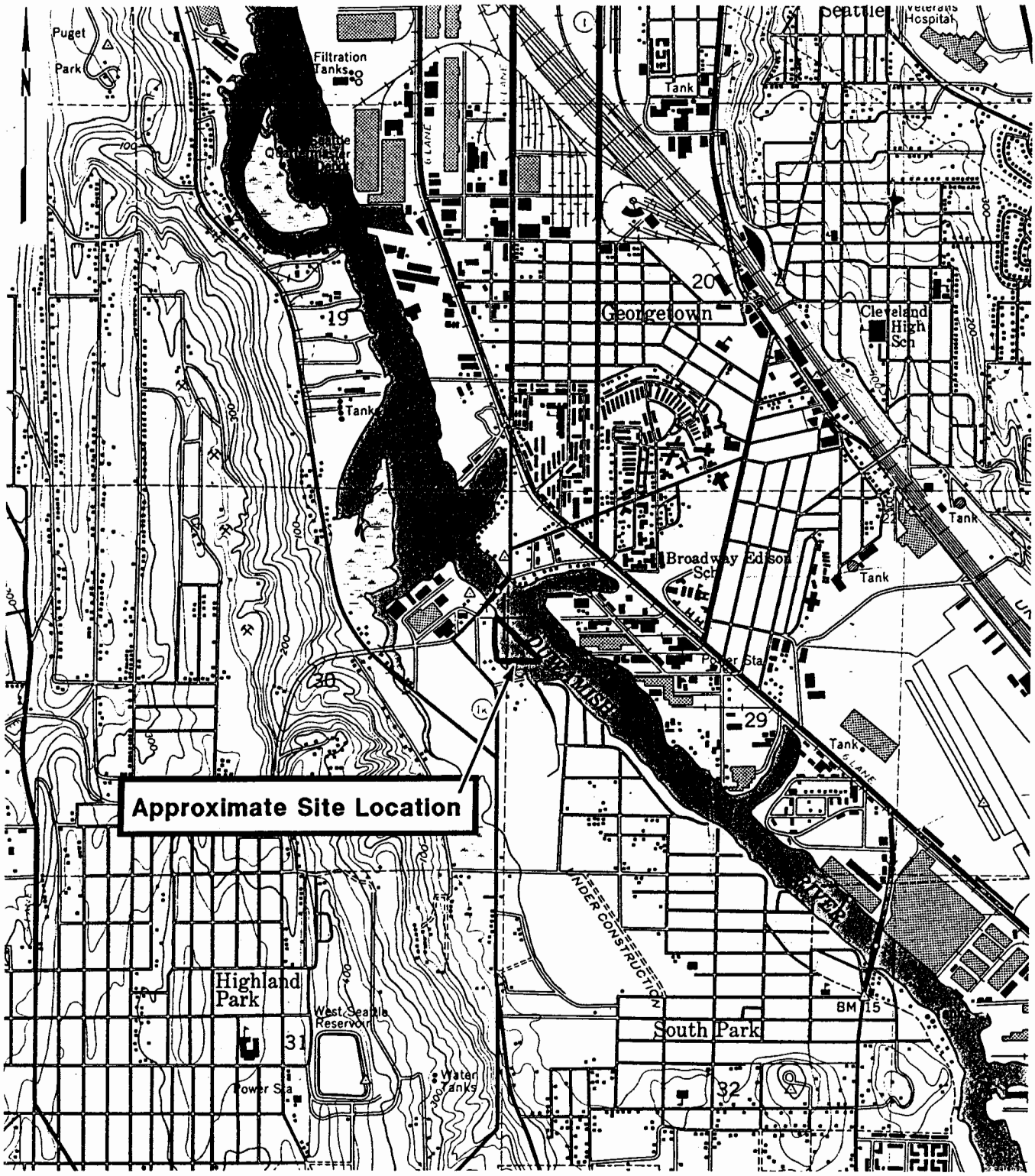
N/A - Not applicable.
ppm - parts per million
ppb - parts per billion
< - This parameter was not detected at a concentration above the detection level indicated in the table.

## Table 5
### 24-hour Period Water Level Elevations
### Alaska Marine Lines
### 7100 2nd Avenue
### Seattle, Washington

| Date | Time | Station | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 | MW-6 | MW-7 | Pier |
| 14-Aug-92 | 21:30 | 88.14 | 88.31 | 88.27 | 88.97 | 89.00 | 89.18 | 89.21 | 88.92 |
| | 22:00 | 88.15 | 88.33 | 88.27 | 88.96 | 88.98 | 89.14 | 89.19 | 87.92 |
| | 22:30 | 88.17 | 88.34 | 88.28 | 88.96 | 88.95 | 89.10 | 89.17 | 87.14 |
| | 23:00 | 88.17 | 88.35 | 88.28 | 88.96 | 88.93 | 89.05 | 89.15 | 86.18 |
| | 23:30 | 88.18 | 88.36 | 88.29 | 88.98 | 88.91 | 89.02 | 89.17 | 85.45 |
| 15-Aug-92 | 0:00 | 88.19 | 88.35 | 88.30 | 88.96 | 88.89 | 88.99 | 89.16 | 85.04 |
| | 0:30 | 88.19 | 88.35 | 88.29 | 88.96 | 88.87 | 88.96 | 89.17 | 84.72 |
| | 1:00 | 88.19 | 88.34 | 88.29 | 88.96 | 88.85 | 88.95 | 89.17 | 84.68 |
| | 1:30 | 88.19 | 88.33 | 88.28 | 88.96 | 88.83 | 88.91 | 89.15 | 84.85 |
| | 2:00 | 88.19 | 88.33 | 88.28 | 88.96 | 88.82 | 88.91 | 89.15 | 85.29 |
| | 2:30 | 88.18 | 88.32 | 88.28 | 88.96 | 88.81 | 88.91 | 89.15 | 85.86 |
| | 3:00 | 88.17 | 88.31 | 88.27 | 88.97 | 88.80 | 88.90 | 89.16 | 86.52 |
| | 3:30 | 88.16 | 88.29 | 88.26 | 88.97 | 88.79 | 88.90 | 89.17 | 87.19 |
| | 4:00 | 88.16 | 88.29 | 88.26 | 88.97 | 88.79 | 88.91 | 89.17 | 87.97 |
| | 4:30 | 88.15 | 88.28 | 88.26 | 88.97 | 88.80 | 88.92 | 89.17 | 88.84 |
| | 5:00 | 88.14 | 88.27 | 88.26 | 88.98 | 88.81 | 88.94 | 89.16 | 89.42 |
| | 5:30 | 88.14 | 88.27 | 88.26 | 88.98 | 88.83 | 88.96 | 89.17 | 89.82 |
| | 6:00 | 88.14 | 88.27 | 88.26 | 88.97 | 88.84 | 88.97 | 89.17 | 90.07 |
| | 6:30 | NA | NA | NA | NA | NA | NA | NA | NA |
| | 7:00 | 88.14 | 88.27 | 88.26 | 88.97 | 88.87 | 89.01 | 89.17 | 89.86 |
| | 7:30 | 88.14 | 88.28 | 88.27 | 88.96 | 88.86 | 89.00 | 89.17 | 89.37 |
| | 8:00 | 88.15 | 88.28 | 88.27 | 88.96 | 88.86 | 88.99 | 89.17 | 88.77 |
| | 8:30 | 88.16 | 88.29 | 88.28 | 88.96 | 88.86 | 88.97 | 89.17 | 88.07 |
| | 9:00 | 88.17 | 88.30 | 88.28 | 88.95 | 88.86 | 88.95 | 89.17 | 86.97 |
| | 9:30 | 88.17 | 88.30 | 88.29 | 88.94 | 88.84 | 88.92 | 89.16 | 85.91 |
| | 10:00 | 88.17 | 88.30 | 88.28 | 88.94 | 88.82 | 88.88 | 89.14 | 84.62 |
| | 10:30 | 88.17 | 88.30 | 88.28 | 88.93 | 88.79 | 88.84 | 89.14 | 83.52 |
| | 11:00 | 88.17 | 88.30 | 88.27 | 88.93 | 88.76 | 88.81 | 89.14 | 82.57 |
| | 11:30 | 88.17 | 88.30 | 88.27 | 88.93 | 88.73 | 88.79 | 89.14 | 81.37 |
| | 12:00 | 88.16 | 88.29 | 88.26 | 88.94 | 88.71 | 88.78 | 89.15 | 80.97 |
| | 12:30 | 88.14 | 88.27 | 88.25 | 88.93 | 88.68 | 88.76 | 89.14 | 80.92 |
| | 13:00 | 88.13 | 88.27 | 88.24 | 88.94 | 88.66 | 88.76 | 89.15 | 80.97 |
| | 13:30 | 88.12 | 88.25 | 88.23 | 88.95 | 88.65 | 88.76 | 89.15 | 81.52 |
| | 14:00 | 88.10 | 88.24 | 88.21 | 88.96 | 88.64 | 88.77 | 89.16 | 82.22 |
| | 14:30 | 88.10 | 88.24 | 88.21 | 88.97 | 88.64 | 88.77 | 89.16 | 83.04 |
| | 15:00 | 88.09 | 88.22 | 88.21 | 88.97 | 88.65 | 88.79 | 89.17 | 84.22 |
| | 15:30 | 88.07 | 88.21 | 88.20 | 88.99 | 88.68 | 88.81 | 89.17 | 85.27 |
| | 16:00 | 88.06 | 88.21 | 88.20 | 89.01 | 88.69 | 88.84 | 89.17 | 86.42 |
| | 16:30 | 88.06 | 88.21 | 88.20 | 89.02 | 88.72 | 88.87 | 89.18 | 87.67 |
| | 17:00 | 88.06 | 88.20 | 88.20 | 89.02 | 88.72 | 88.89 | 89.19 | 88.87 |
| | 17:30 | 88.06 | 88.20 | 88.21 | 89.03 | 88.76 | 88.93 | 89.19 | 89.87 |
| | 18:00 | 88.06 | 88.20 | 88.22 | 89.04 | 88.80 | 88.97 | 89.20 | 90.64 |
| | 18:30 | 88.06 | 88.20 | 88.23 | 89.04 | 88.84 | 89.01 | 89.20 | 91.20 |
| | 19:00 | 88.07 | 88.23 | 88.24 | 89.04 | 88.87 | 89.05 | 89.20 | 91.42 |
| | 19:30 | 88.08 | 88.24 | 88.26 | 89.04 | 88.90 | 89.12 | 89.21 | 91.37 |
| | 20:00 | 88.10 | 88.25 | 88.26 | 89.03 | 88.93 | 89.15 | 89.21 | 91.15 |
| | 20:30 | 88.13 | 88.27 | 88.26 | 89.02 | 88.94 | 89.17 | 89.21 | 90.72 |
| | 21:00 | 88.13 | 88.28 | 88.27 | 89.02 | 88.96 | 89.19 | 89.20 | 90.18 |

Notes:

Water elevations are relative to site bench mark. Site bench mark is assigned an arbitrary elevation of 100.00 feet.




0 2000 4000

Scale in Feet

*Source: USGS Topographic Map, 7.5 Minute Quadrangle, Seattle South, 1949.*

**Figure 1**

**1949 Site Location Map**
**Alaska Marine Lines**
**7100 2nd Avenue**
**Seattle, WA**
**Dames & Moore**

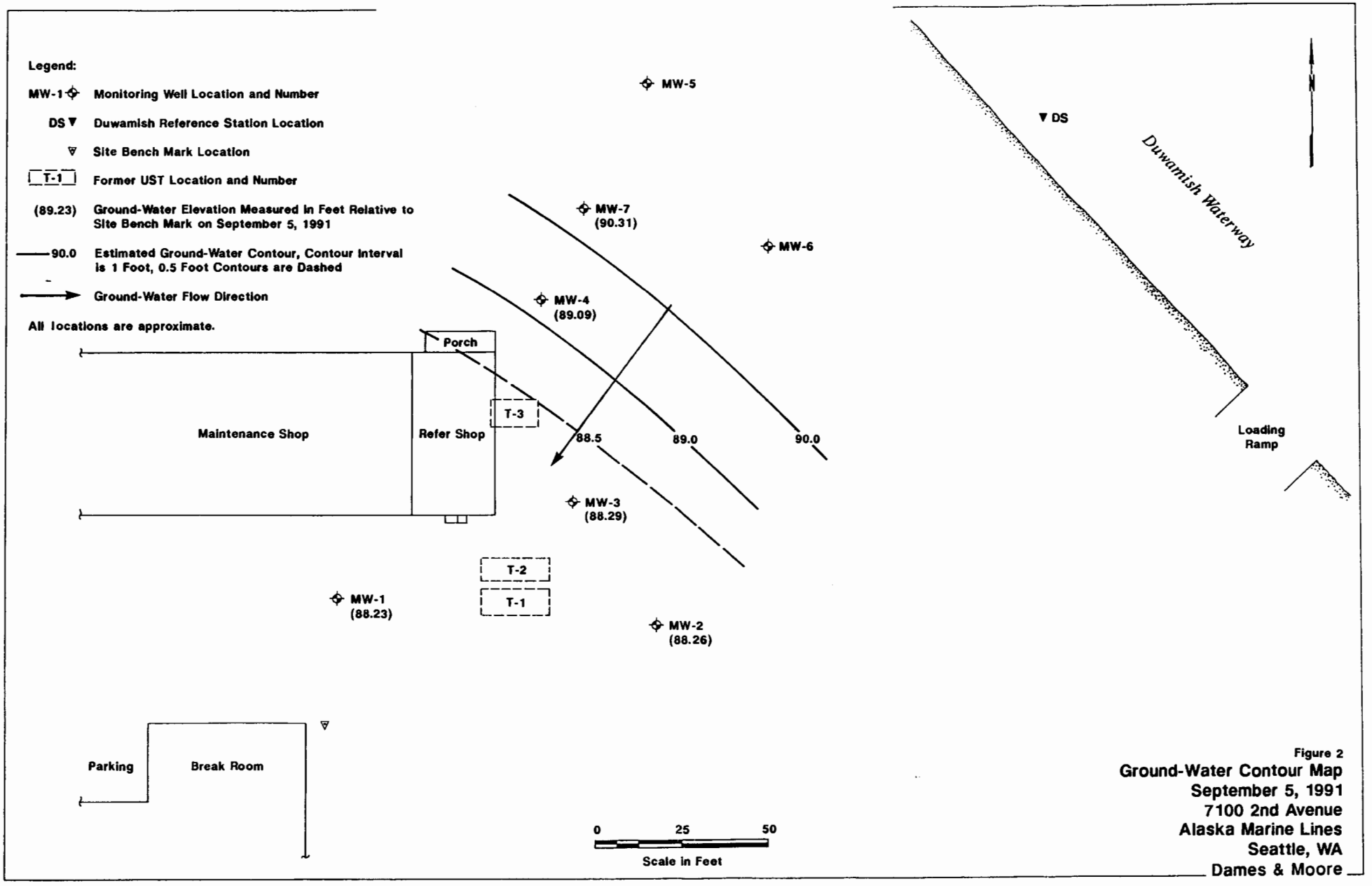



Figure 2
Ground-Water Contour Map
September 5, 1991
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21048-006-005

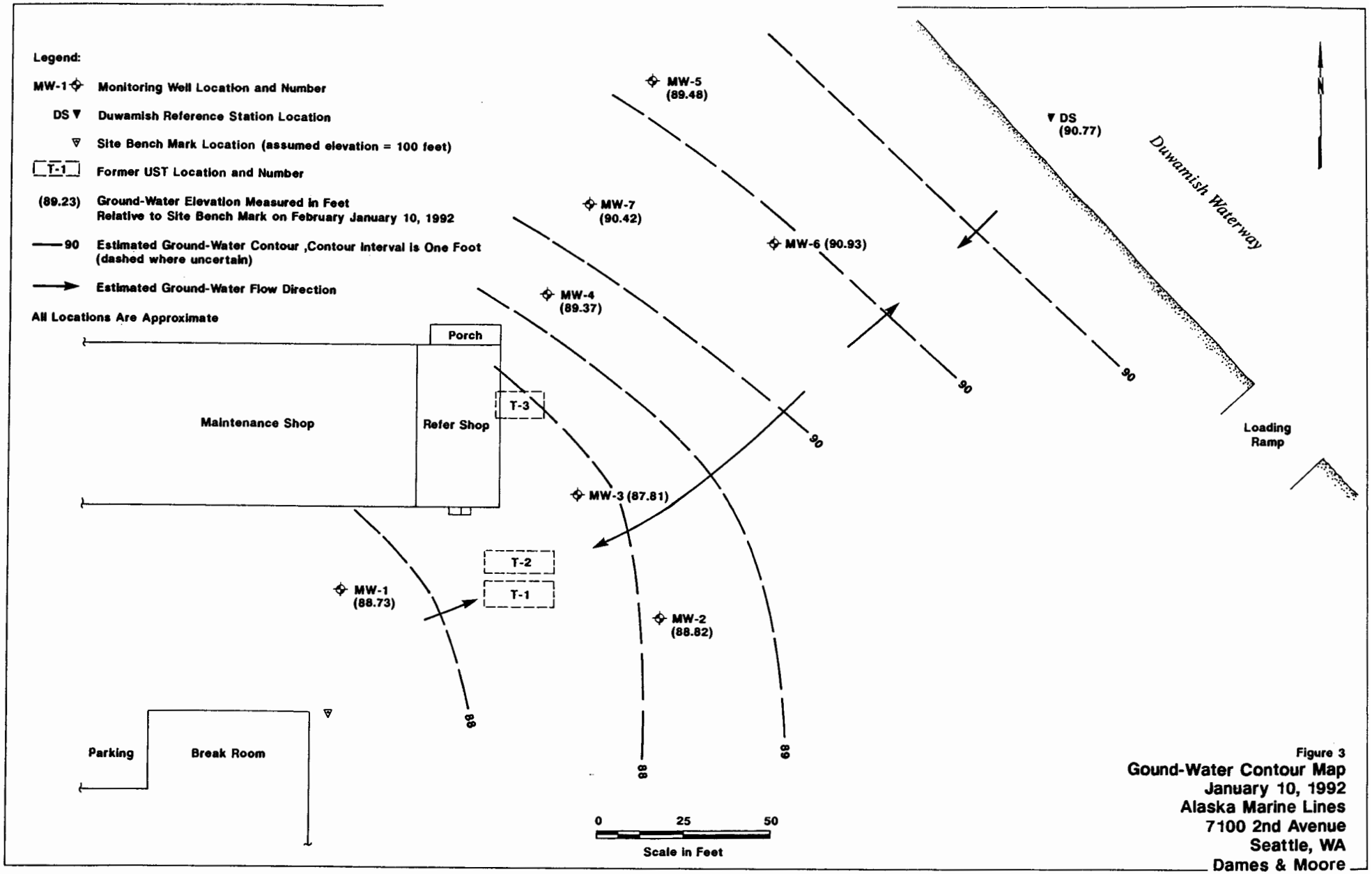



Figure 3
Gound-Water Contour Map
January 10, 1992
Alaska Marine Lines
7100 2nd Avenue
Seattle, WA
Dames & Moore

Job no. 21048-001-005

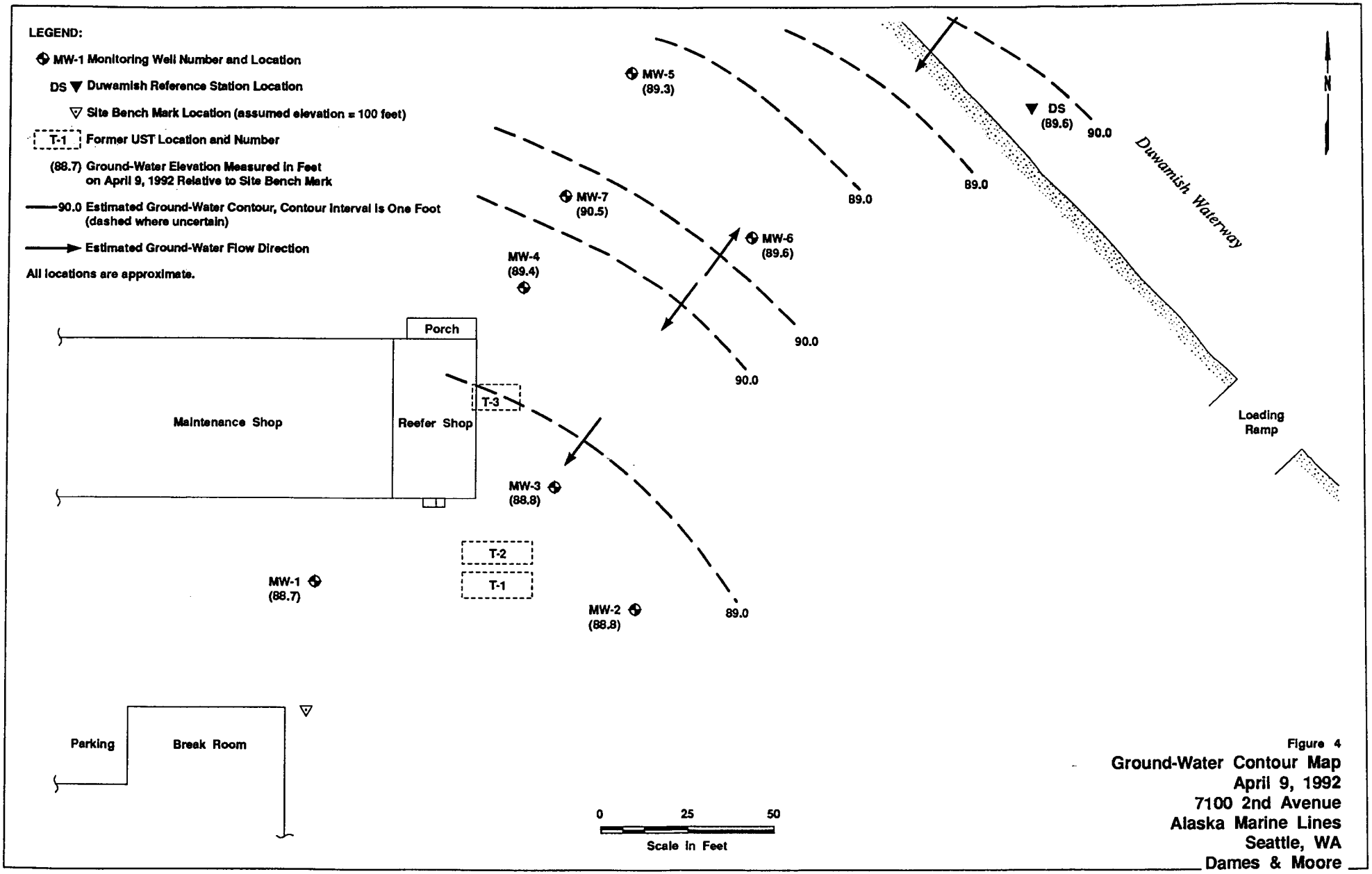



Figure 4
Ground-Water Contour Map
April 9, 1992
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21049-006-005

21046_04.CDR

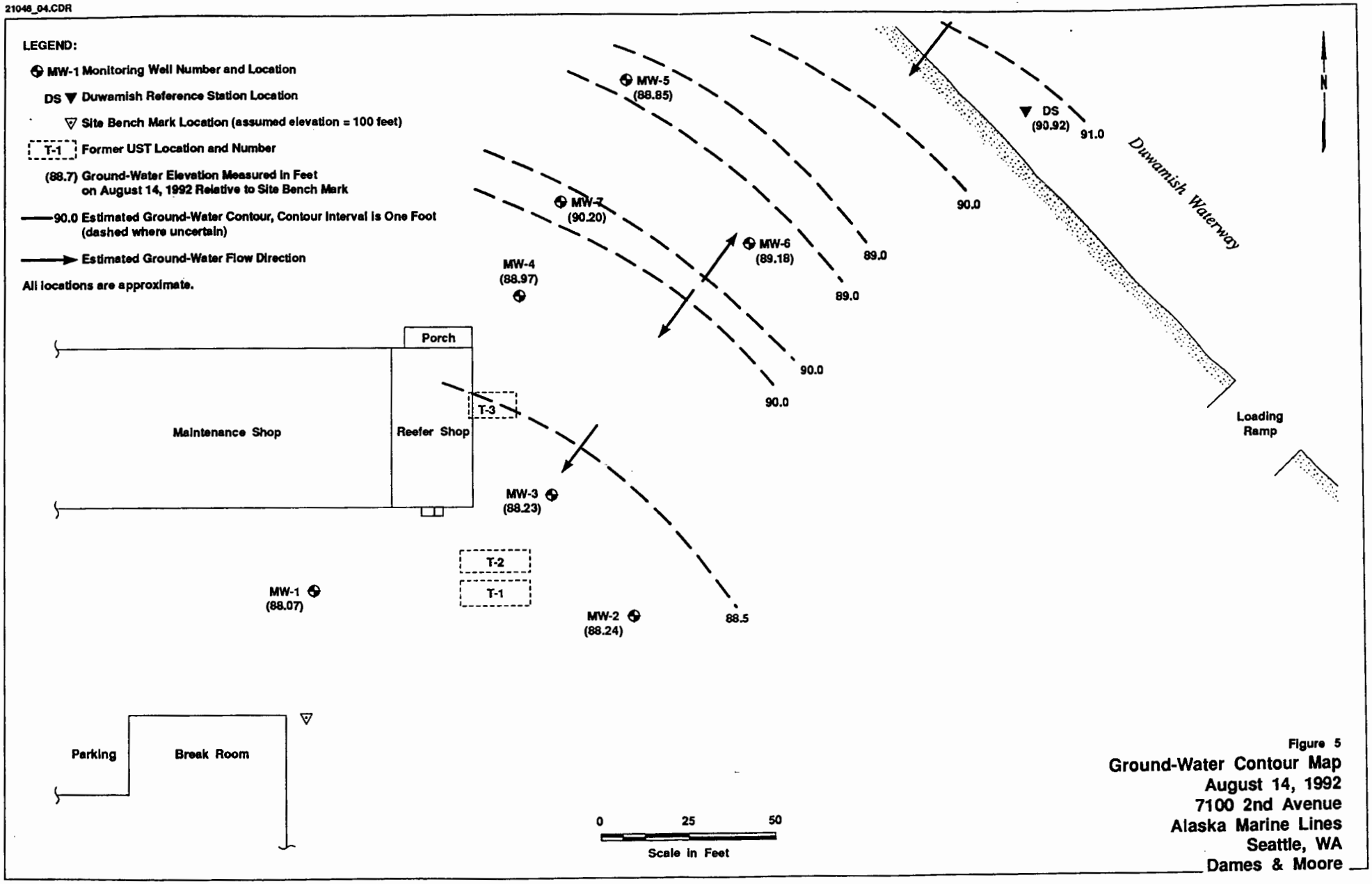
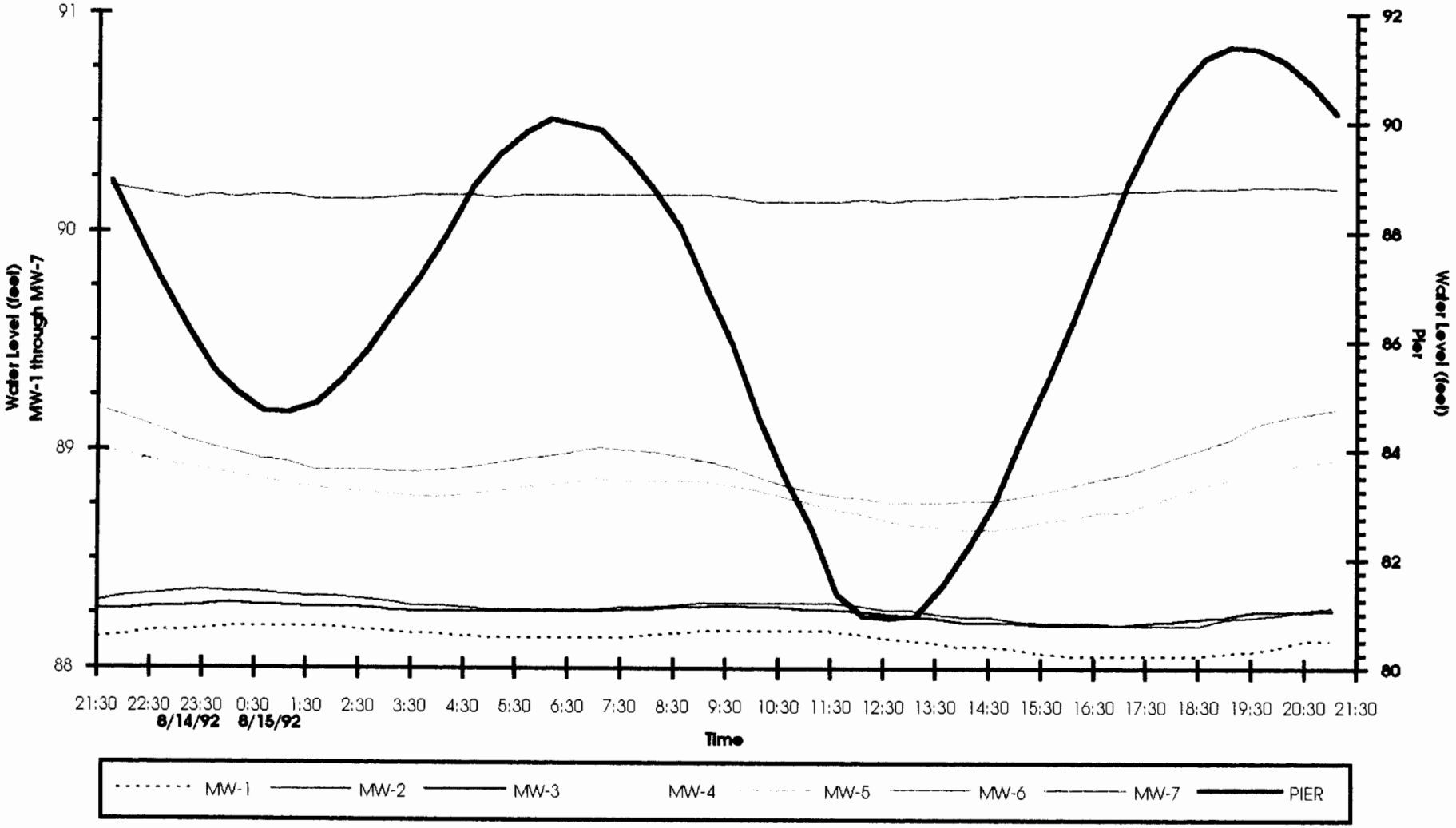



Figure 5
Ground-Water Contour Map
August 14, 1992
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21048-006-005

**Figure 6**
**Alaska Marine Lines**
**Water Level (MW1 - 7 & Pier)**
**8/14 - 8/15/92**




Job No. 21048-006-005
(gdl 10/30/92 (AML-WTR.XLW)WTRLVL.XLS Chart 1)

Dames Moore

21048_05.CDR

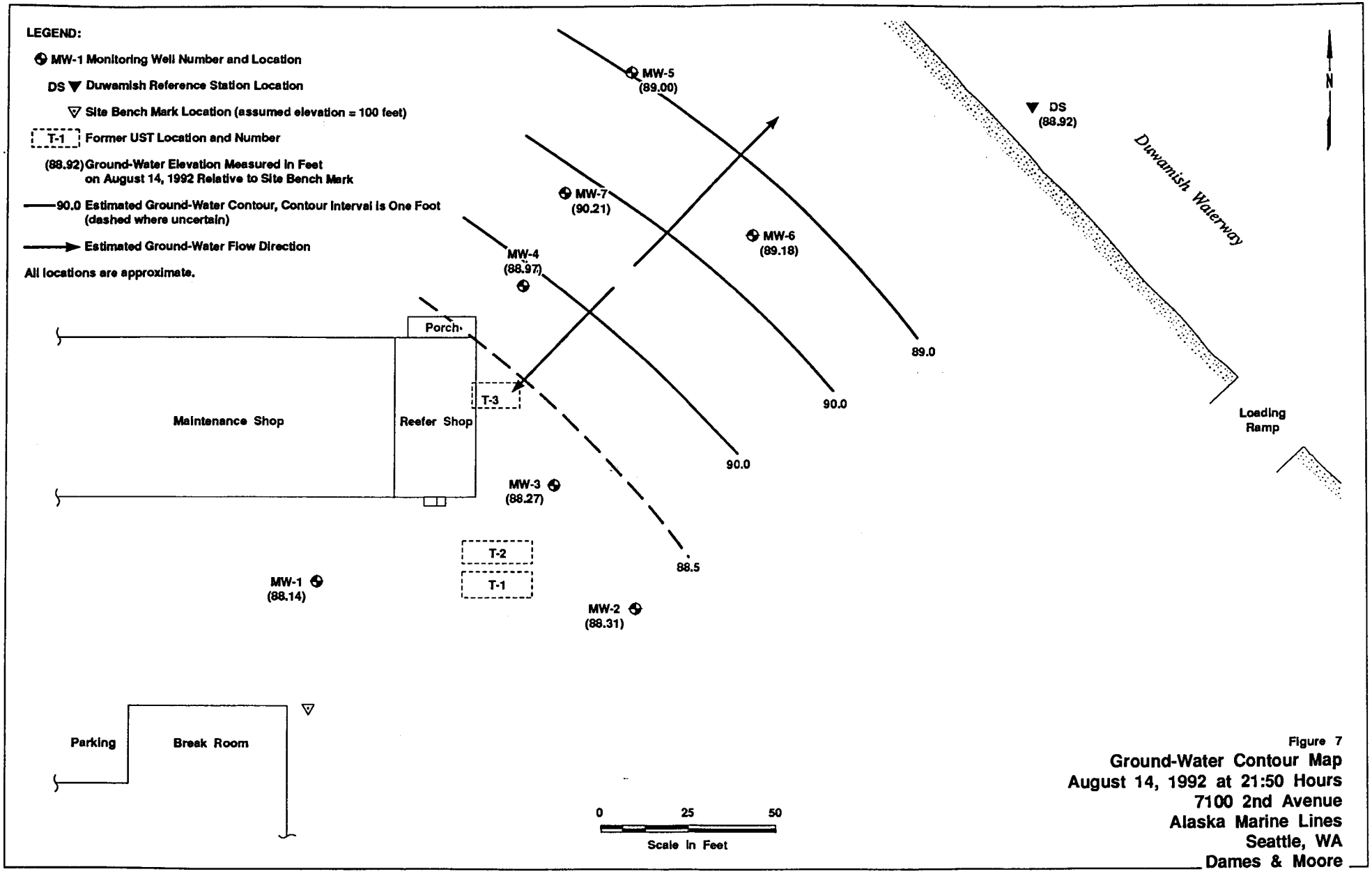



Figure 7
Ground-Water Contour Map
August 14, 1992 at 21:50 Hours
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21048-006-005

21048_07.CDR

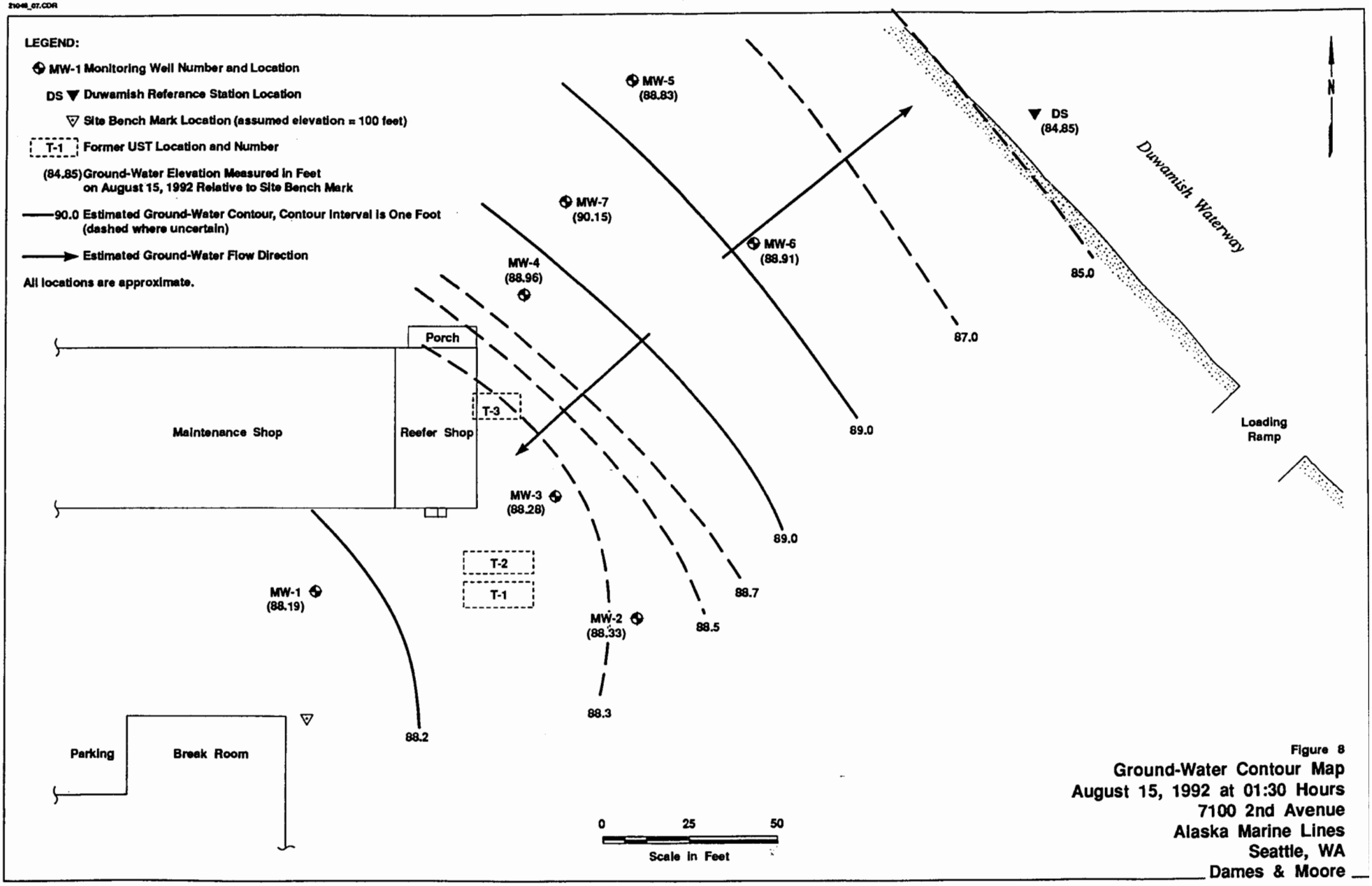



Figure 8
Ground-Water Contour Map
August 15, 1992 at 01:30 Hours
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21048-006-005

21048_05.CDR

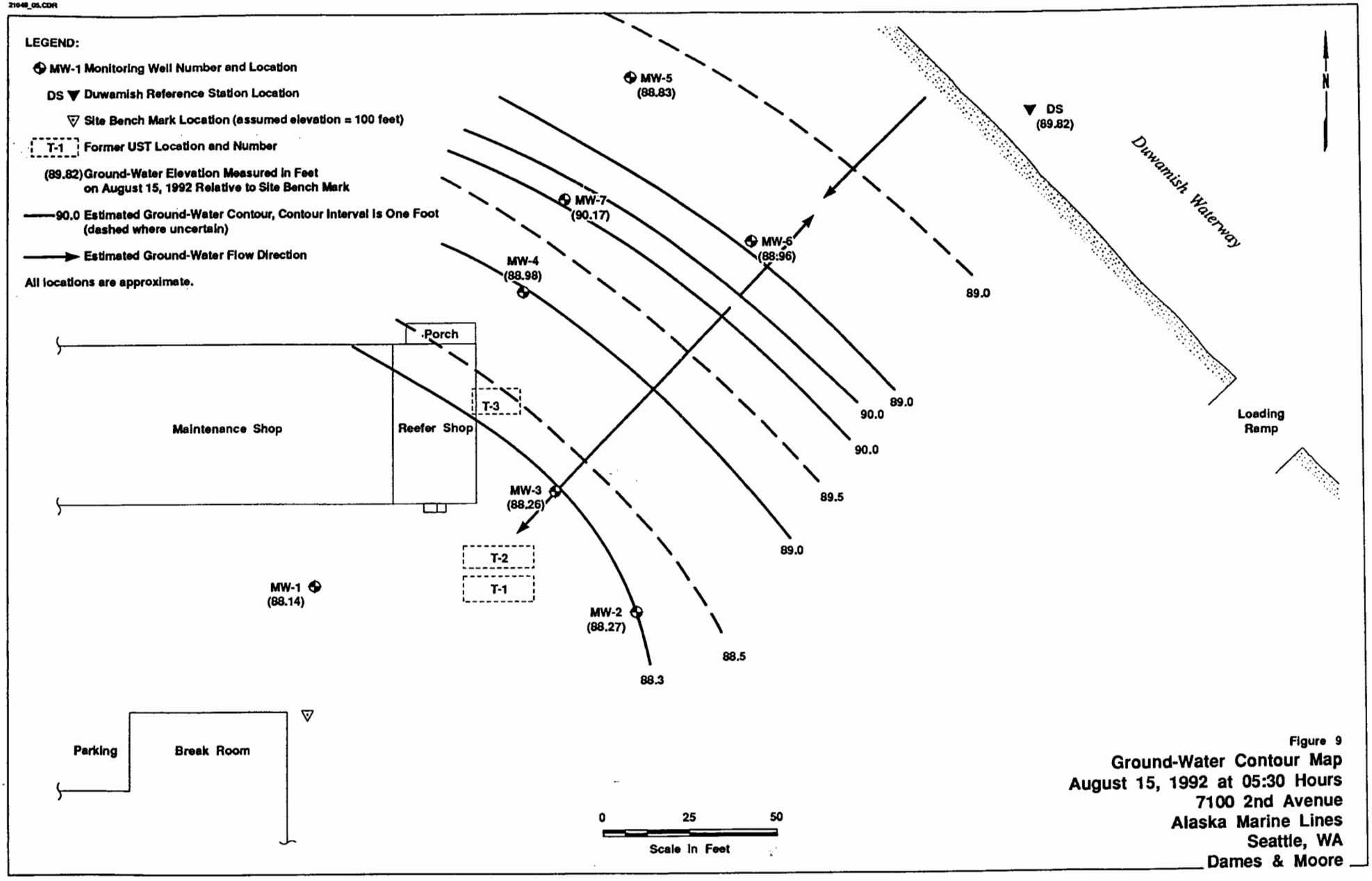



Figure 9
Ground-Water Contour Map
August 15, 1992 at 05:30 Hours
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21048-006-005

21048_08.CDR

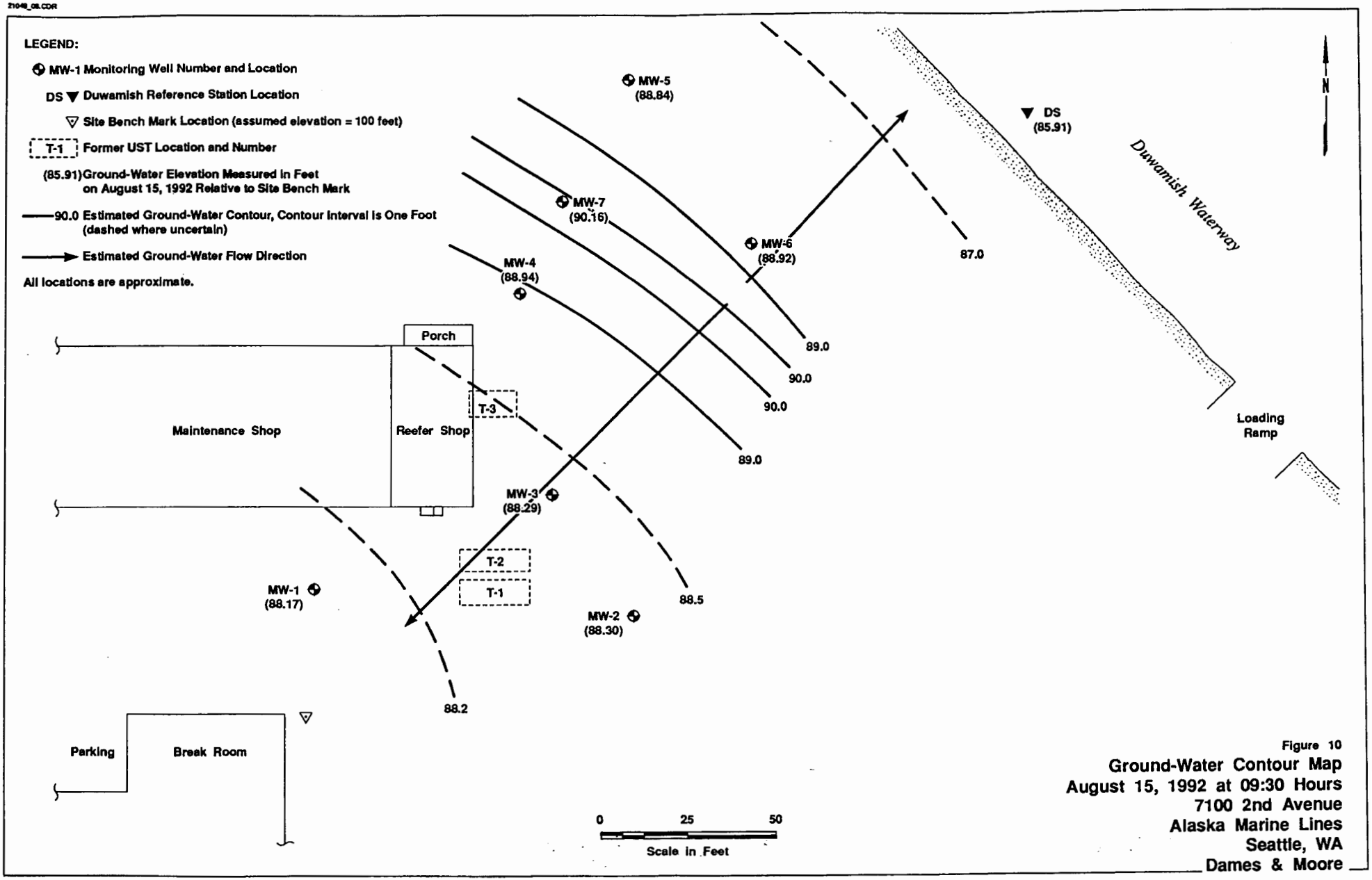



Figure 10
Ground-Water Contour Map
August 15, 1992 at 09:30 Hours
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21048-006-005

21048_06.CDR

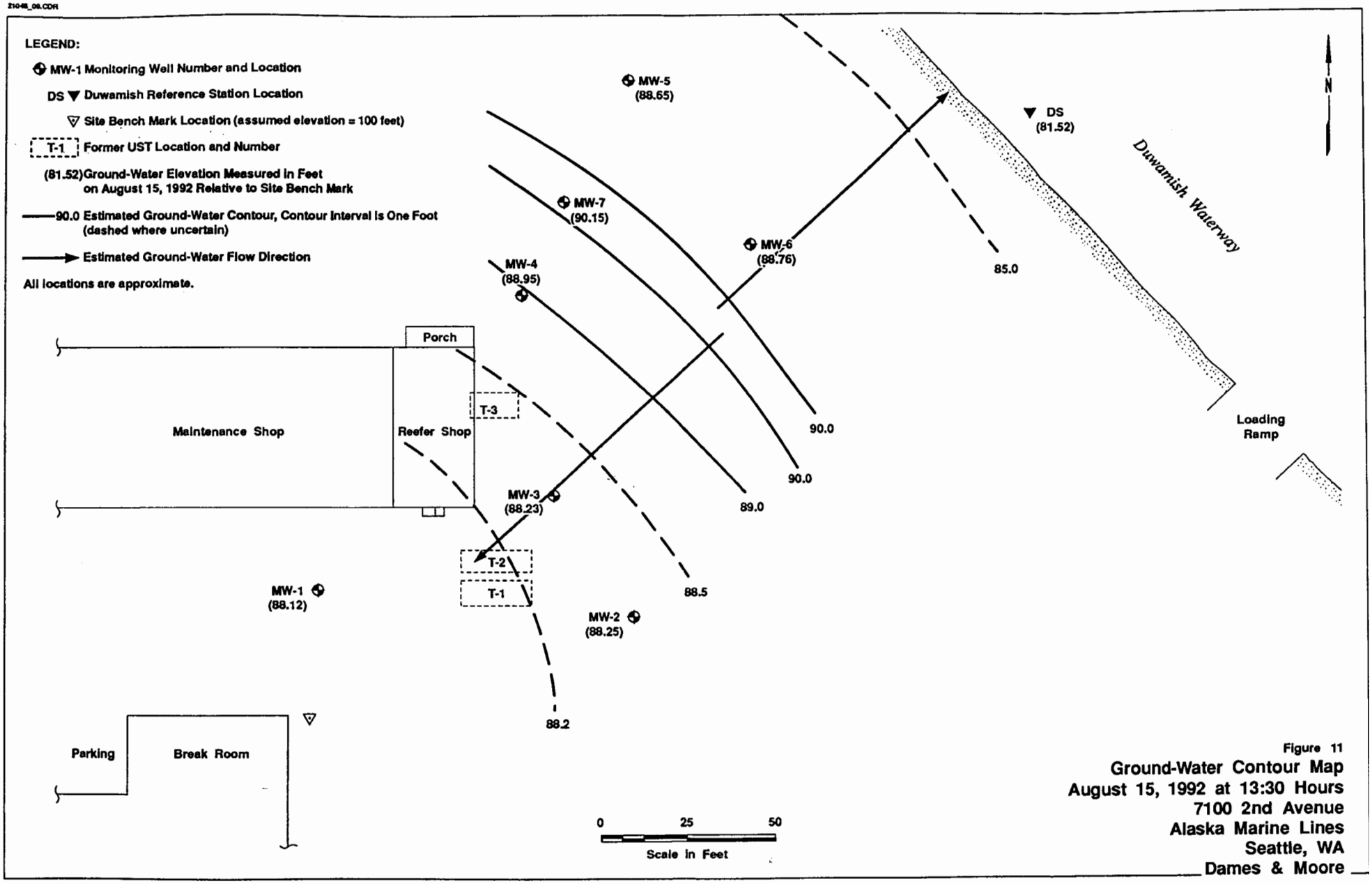



Figure 11
Ground-Water Contour Map
August 15, 1992 at 13:30 Hours
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21048-006-005

21048_10.CDR

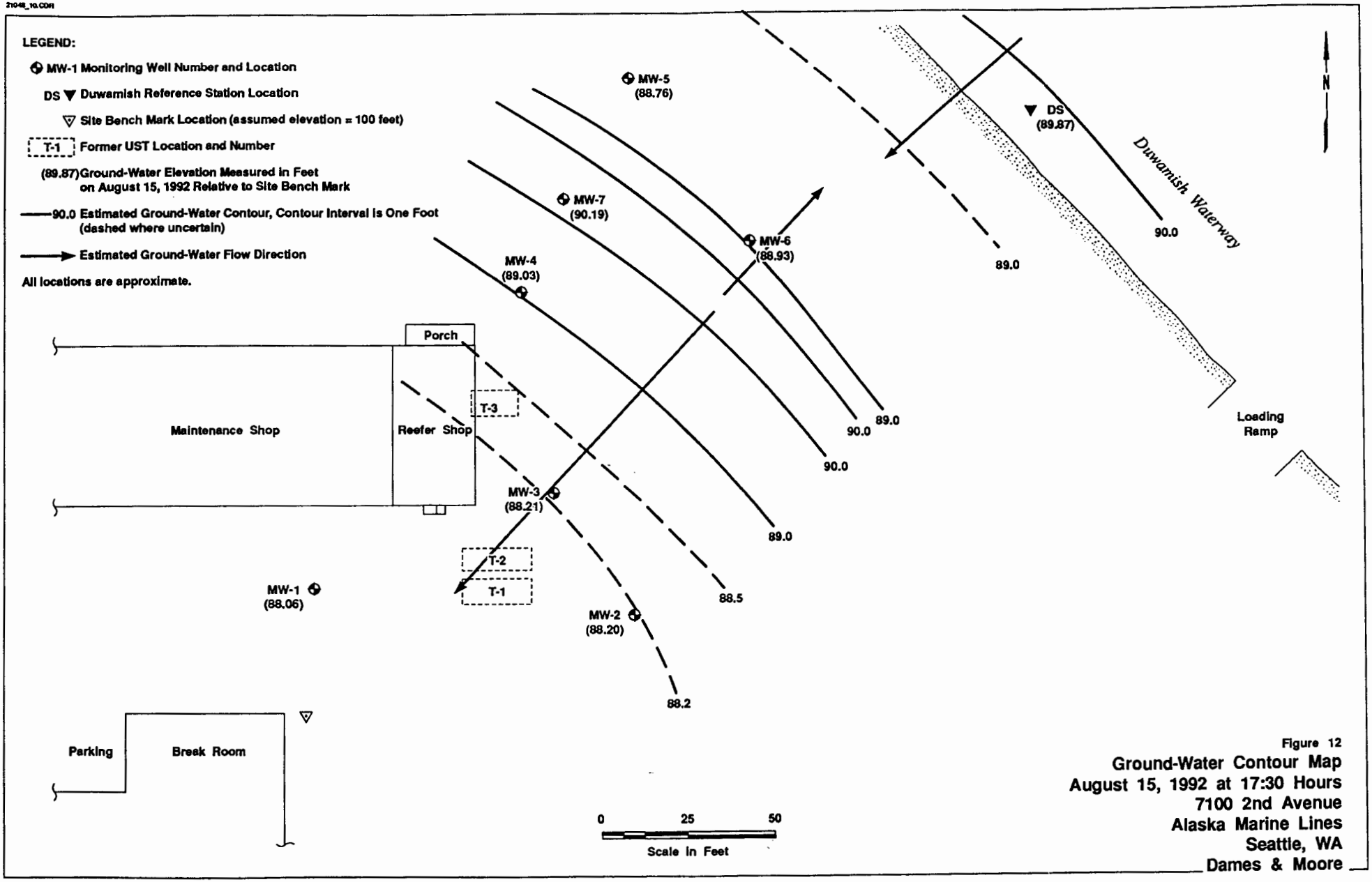



Figure 12
Ground-Water Contour Map
August 15, 1992 at 17:30 Hours
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21048-006-005

21048_11.CDR

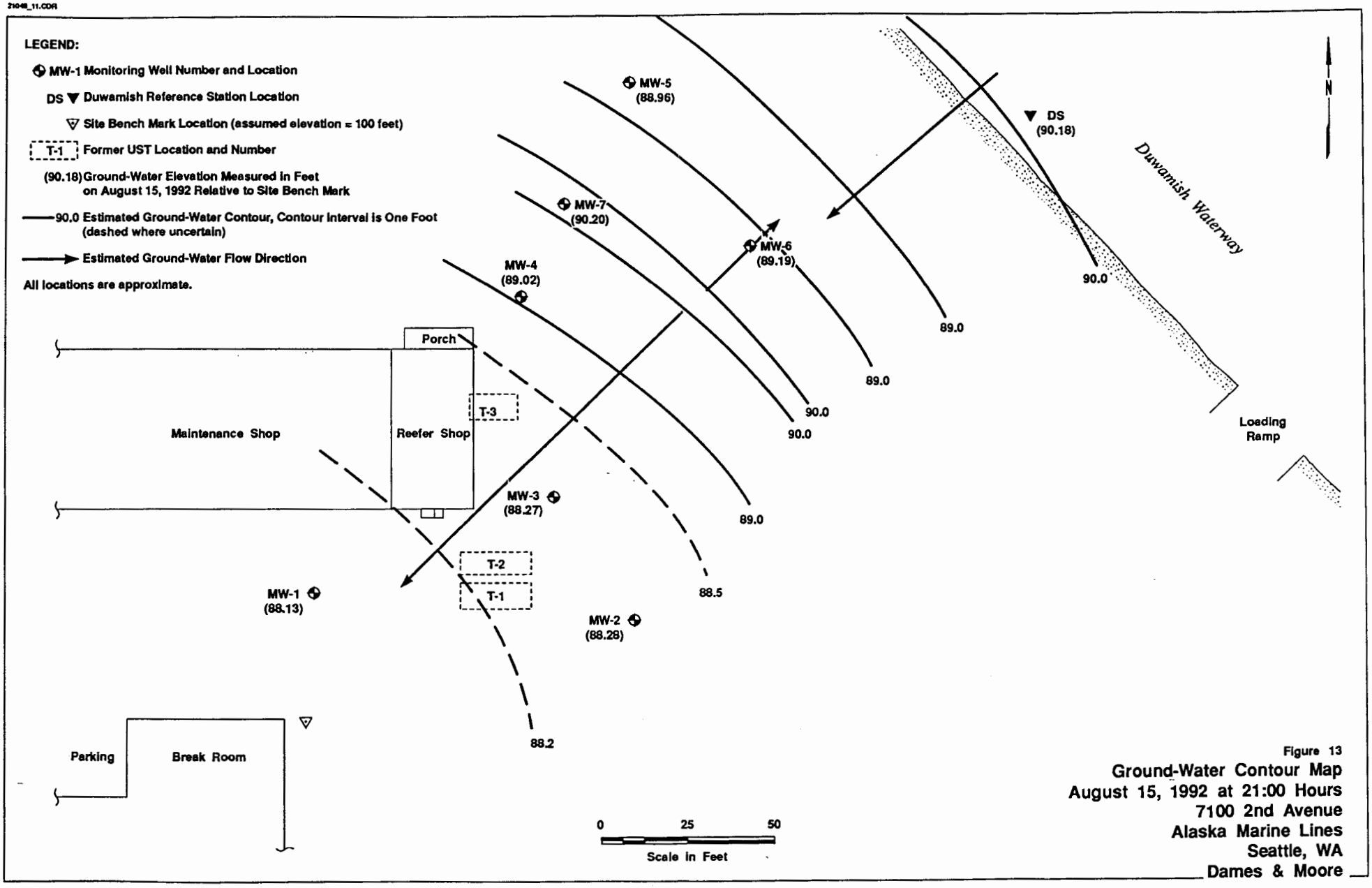



Figure 13
Ground-Water Contour Map
August 15, 1992 at 21:00 Hours
7100 2nd Avenue
Alaska Marine Lines
Seattle, WA
Dames & Moore

Job No. 21048-006-005

# APPENDIX A
# GROUND-WATER SAMPLING DATA FOR FIRST, SECOND, AND THIRD QUARTERLY SAMPLING EVENTS

TABLE 1
GROUND-WATER SAMPLING DATA
THIRD QUARTERLY SAMPLING EVENT
7100 2nd Avenue
Alaska Marine Lines

| WELL NO. | DATE | TIME | pH (-log $H^+$) | T (°C) | SC (µS) | Well Vol (mV) | Purge Vol (gal) | Method | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| MW1 | 4/09/92 | 08:38 | 7.35 | 13.3 | -23.6 | 5.8 | 18 | BK Pump | slight hydrocarbon odor; $H_2S$ odor |
| MW2 | 4/09/92 | 08:47 | 7.38 | 13.4 | -24.8 | 6.4 | 18 | BK Pump | strong $H_2S$ odor |
| MW3 | 4/09/92 | 08:30 | 7.93 | 13.2 | -52.3 | 6.5 | 18 | BK Pump | strong hydrocarbon odor; $H_2S$ odor |
| MW4 | 4/09/92 | 10:22 | 7.75 | 12.0 | -42.5 | 1.5 | 18 | BK Pump | distinct hydrocarbon odor |
| MW5 | 4/09/92 | 10:10 | 8.02 | 11.7 | -59.0 | 1.7 | 5 | BK Pump | Poor recovery of water in well; $H_2S$ odor |
| MW6 | 4/09/92 | 09:05 | 7.32 | 12.8 | -19.6 | 1.5 | 5 | BK Pump | Poor recovery of water in well; no odor |
| MW7 | 4/09/92 | 09:25 | 7.55 | 11.4 | -30.3 | 2.0 | 5 | BK Pump | Poor recovery of water in well; no odor |

TABLE 1
GROUND-WATER SAMPLING DATA
SECOND QUARTERLY SAMPLING EVENT
7100 2nd Avenue
Alaska Marine Lines

| WELL NO. | DATE | TIME | pH (-log $H^+$) | T (°C) | SC (µS) | Well Vol (gal) | Purge Vol (gal) | Method | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| MW1 | 1/10/92 | 08:30 | 7.10 | 51.7 | 2920 | 5.3 | 15 | BK Pump | yellowish brown color |
| MW2 | 1/10/92 | 08:15 | 6.76 | 56.2 | 1603 | 5.3 | 15 | BK Pump | sulfur odor |
| MW3 | 1/10/92 | 08:50 | 6.83 | 51.7 | 1925 | 4.8 | 15 | BK Pump | strong hydrocarbon odor |
| MW4 | 1/10/92 | 09:00 | 6.84 | 51.5 | 1598 | 5.9 | 12 | BK Pump | strong hydrocarbon odor, grey color |
| MW5 | 1/10/92 | 11:00 | 7.07 | 51.6 | 1890 | 6.4 | 5 | BK Pump | very silty, black color, no odor |
| MW6 | 1/10/92 | 10:05 | 6.70 | 54.1 | 4880 | 7.2 | 13 | BK Pump | sulfur odor, black color, very silty |
| MW7 | 1/10/92 | 09:30 | 6.73 | 52.5 | 1633 | 6.5 | 12 | BK Pump | lots of mud in well |

**TABLE 1**
**GROUND-WATER SAMPLING DATA**
**7100 2nd Avenue**
**Alaska Marine Lines**

| WELL NO. | DATE | TIME | pH (-log $H^+$) | T (°C) | SC (µS) | Well Vol (gal) | Purge Vol (gal) | Method | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| MW1 | 9/5/91 | 16:00 | 7.97 | 17.9 | 3090 | 5.1 | 15.5 | bail | yellow, brown color to $H_2O$ |
| MW2 | 9/5/91 | 11:50 | 7.49 | 17.5 | 1591 | 5.1 | 18 | bail | not noted |
| MW3 | 9/5/91 | 15:05 | 7.94 | 17.7 | 2070 | 5.2 | 18 | bail | yellow, very silty |
| MW4 | 9/5/91 | 13:47 | 7.51 | 17.2 | 1647 | 6.0 | 18 | bail | strong hydrocarbon odor, slightly silty |
| MW5 | 9/5/91 | -- | -- | -- | -- | -- | -- | -- | not sampled |
| MW6 | 9/5/91 | -- | -- | -- | -- | -- | -- | -- | not sampled |
| MW7 | 9/5/91 | 16:47 | 7.30 | 18.0 | 1152 | 1.6 | 5 | bail | sludge laden $H_2O$ fills space between monument and top of casing |