APPENDIX F

BCM

# APPENDIX F

# SURFACE WATER ANALYTICAL RESULTS - PREVIOUS INVESTIGATIONS

BCM

CHESTER ENGINEERS
1981

UNITED STATES STEEL CORPORATION
FAIRLESS WORKS

LABORATORY ANALYSES OF SURFACE WATER IN BORROW PITS

| SAMPLE B.P. NO. | DATE | pH | ALKALINITY, mg/l $CaCO_3$ | COD, mg/l | TOTAL DISSOLVED SOLIDS, mg/l | AMMONIA, mg/l N | CHLORIDES, mg/l Cl | TOTAL CYANIDE, mg/l CN | PHENOL, mg/l PhOH | SOLUBLE LEAD, mg/l Pb | SOLUBLE CADMIUM, mg/l Cd | SOLUBLE CHROMIUM, mg/l Cr | SOLUBLE NICKEL, mg/l Ni | SOLUBLE COPPER, mg/l Cu | SOLUBLE ZINC, mg/l Zn | SOLUBLE MANGANESE, mg/l Mn | SOLUBLE IRON, mg/l Fe | OIL AND GREASE, mg/l | ARSENIC, mg/l As | TOTAL ORGANIC CARBON, mg/l C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7/22/80 | 7.7 | 48 | 0 | 161 | 1.00 | 95 | 0.004 | 0.01 | 0.0 | 0.0 | 0.02 | 0.0 | 0.0 | 0.0 | 0.00 | 0.02 | 0.8 | | 7 |
| 2 | 7/22/80 | | | | | | | | | | | | | | | | | | | 14 |
| 3A | 7/22/80 | 6.9 | 38 | 30 | 427 | 0.20 | 125 | 0.002 | 0.338 | 0.21 | 0.20 | 0.0 | 0.0 | 0.0 | 11.40 | 2.4 | 0.0 | 1.0 | 0.00 | 5 |
| 3B | 7/22/80 | 7.7 | 346 | 20 | 626 | 17.0 | 130 | 1.26 | 0.016 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.12 | 0.10 | 0.87 | 1.4 | 0.00 | 13 |
| 3C | 7/22/80 | 8.7 | 56 | 20 | 144 | 0.10 | 30 | 0.002 | | | | 0.0 | | | | 0.00 | 0.04 | 1.6 | 0.00 | 5 |
| 3D | 7/22/80 | 10.0 | 40 | 26 | 232 | 0.48 | 85 | 0.031 | 0.00 | 0.0 | 0.0 | 0.008 | 0.0 | 0.0 | 0.03 | 0.00 | 0.0 | 0.6 | 0.00 | 5 |
| 3E | 7/22/80 | 9.8 | 36 | 10 | 328 | 0.48 | 160 | 0.265 | 0.079 | 0.0 | 0.0 | 0.06 | 0.0 | 0.0 | 0.0 | 0.00 | 0.12 | 0.6 | 0.00 | 9 |
| 3F | 7/22/80 | 10.1 | 20 | 40 | 573 | 0.68 | 60 | 0.500 | 0.00 | 0.0 | 0.0 | 0.01 | 0.0 | 0.0 | 0.05 | 0.00 | 0.21 | 0.4 | 0.00 | 15 |
| 3G | 7/22/80 | 9.6 | 54 | 30 | 297 | 0.08 | 80 | 0.059 | 0.008 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.04 | 1.2 | 0.00 | 12 |
| 3H | 7/22/80 | 8.2 | 248 | 20 | 500 | 11.0 | 80 | 0.003 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.50 | 1.0 | 0.00 | 5 |
| 4 | 7/23/80 | 9.6 | 205 | 30 | 372 | 0.42 | 70 | 0.099 | 0.02 | 0.0 | 0.0 | 0.0 | 0.0 | 0.04 | 0.0 | 0.00 | 0.0 | 0.4 | 0.00 | 10 |
| 5 | 7/22/80 | 7.4 | 50 | 20 | 184 | 0.25 | 135 | 0.13 | 0.004 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.10 | 1.2 | 0.0 | 0.8 | 0.00 | 10 |
| 5A | 7/22/80 | 6.5 | 3 | 20 | 1120 | 6.0 | 10 | 0.30 | 0.007 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.10 | 0.0 | 1.6 | 0.00 | 8 |
| 8A | 7/22/80 | 6.8 | 10 | 130 | 452 | 60.0 | 105 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.03 | 3.6 | 0.08 | 1.4 | 0.00 | 31 |
| 10B | 7/22/80 | 8.3 | 46 | 20 | 219 | 0.17 | 145 | 0.02 | 0.257 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 1.4 | 0.00 | 7 |
| 13A | 7/22/80 | 6.1 | 40 | 80 | 240 | 1.62 | 285 | 0.25 | 1.62 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.03 | 0.0 | 1.2 | 0.00 | 65 |
| 14A | 7/21/80 | 8.0 | 308 | 1525 | 900 | 2960 | | 5.0 | 43.00 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.00 | 8.3 | 3.6 | 0.00 | 674 |
| 14B | 7/21/80 | 7.2 | 880 | 1525 | 3880 | 1430 | | 0.25 | 1430.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.00 | 0.0 | 5.8 | 0.00 | 368 |
| 17 | 7/21/80 | 6.5 | 61 | 1200 | 640 | 600 | | 0.75 | 280.0 | | | | | | | 0.00 | 0.29 | 1.0 | 0.00 | 313 |
| 21 | 7/21/80 | 7.9 | 68 | 10 | 153 | 0.12 | 140 | 0.004 | 0.062 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.06 | 0.15 | 0.04 | 0.4 | 0.00 | 22 |
| 27 | 7/22/80 | 8.0 | 142 | 120 | 878 | 1.30 | 191 | 0.002 | 0.020 | 0.0 | 0.0 | 0.0 | 0.0 | 0.03 | 0.02 | 0.05 | | 0.2 | 0.00 | |
| 28 | | | | | | | | | 0.004 | | | | | | | | | | | |
| 28A | 7/23/80 | 6.5 | 75 | 130 | 682 | 2.30 | 275 | 0.034 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.04 | 0.4 | 0.00 | 7 |
| 28B | 7/23/80 | 6.2 | 68 | 10 | 424 | 0.20 | 105 | 0.002 | 0.046 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.03 | 0.06 | 1.5 | 0.8 | 0.00 | 31 |
| 30 | | | | | | 0.08 | | | | | | | | | | | | | | |
| 31 | 7/21/80 | 7.4 | 90 | | 275 | 0.08 | 35 | 0.004 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.07 | 0.10 | 0.0 | 0.6 | 0.00 | 13 |
| 35 | 7/22/80 | 7.5 | 196 | 840 | 461 | 3.30 | 45 | 0.35 | 10.15 | 0.0 | 0.0 | 0.06 | 0.0 | 0.0 | 0.10 | 0.00 | 1.3 | 2.2 | 0.00 | |
| 35A | 7/22/80 | 7.1 | 100 | 120 | 334 | 1.10 | 40 | 0.35 | 3.27 | 0.0 | 0.0 | 0.02 | 0.0 | 0.0 | 0.0 | 0.04 | 0.04 | 0.4 | 0.00 | 48 |
| 35B | 7/22/80 | | | | | | | 0.35 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 16.7 | 5.4 | 0.00 | 43 |
| 36 | | | | | 297 | 0.48 | | | | | | | | | | | | | | |
| 38 | | | | | | | | | | | | | | | | | | | | |
| NT | | | | | | | | | | | | | | | | | | 3.4 | 0.00 | |
| NT-A | 7/23/80 | 5.5 | 15 | 28 | 164 | 0.14 | 25 | 0.005 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.04 | | 0.00 | 26 |
| NT-B | 7/23/80 | 8.1 | 102 | 60 | 188 | 0.03 | 30 | 0.002 | 0.004 | 0.0 | 0.0 | 0.02 | 0.0 | 0.0 | 0.0 | 0.02 | 0.02 | 0.8 | 0.00 | 12 |
| NT-1 | 7/22/80 | 8.5 | 76 | 32 | 249 | 0.03 | 35 | 0.003 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 3.8 | 0.00 | 27 |
| NT-3A | 7/22/80 | 1.0 | | 840 | 5858 | 0.98 | 210 | 0.036 | 1.28 | 0.50 | | 4.0 | 0.60 | 0.44 | | 0.00 | 2.34 | | 0.00 | 118 |
| NT-3B | 7/22/80 | 7.3 | 52 | 840 | 2075 | 0.42 | 435 | 0.003 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.06 | 0.00 | 0.04 | | 0.00 | 32 |
| NT-3C | 7/22/80 | 8.3 | 50 | 10 | 230 | 0.06 | 45 | 0.004 | 0.35 | 0.0 | 0.0 | 0.01 | 0.0 | 0.0 | 0.0 | 0.02 | 0.04 | | 0.00 | 10 |
| River Downstream | | | | | | | | | | | | | | | | | | | | |
| 1001 | 8/6/80 | 3.0 | | 10 | | 0.11 | 20 | 0.0 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.07 | 0.01 | 0.37 | | 0.00 | 8 |
| River Upstream | | | | | | | | | | | | | | | | | | | | |
| 1002 | 8/6/80 | | | 10 | | 0.06 | 17 | 0.0 | 0.00 | | | | | | | 0.03 | 0.00 | | 0.00 | 5 |

UNITED STATES STEEL CORPORATION
FAIRLESS WORKS

ANALYSES OF SURFACE WATER IN BORROW PITS
( Limited Resamples)

| BORROW PIT NO. | DATE | pH | ALKALINITY, mg/l $CaCO_3$ | COD, mg/l | SUSPENDED SOLIDS, mg/l | DISSOLVED SOLIDS, mg/l | AMMONIA, mg/l N | CHLORIDES, mg/l Cl | CYANIDES, mg/l CN | PHENOLS, mg/l PhOH | LEAD, mg/l Pb | CADMIUM, mg/l Cd | CHROMIUM, mg/l Cr | NICKEL, mg/l Ni | COPPER, mg/l Cu | ZINC, mg/l Zn | OIL AND GREASE, mg/l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Canal #2 | 11-3-80 | 6.3 | 34 | 160.0 | 7 | 223 | 9.5 | 65.0 | 0.073 | 0.003 | 0 | 0 | 0.0 | 0 | 0 | 0.08 | 1.0 |
| Canal #2N | 11-3-80 | 8.0 | 102 | 180.0 | 15 | 156 | 3.6 | 28.0 | 0.003 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0.2 |
| NT-3B | 11-3-80 | 6.6 | 54 | 48.0 | 13 | 1518 | 0.55 | 450.0 | 0 | 0.006 | 0 | 0 | 0.0 | 0 | 0.02 | 0.02 | 0 |
| 8A | 11-3-80 | 6.7 | 20 | 38.0 | 4 | 537 | 80.0 | 45.0 | 0.021 | 0.018 | 0 | 0 | 0.0 | 0 | 0 | 0.06 | 0 |
| 10B | 10-31-80 | 8.0 | 52 | 100.0 | 40 | 282 | 0.54 | 9.0 | 0.22 | | | | 0.0 | | | | |
| 13A | 10-31-80 | 6.6 | 128 | 800.0 | 48 | 2353 | 510 | 730 | 1.5 | 3.98 | | | | | | | 1.6 |
| 14A | 10-31-80 | 8.4 | 1270 | 2500 | 60 | 11,015 | 516 | 8150.0 | 8.5 | 2090 | | | | | | | 38.2 |
| 14B | 10-31-80 | 9.6 | 2040 | 2200 | 34 | 8769 | 396 | 3550.0 | 0.50 | 86.5 | | | | | | | 14.6 |
| 17 | 10-31-80 | 7.5 | 122 | 2000 | 31 | 6110 | 230 | 64.0 | 0.50 | 2.0 | | | | | | | 12 |
| 27 | 11-3-80 | 7.1 | 164 | 20.0 | 6 | 760 | 0.68 | 186.0 | 0.002 | 0 | 0 | 0 | 0.0 | 0 | 0 | 0 | 0 |
| 28A | 11-3-80 | 7.1 | 98 | 40.0 | 10 | 693 | 9.4 | 227.0 | 0.003 | 0.006 | 0 | 0 | 0.0 | 0 | 0 | 0.04 | 0 |
| 31 | 10-31-80 | 7.1 | 96 | 85.0 | 12 | 273 | 1.7 | 16.0 | 0.003 | 0 | | | 0 | | | | 1.8 |
| 31A | 10-31-80 | 6.4 | 26 | 40.0 | 19 | 302 | 0.35 | 7.0 | 0.005 | 0.011 | | | 0 | | | | 0 |
| 37 | 10-31-80 | 6.9 | 154 | 38.0 | 246 | 152 | 2.7 | 22.0 | 0.002 | 0.004 | | | 0 | | | | 0.2 |
| 39 | 10-31-80 | 6.5 | 44 | 94.0 | 16 | 251 | 0.23 | 6.0 | 0.002 | 0.003 | | | 0 | | | | 0.8 |
| 40 | 10-31-80 | 2.8 | | 100.0 | 75 | 4921 | 11.0 | 25.0 | 0.002 | 0.013 | | | 0 | | | | 0.2 |
| Outfall 1002 | 10-31-80 | | | 60.0 | | | | 27.0 | | | | | | | | | |

U.S. STEEL CORPORATION
FAIRLESS WORKS

TABLE VI-8

*WATER LEACHATE ANALYSES

| Source | B.P. #3H | B.P. #3B | B.P. #5A | B.P. #8 | B.P. #9 |
|---|---|---|---|---|---|
| Log No. 80- | 6917 | 6916 | 6918 | 6907 | 6908 |
| Date Collected | 10/29/80 | 10/29/80 | 10/29/80 | 10/28/80 | 10/28/80 |
| pH | 9.5 | 8.1 | 8.0 | 7.0 | 8.7 |
| Total Dissolved Solids, mg/l | 290 | 160 | 273 | 77 | 113 |
| Dissolved Mineral Solids, mg/l | 267 | 110 | 243 | 60 | 67 |
| Dissolved Volatile Solids, mg/l | 23 | 50 | 30 | 17 | 46 |
| COD, mg/l | 15.6 | 0.4 | 1.2 | 0.8 | 6.8 |
| Freon Extractables, mg/l | 9 | 12 | 12 | 3 | 3 |
| Total Carbon, mg/l C | 15 | 17 | 11 | 1 | 13 |
| Inorganic Carbon, mg/l C | 7 | 14 | 10 | 1 | 10 |
| Total Organic Carbon, mg/l C | 8 | 3 | 1 | <1 | 3 |
| Specific Conductance, µmhos/cm | 432 | 260 | 386 | 101 | 166 |
| Ammonia, mg/l N | 0.56 | 0.98 | 0.72 | 0.22 | 0.06 |
| Phenol, mg/l PhOH | 0.012 | 0.034 | 0.065 | 0.005 | 0.007 |
| Total Cyanide, mg/l CN | 1.56 | 0.041 | 0.025 | <0.005 | <0.005 |
| Arsenic, mg/l As | 0.0018 | <0.0005 | <0.0005 | 0.0024 | 0.0006 |
| Cadmium, mg/l Cd | 0.01 | 0.03 | <0.01 | 0.02 | 0.01 |
| Copper, mg/l Cu | <0.01 | 0.01 | <0.01 | 0.01 | 0.01 |
| Chromium, mg/l Cr | <0.01 | <0.01 | <0.01 | <0.01 | 0.01 |
| Lead, mg/l Pb | 0.04 | <0.02 | <0.02 | <0.02 | <0.02 |
| Mercury, mg/l Hg | 0.0002 | 0.0004 | <0.0002 | 0.0006 | 0.0004 |
| Molybdenum, mg/l Mo | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Nickel, mg/l Ni | <0.02 | <0.02 | 0.02 | <0.02 | <0.02 |
| Selenium, mg/l Se | 0.0535 | 0.0013 | 0.0029 | <0.0005 | 0.0034 |
| Silver, mg/l Ag | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

*ASTM METHOD A

2813-01
12-9-80

TABLE VI-8 (Continued)

*WATER LEACHATE ANALYSES

| Source | B.P. #10B | B.P. #13 | B.P. #13A | B.P. #14A | B.P. #15 |
|---|---|---|---|---|---|
| Log No. 80- | 6919 | 6909 | 6923 | 6924 | 6910 |
| Date Collected | 10/29/80 | 10/28/80 | 10/29/80 | 10/30/80 | 10/28/80 |
| pH | 8.2 | 9.8 | 7.8 | 8.9 | 7.9 |
| Total Dissolved Solids, mg/l | 277 | 263 | 230 | 2073 | 673 |
| Dissolved Mineral Solids, mg/l | 233 | 213 | 130 | 1293 | 433 |
| Dissolved Volatile Solids, mg/l | 44 | 50 | 100 | 780 | 240 |
| COD, mg/l | 9.2 | 6.8 | 40 | 872 | <0.4 |
| Freon Extractables, mg/l | 10 | 11 | 9 | 95 | 9 |
| Total Carbon, mg/l C | 22 | 9 | 37 | 705 | 7 |
| Inorganic Carbon, mg/l C | 17 | 4 | 23 | 62 | 4 |
| Total Organic Carbon, mg/l C | 5 | 5 | 14 | 643 | 3 |
| Specific Conductance, μmhos/cm | 388 | 380 | 310 | 3320 | 720 |
| Ammonia, mg/l N | 0.12 | 0.12 | 30 | 900 | 0.14 |
| Phenol, mg/l PhOH | 0.005 | 0.020 | 0.320 | 206 | 0.005 |
| Total Cyanide, mg/l CN | 0.005 | 0.021 | 0.045 | 1.26 | 0.014 |
| Arsenic, mg/l As | <0.0005 | 0.0018 | 0.0012 | 0.0489 | <0.0005 |
| Cadmium, mg/l Cd | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 |
| Copper, mg/l Cu | 0.01 | 0.01 | 0.01 | 0.08 | 0.01 |
| Chromium, mg/l Cr | <0.01 | <0.01 | <0.01 | 0.24 | <0.01 |
| Lead, mg/l Pb | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| Mercury, mg/l Hg | <0.0002 | 0.0002 | 0.0009 | 0.0020 | 0.0004 |
| Molybdenum, mg/l Mo | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Nickel, mg/l Ni | <0.02 | 0.04 | <0.02 | 0.06 | <0.02 |
| Selenium, mg/l Se | 0.0008 | 0.0013 | 0.0013 | 0.0214 | 0.0070 |
| Silver, mg/l Ag | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

*ASTM METHOD A

2813-01
12-9-80

TABLE VI-8 (Continued)

*WATER LEACHATE ANALYSES

| Source | B.P. #17 | B.P. #20 | B.P. #27 | Well #27 | Well #29 | Well #30 |
|---|---|---|---|---|---|---|
| Log No. 80- | 6922 | 6911 | 6921 | 6925 | 6930 | 6931 |
| Date Collected | 10/30/80 | 10/28/80 | 10/30/80 | 11/11/80 | 11/11/80 | 11/11/80 |
| pH | 7.5 | 8.0 | 7.9 | 7.6 | 7.7 | 8.1 |
| Total Dissolved Solids, mg/l | 1507 | 213 | 960 | 417 | 290 | 167 |
| Dissolved Mineral Solids, mg/l | 1307 | 110 | 883 | 317 | 207 | 80 |
| Dissolved Volatile Solids, mg/l | 200 | 103 | 77 | 100 | 83 | 87 |
| COD, mg/l | 45 | 21 | 16 | 12.4 | 10.8 | 8.0 |
| Freon Extractables, mg/l | 6 | 14 | 12 | 13 | 3.0 | 2.0 |
| Total Carbon, mg/l C | 38 | 16 | 17 | 8 | 9 | 6 |
| Inorganic Carbon, mg/l C | 20 | 5 | 8 | 4 | 7 | 1 |
| Total Organic Carbon, mg/l C | 18 | 11 | 9 | 4 | 2 | 5 |
| Specific Conductance, μmhos/cm | 1770 | 233 | 991 | 572 | 391 | 193 |
| Ammonia, mg/l N | 3.5 | 0.55 | 0.12 | 75 | 0.39 | 0.05 |
| Phenol, mg/l PhOH | 0.184 | 0.005 | <0.002 | <0.002 | 0.172 | 0.004 |
| Total Cyanide, mg/l CN | 0.015 | 0.021 | <0.005 | <0.005 | <0.005 | <0.005 |
| Arsenic, mg/l As | 0.0012 | 0.0048 | 0.0021 | 0.0061 | 0.0006 | 0.0030 |
| Cadmium, mg/l Cd | 0.03 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 |
| Copper, mg/l Cu | 0.01 | 0.04 | 0.01 | 0.04 | 0.01 | 0.02 |
| Chromium, mg/l Cr | <0.01 | 0.01 | <0.01 | 0.02 | <0.01 | 0.01 |
| Lead, mg/l Pb | <0.02 | 0.03 | <0.02 | <0.02 | <0.02 | <0.02 |
| Mercury, mg/l Hg | 0.0003 | 0.0008 | <0.0002 | 0.0003 | 0.0002 | <0.0002 |
| Molybdenum, mg/l Mo | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |
| Nickel, mg/l Ni | 0.05 | 0.02 | <0.02 | 0.02 | <0.02 | <0.02 |
| Selenium, mg/l Se | 0.0292 | 0.0013 | 0.0008 | 0.0010 | <0.0005 | <0.0005 |
| Silver, mg/l Ag | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

*ASTM METHOD A

2813-01
12-9-80

BCM

# BAKER/TSA

TABLE 39

STANDING WATER ANALYSES

BORROW PIT NT-3

| Location | A* | B* | C* |
|---|---|---|---|
| Date | 7/22/80 | 7/22/80 | 7/22/80 |
| pH | 1.0 | 7.3 | 8.3 |
| Total Dissolved Solids, mg/l | 5858 | 2075 | 230 |
| COD, mg/l | 840 | 840 | 10 |
| Oil and Grease, mg/l | - | - | - |
| Total Organic Carbon, mg/l | 118 | 32 | 10 |
| Chlorides, mg/l | 210 | 435 | 45 |
| Specific Conductance, umhos/cm | - | - | - |
| Ammonia, mg/l | 0.98 | 0.42 | 0.06 |
| Phenol, mg/l | 1.28 | 0.00 | 0.35 |
| Total Cyanide, mg/l | 0.036 | 0.003 | 0.004 |
| Arsenic, mg/l | 0.00 | 0.00 | 0.00 |
| Cadmium, mg/l | - | 0.0 | 0.0 |
| Copper, mg/l | 0.44 | 0.0 | 0.0 |
| Chromium, mg/l | 4.0 | 0.0 | 0.01 |
| Lead, mg/l | 0.50 | 0.0 | 0.0 |
| Mercury, mg/l | - | - | - |
| Molybdenum, mg/l | - | - | - |
| Nickel, mg/l | 0.60 | 0.0 | 0.0 |
| Selenium, mg/l | - | - | - |
| Silver, mg/l | - | - | - |
| Zinc, mg/l | - | 0.06 | 0.0 |
| Manganese, mg/l | 0.00 | 0.00 | 0.02 |
| Iron, mg/l | 2.34 | 0.04 | 0.04 |
| Alkalinity ($CaCO_3$), mg/l | - | 52 | 50 |

*See Figure 26 for approximate sample location.

BCM

GOLDER ASSOCIATES

SURFACE WATER

WATER SAMPLES

Enseco

# PRIORITY POLLUTANT LIST ORGANOCHLORINE PESTICIDES/PCBs

## Enseco Method 608/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-8A

Laboratory I.D.: G01-45 Enseco I.D.: NA

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: 09/17/87 Analyzed: 09/23/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Alpha-BHC | ND | ug/L | 0.05 |
| Beta-BHC | ND | ug/L | 0.05 |
| Delta-BHC | ND | ug/L | 0.05 |
| Gamma-BHC (Lindane) | ND | ug/L | 0.05 |
| Heptachlor | ND | ug/L | 0.05 |
| Aldrin | ND | ug/L | 0.05 |
| Heptachlor Epoxide | ND | ug/L | 0.05 |
| Endosulfan I | ND | ug/L | 0.05 |
| Dieldrin | ND | ug/L | 0.1 |
| 4,4'-DDE | ND | ug/L | 0.1 |
| Endrin | ND | ug/L | 0.1 |
| Endosulfan II | ND | ug/L | 0.1 |
| 4,4'-DDD | ND | ug/L | 0.1 |
| Endosulfan Sulfate | ND | ug/L | 0.1 |
| 4,4'-DDT | ND | ug/L | 0.1 |
| Endrin Ketone | ND | ug/L | 0.1 |
| Methoxychlor | ND | ug/L | 0.5 |
| Chlordane | ND | ug/L | 0.5 |
| Toxaphene | ND | ug/L | 1 |
| Aroclor-1016 | ND | ug/L | 0.5 |
| Aroclor-1221 | ND | ug/L | 0.5 |
| Aroclor-1232 | ND | ug/L | 0.5 |
| Aroclor-1242 | ND | ug/L | 0.5 |
| Aroclor-1248 | ND | ug/L | 0.5 |
| Aroclor-1254 | ND | ug/L | 1 |
| Aroclor-1260 | ND | ug/L | 1 |

ND = Not Detected
NA = Not Applicable

Enseco

# PRIORITY POLLUTANT LIST VOLATILE ORGANICS

## Enseco Method 624/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-8A

Laboratory I.D.: G01-45 Enseco I.D.: NA

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: NA Analyzed: 09/15/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Chloromethane | ND | ug/L | 10 |
| Bromomethane | ND | ug/L | 10 |
| Vinyl Chloride | ND | ug/L | 10 |
| Chloroethane | ND | ug/L | 10 |
| Methylene Chloride | ND | ug/L | 25 |
| 1,1-Dichloroethene | ND | ug/L | 5 |
| 1,1-Dichloroethane | ND | ug/L | 5 |
| trans-1,2-Dichloroethane | ND | ug/L | 5 |
| Chloroform | ND | ug/L | 5 |
| 1,2-Dichloroethane | ND | ug/L | 5 |
| 1,1,1-Trichloroethane | ND | ug/L | 5 |
| Carbon tetrachloride | ND | ug/L | 5 |
| Bromodichloromethane | ND | ug/L | 5 |
| 1,2-Dichloropropane | ND | ug/L | 5 |
| trans-1,3-Dichloropropene | ND | ug/L | 5 |
| Trichloroethene | ND | ug/L | 5 |
| Dibromochloromethane | ND | ug/L | 5 |
| 1,1,2-Trichloroethane | ND | ug/L | 5 |
| Benzene | ND | ug/L | 5 |
| cis-1,3-Dichloropropene | ND | ug/L | 5 |
| 2-Chloroethyl vinyl ether | ND | ug/L | 10 |
| Bromoform | ND | ug/L | 5 |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 5 |
| Tetrachloroethene | ND | ug/L | 5 |
| Toluene | ND | ug/L | 5 |
| Chlorobenzene | ND | ug/L | 5 |
| Ethyl benzene | ND | ug/L | 5 |

ND = Not Detected
NA = Not Applicable

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# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc

Project: G01
Matrix: Water
Fraction: VOA

The following sample had no non-HSL compounds at greater than 10 percent of the response of the internal standard 1,4-difluorobenzene:

| CLE I.D. | Client I.D. |
|---|---|
| G01-45 | BP-8A |

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# PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS

## Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-8A

Laboratory I.D.: 31473-03 Enseco I.D.: G01-45

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Phenol | ND | ug/L | 10 |
| bis(2-Chloroethyl)ether | ND | ug/L | 10 |
| 2-Chlorophenol | ND | ug/L | 10 |
| 1,3-Dichlorobenzene | ND | ug/L | 10 |
| 1,4-Dichlorobenzene | ND | ug/L | 10 |
| 1,2-Dichlorobenzene | ND | ug/L | 10 |
| bis(2-Chloroisopropyl)ether | ND | ug/L | 10 |
| N-Nitroso-dipropylamine | ND | ug/L | 10 |
| Hexachloroethane | ND | ug/L | 10 |
| Nitrobenzene | ND | ug/L | 10 |
| Isophorone | ND | ug/L | 10 |
| 2-Nitrophenol | ND | ug/L | 10 |
| 2,4-Dimethylphenol | ND | ug/L | 10 |
| bis(2-Chloroethoxy)methane | ND | ug/L | 10 |
| 2,4-Dichlorophenol | ND | ug/L | 10 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 10 |
| Naphthalene | ND | ug/L | 10 |
| Hexachlorobutadiene | ND | ug/L | 10 |
| 4-Chloro-3-methylphenol | ND | ug/L | 10 |
| Hexachlorocyclopentadiene | ND | ug/L | 10 |
| 2,4,6-Trichlorophenol | ND | ug/L | 10 |
| 2-Chloronaphthalene | ND | ug/L | 10 |
| Dimethyl phthalate | ND | ug/L | 10 |
| Acenaphthylene | ND | ug/L | 10 |
| Acenaphthene | ND | ug/L | 10 |
| 2,4-Dinitrophenol | ND | ug/L | 50 |
| 4-Nitrophenol | ND | ug/L | 50 |
| 2,4-Dinitrotoluene | ND | ug/L | 10 |
| 2,6-Dinitrotoluene | ND | ug/L | 10 |
| Diethyl phthalate | ND | ug/L | 10 |
| 4-Chlorophenyl phenyl ether | ND | ug/L | 10 |
| Fluorene | ND | ug/L | 10 |
| 4,6-Dinitro-2-methylphenol | ND | ug/L | 50 |
| 1,2-Diphenylhydrazine | ND | ug/L | 10 |
| N-Nitrosodiphenylamine | ND | ug/L | 10 |
| 4-Bromophenyl phenyl ether | ND | ug/L | 10 |

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PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS Cont.

Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-8A

Laboratory I.D.: 31473-03 Enseco I.D.: G01-45

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Hexachlorobenzene | ND | ug/L | 10 |
| Pentachlorophenol | ND | ug/L | 50 |
| Phenanthrene | ND | ug/L | 10 |
| Anthracene | ND | ug/L | 10 |
| Di-n-butyl phthalate | ND | ug/L | 10 |
| Fluoranthene | ND | ug/L | 10 |
| Pyrene | ND | ug/L | 10 |
| Butyl benzyl phthalate | ND | ug/L | 10 |
| 3,3'-Dichlorobenzidine | ND | ug/L | 20 |
| Benzo(a)anthracene | ND | ug/L | 10 |
| bis(2-Ethylhexyl)phthalate | ND | ug/L | 10 |
| Chrysene | ND | ug/L | 10 |
| Di-n-octyl phthalate | ND | ug/L | 10 |
| Benzo(b)fluoranthene | ND | ug/L | 10 |
| Benzo(k)fluoranthene | ND | ug/L | 10 |
| Benzo(a)pyrene | ND | ug/L | 10 |
| Indeno(1,2,3-c,d)pyrene | ND | ug/L | 10 |
| Dibenzo(a,h)anthracene | ND | ug/L | 10 |
| Benzo(g,h,i)perylene | ND | ug/L | 10 |

ND = Not Detected

Enseco

# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc.
Sample I.D.: BP-8A

Project: G01
CLE I.D.: G01-45
CAL I.D.: 31473-03
Fraction: ABN

| Compound | Scan | Probability[1] | Estimated Concentration[2] (ug/L) |
|---|---|---|---|
| Unknown (chlorinated) | 860 | - | 14 |

1 A = High B = Moderate

2 Estimated concentration based on response of $d_{10}$-phenanthrene.

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# PRIORITY POLLUTANT LIST

## TOTAL METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-8A

Laboratory I.D.: 64564-001 Enseco I.D.: G01-45

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/25/87 |
| Arsenic | 0.011 | mg/L | 0.003 | 206.2 | 09/28/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/25/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/25/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/25/87 |
| Copper | 0.008 | mg/L | 0.006 | 200.7 | 09/25/87 |
| Lead | ND | mg/L | 0.002 | 239.2 | 09/28/87 |
| Mercury | ND | mg/L | 0.0001 | 245.1 | 09/17/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/25/87 |
| Selenium | ND | mg/L | 0.002 | 270.2 | 09/28/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/25/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/28/87 |
| Zinc | 0.02 | mg/L | 0.01 | 200.7 | 09/25/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST

## DISSOLVED METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-8A

Laboratory I.D.: 64564-001 Enseco I.D.: G01-45

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/23/87 |
| Arsenic | 0.010 | mg/L | 0.003 | 206.2 | 09/29/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/23/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/23/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/23/87 |
| Copper | ND | mg/L | 0.006 | 200.7 | 09/23/87 |
| Lead | ND | mg/L | 0.002 | 239.2 | 09/28/87 |
| Mercury | ND | mg/L | 0.0001 | 245.1 | 09/17/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/23/87 |
| Selenium | 0.002 | mg/L | 0.002 | 270.2 | 09/29/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/23/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/30/87 |
| Zinc | ND | mg/L | 0.01 | 200.7 | 09/23/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST ORGANOCHLORINE PESTICIDES/PCBs

## Enseco Method 608/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-NT3

Laboratory I.D.: G01-50 Enseco I.D.: NA

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/18/87 Analyzed: 09/23/87

| Parameter | Result | Units | Reporting Limit* |
|---|---|---|---|
| Alpha-BHC | ND | ug/L | 0.25 |
| Beta-BHC | ND | ug/L | 0.25 |
| Delta-BHC | ND | ug/L | 0.25 |
| Gamma-BHC (Lindane) | ND | ug/L | 0.25 |
| Heptachlor | ND | ug/L | 0.25 |
| Aldrin | ND | ug/L | 0.25 |
| Heptachlor Epoxide | ND | ug/L | 0.25 |
| Endosulfan I | ND | ug/L | 0.25 |
| Dieldrin | ND | ug/L | 0.5 |
| 4,4'-DDE | ND | ug/L | 0.5 |
| Endrin | ND | ug/L | 0.5 |
| Endosulfan II | ND | ug/L | 0.5 |
| 4,4'-DDD | ND | ug/L | 0.5 |
| Endosulfan Sulfate | ND | ug/L | 0.5 |
| 4,4'-DDT | ND | ug/L | 0.5 |
| Endrin Ketone | ND | ug/L | 0.5 |
| Methoxychlor | ND | ug/L | 2.5 |
| Chlordane | ND | ug/L | 2.5 |
| Toxaphene | ND | ug/L | 5 |
| Aroclor-1016 | ND | ug/L | 15 |
| Aroclor-1221 | ND | ug/L | 15 |
| Aroclor-1232 | ND | ug/L | 15 |
| Aroclor-1242 | ND | ug/L | 15 |
| Aroclor-1248 | ND | ug/L | 15 |
| Aroclor-1254 | ND | ug/L | 15 |
| Aroclor-1260 | ND | ug/L | 15 |

ND = Not Detected
NA = Not Applicable
*Reporting limits raised due to interference.

Enseco

# INORGANIC PARAMETERS

Client Name: Golder Associates, Inc.

Client I.D.: BP-8A

Laboratory I.D.: 64564-001 Enseco I.D.: G01-45

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units (as received) | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Total Cyanide | ND | mg/L | 0.01 | 335.3 | 09/23/87 |
| Phenolics | ND | mg/L | 0.01 | 420.1 | 09/17/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST ORGANOCHLORINE PESTICIDES/PCBs

## Enseco Method 608/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-8B

Laboratory I.D.: G01-46 Enseco I.D.: NA

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: 09/17/87 Analyzed: 09/23/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Alpha-BHC | ND | ug/L | 0.1* |
| Beta-BHC | ND | ug/L | 0.1* |
| Delta-BHC | ND | ug/L | 0.1* |
| Gamma-BHC (Lindane) | ND | ug/L | 0.1* |
| Heptachlor | ND | ug/L | 0.05 |
| Aldrin | ND | ug/L | 0.05 |
| Heptachlor Epoxide | ND | ug/L | 0.05 |
| Endosulfan I | ND | ug/L | 0.05 |
| Dieldrin | ND | ug/L | 0.1 |
| 4,4'-DDE | ND | ug/L | 0.1 |
| Endrin | ND | ug/L | 0.1 |
| Endosulfan II | ND | ug/L | 0.1 |
| 4,4'-DDD | ND | ug/L | 0.1 |
| Endosulfan Sulfate | ND | ug/L | 0.1 |
| 4,4'-DDT | ND | ug/L | 0.1 |
| Endrin Ketone | ND | ug/L | 0.1 |
| Methoxychlor | ND | ug/L | 0.5 |
| Chlordane | ND | ug/L | 1* |
| Toxaphene | ND | ug/L | 1 |
| Aroclor-1016 | ND | ug/L | 0.5 |
| Aroclor-1221 | ND | ug/L | 0.5 |
| Aroclor-1232 | ND | ug/L | 0.5 |
| Aroclor-1242 | ND | ug/L | 0.5 |
| Aroclor-1248 | ND | ug/L | 0.5 |
| Aroclor-1254 | ND | ug/L | 1 |
| Aroclor-1260 | ND | ug/L | 1 |

ND = Not Detected
NA = Not Applicable
*Reporting limit raised due to interference.

Enseco

# INORGANIC PARAMETERS

Client Name: Golder Associates, Inc.

Client I.D.: BP-8A

Laboratory I.D.: 64564-001 Enseco I.D.: G01-45

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units (as received) | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Total Cyanide | ND | mg/L | 0.01 | 335.3 | 09/23/87 |
| Phenolics | ND | mg/L | 0.01 | 420.1 | 09/17/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST VOLATILE ORGANICS

## Enseco Method 624/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-8B

Laboratory I.D.: G01-46 Enseco I.D.: NA

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: NA Analyzed: 09/15/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Chloromethane | ND | ug/L | 10 |
| Bromomethane | ND | ug/L | 10 |
| Vinyl chloride | ND | ug/L | 10 |
| Chloroethane | ND | ug/L | 10 |
| Methylene chloride | ND | ug/L | 25 |
| 1,1-Dichloroethene | ND | ug/L | 5 |
| 1,1-Dichloroethane | ND | ug/L | 5 |
| trans-1,2-Dichloroethene | ND | ug/L | 5 |
| Chloroform | ND | ug/L | 5 |
| 1,2-Dichloroethane | ND | ug/L | 5 |
| 1,1,1-Trichloroethane | ND | ug/L | 5 |
| Carbon tetrachloride | ND | ug/L | 5 |
| Bromodichloromethane | ND | ug/L | 5 |
| 1,2-Dichloropropane | ND | ug/L | 5 |
| trans-1,3-Dichloropropene | ND | ug/L | 5 |
| Trichloroethene | ND | ug/L | 5 |
| Dibromochloromethane | ND | ug/L | 5 |
| 1,1,2-Trichloroethane | ND | ug/L | 5 |
| Benzene | ND | ug/L | 5 |
| cis-1,3-Dichloropropene | ND | ug/L | 5 |
| 2-Chloroethyl vinyl ether | ND | ug/L | 10 |
| Bromoform | ND | ug/L | 5 |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 5 |
| tetrachloroethene | ND | ug/L | 5 |
| Toluene | ND | ug/L | 5 |
| Chlorobenzene | ND | ug/L | 5 |
| Ethyl benzene | ND | ug/L | 5 |

ND = Not Detected
NA = Not Applicable

Enseco

# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc

Project: G01
Matrix: Water
Fraction: VOA

The following sample had no non-HSL compounds at greater than 10 percent of the response of the internal standard 1,4-difluorobenzene:

| CLE I.D. | Client I.D. |
|---|---|
| G01-46 | BP-8B |

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# PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS

## Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-8B

Laboratory I.D.: 31473-04 Enseco I.D.: G01-46

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Phenol | ND | ug/L | 10 |
| bis(2-Chloroethyl)ether | ND | ug/L | 10 |
| 2-Chlorophenol | ND | ug/L | 10 |
| 1,3-Dichlorobenzene | ND | ug/L | 10 |
| 1,4-Dichlorobenzene | ND | ug/L | 10 |
| 1,2-Dichlorobenzene | ND | ug/L | 10 |
| bis(2-Chloroisopropyl)ether | ND | ug/L | 10 |
| N-Nitroso-dipropylamine | ND | ug/L | 10 |
| Hexachloroethane | ND | ug/L | 10 |
| Nitrobenzene | ND | ug/L | 10 |
| Isophorone | ND | ug/L | 10 |
| 2-Nitrophenol | ND | ug/L | 10 |
| 2,4-Dimethylphenol | ND | ug/L | 10 |
| bis(2-Chloroethoxy)methane | ND | ug/L | 10 |
| 2,4-Dichlorophenol | ND | ug/L | 10 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 10 |
| Naphthalene | ND | ug/L | 10 |
| Hexachlorobutadiene | ND | ug/L | 10 |
| 4-Chloro-3-methylphenol | ND | ug/L | 10 |
| Hexachlorocyclopentadiene | ND | ug/L | 10 |
| 2,4,6-Trichlorophenol | ND | ug/L | 10 |
| 2-Chloronaphthalene | ND | ug/L | 10 |
| Dimethyl phthalate | ND | ug/L | 10 |
| Acenaphthylene | ND | ug/L | 10 |
| Acenaphthene | ND | ug/L | 10 |
| 2,4-Dinitrophenol | ND | ug/L | 50 |
| 4-Nitrophenol | ND | ug/L | 50 |
| 2,4-Dinitrotoluene | ND | ug/L | 10 |
| 2,6-Dinitrotoluene | ND | ug/L | 10 |
| Diethyl phthalate | ND | ug/L | 10 |
| 4-Chlorophenyl phenyl ether | ND | ug/L | 10 |
| Fluorene | ND | ug/L | 10 |
| 4,6-Dinitro-2-methylphenol | ND | ug/L | 50 |
| 1,2-Diphenylhydrazine | ND | ug/L | 10 |
| N-Nitrosodiphenylamine | ND | ug/L | 10 |
| 4-Bromophenyl phenyl ether | ND | ug/L | 10 |

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PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS Cont.

Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-8B

Laboratory I.D.: 31473-04 Enseco I.D.: G01-46

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Hexachlorobenzene | ND | ug/L | 10 |
| Pentachlorophenol | ND | ug/L | 50 |
| Phenanthrene | ND | ug/L | 10 |
| Anthracene | ND | ug/L | 10 |
| Di-n-butyl phthalate | ND | ug/L | 10 |
| Fluoranthene | ND | ug/L | 10 |
| Pyrene | ND | ug/L | 10 |
| Butyl benzyl phthalate | ND | ug/L | 10 |
| 3,3'-Dichlorobenzidine | ND | ug/L | 20 |
| Benzo(a)anthracene | ND | ug/L | 10 |
| bis(2-Ethylhexyl)phthalate | ND | ug/L | 10 |
| Chrysene | ND | ug/L | 10 |
| Di-n-octyl phthalate | ND | ug/L | 10 |
| Benzo(b)fluoranthene | ND | ug/L | 10 |
| Benzo(k)fluoranthene | ND | ug/L | 10 |
| Benzo(a)pyrene | ND | ug/L | 10 |
| Indeno(1,2,3-c,d)pyrene | ND | ug/L | 10 |
| Dibenzo(a,h)anthracene | ND | ug/L | 10 |
| Benzo(g,h,i)perylene | ND | ug/L | 10 |

ND = Not Detected

Enseco

# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc.
Sample I.D.: BP-8B

Project: G01
CLE I.D.: G01-46
CAL I.D.: 31473-04
Fraction: ABN

| Compound | Scan | Probability[1] | Estimated Concentration[2] (ug/L) |
|---|---|---|---|
| Unknown Hydrocarbon | 1095 | - | 24 |
| Sulfur | 1431 | A | 59 |

1 A = High B = Moderate

2 Estimated concentration based on response of $d_{10}$-phenanthrene.

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# PRIORITY POLLUTANT LIST

## TOTAL METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-8B

Laboratory I.D.: 64564-002 Enseco I.D.: G01-46

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/25/87 |
| Arsenic | ND | mg/L | 0.003 | 206.2 | 09/28/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/25/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/25/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/25/87 |
| Copper | ND | mg/L | 0.006 | 200.7 | 09/25/87 |
| Lead | 0.002 | mg/L | 0.002 | 239.2 | 09/28/87 |
| Mercury | ND | mg/L | 0.0001 | 245.1 | 09/17/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/25/87 |
| Selenium | ND | mg/L | 0.002 | 270.2 | 09/28/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/25/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/28/87 |
| Zinc | 0.01 | mg/L | 0.01 | 200.7 | 09/25/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST

## DISSOLVED METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-8B

Laboratory I.D.: 64564-002 Enseco I.D.: G01-46

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/23/87 |
| Arsenic | 0.003 | mg/L | 0.003 | 206.2 | 09/29/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/23/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/23/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/23/87 |
| Copper | ND | mg/L | 0.006 | 200.7 | 09/23/87 |
| Lead | ND | mg/L | 0.002 | 239.2 | 09/28/87 |
| Mercury | ND | mg/L | 0.0001 | 245.1 | 09/17/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/23/87 |
| Selenium | ND | mg/L | 0.002 | 270.2 | 09/29/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/23/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/30/87 |
| Zinc | ND | mg/L | 0.01 | 200.7 | 09/23/87 |

ND = Not Detected

Enseco

# INORGANIC PARAMETERS

Client Name: Golder Associates, Inc.

Client I.D.: BP-8B

Laboratory I.D.: 64564-002 Enseco I.D.: G01-46

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units (as received) | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Total Cyanide | ND | mg/L | 0.01 | 335.3 | 09/23/87 |
| Phenolics | ND | mg/L | 0.01 | 420.1 | 09/17/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST ORGANOCHLORINE PESTICIDES/PCBs

## Enseco Method 608/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-14

Laboratory I.D.: G01-48 Enseco I.D.: NA

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/17/87 Analyzed: 09/23/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Alpha-BHC | ND | ug/L | 0.1* |
| Beta-BHC | ND | ug/L | 0.1* |
| Delta-BHC | ND | ug/L | 0.1* |
| Gamma-BHC (Lindane) | ND | ug/L | 0.1* |
| Heptachlor | ND | ug/L | 0.05 |
| Aldrin | ND | ug/L | 0.05 |
| Heptachlor Epoxide | ND | ug/L | 0.05 |
| Endosulfan I | ND | ug/L | 0.05 |
| Dieldrin | ND | ug/L | 0.1 |
| 4,4'-DDE | ND | ug/L | 0.1 |
| Endrin | ND | ug/L | 0.1 |
| Endosulfan II | ND | ug/L | 0.1 |
| 4,4'-DDD | ND | ug/L | 0.1 |
| Endosulfan Sulfate | ND | ug/L | 0.1 |
| 4,4'-DDT | ND | ug/L | 0.1 |
| Endrin Ketone | ND | ug/L | 0.1 |
| Methoxychlor | ND | ug/L | 0.5 |
| Chlordane | ND | ug/L | 0.5 |
| Toxaphene | ND | ug/L | 1 |
| Aroclor-1016 | ND | ug/L | 0.5 |
| Aroclor-1221 | ND | ug/L | 0.5 |
| Aroclor-1232 | ND | ug/L | 0.5 |
| Aroclor-1242 | ND | ug/L | 0.5 |
| Aroclor-1248 | ND | ug/L | 0.5 |
| Aroclor-1254 | ND | ug/L | 1 |
| Aroclor-1260 | ND | ug/L | 1 |

ND = Not Detected
NA = Not Applicable
*Reporting limit raised due to interference.

Enseco

# PRIORITY POLLUTANT LIST VOLATILE ORGANICS

## Enseco Method 624/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-14

Laboratory I.D.: G01-48 Enseco I.D.: NA

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: NA Analyzed: 09/21/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Chloromethane | ND | ug/L | 10 |
| Bromomethane | ND | ug/L | 10 |
| Vinyl Chloride | ND | ug/L | 10 |
| Chloroethane | ND | ug/L | 10 |
| Methylene Chloride | ND | ug/L | 25 |
| 1,1-Dichloroethene | ND | ug/L | 5 |
| 1,1-Dichloroethane | ND | ug/L | 5 |
| trans-1,2-Dichloroethane | ND | ug/L | 5 |
| Chloroform | ND | ug/L | 5 |
| 1,2-Dichloroethane | ND | ug/L | 5 |
| 1,1,1-Trichloroethane | ND | ug/L | 5 |
| Carbon tetrachloride | ND | ug/L | 5 |
| Bromodichloromethane | ND | ug/L | 5 |
| 1,2-Dichloropropane | ND | ug/L | 5 |
| trans-1,3-Dichloropropene | ND | ug/L | 5 |
| Trichloroethene | ND | ug/L | 5 |
| Dibromochloromethane | ND | ug/L | 5 |
| 1,1,2-Trichloroethane | ND | ug/L | 5 |
| Benzene | ND | ug/L | 5 |
| cis-1,3-Dichloropropene | ND | ug/L | 5 |
| 2-Chloroethyl vinyl ether | ND | ug/L | 10 |
| Bromoform | ND | ug/L | 5 |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 5 |
| Tetrachloroethene | ND | ug/L | 5 |
| Toluene | ND | ug/L | 5 |
| Chlorobenzene | ND | ug/L | 5 |
| Ethyl benzene | ND | ug/L | 5 |

ND = Not Detected
NA = Not Applicable

Enseco

# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc

Project: G01
Matrix: Water
Fraction: VOA

The following sample had no non-HSL compounds at greater than 10 percent of the response of the internal standard 1,4-difluorobenzene:

| CLE I.D. | Client I.D. |
|---|---|
| G01-48 | BP-14 |

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# PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS

## Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-14

Laboratory I.D.: 31473-06 Enseco I.D.: G01-48

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Phenol | ND | ug/L | 10 |
| bis(2-Chloroethyl)ether | ND | ug/L | 10 |
| 2-Chlorophenol | ND | ug/L | 10 |
| 1,3-Dichlorobenzene | ND | ug/L | 10 |
| 1,4-Dichlorobenzene | ND | ug/L | 10 |
| 1,2-Dichlorobenzene | ND | ug/L | 10 |
| bis(2-Chloroisopropyl)ether | ND | ug/L | 10 |
| N-Nitroso-dipropylamine | ND | ug/L | 10 |
| Hexachloroethane | ND | ug/L | 10 |
| Nitrobenzene | ND | ug/L | 10 |
| Isophorone | ND | ug/L | 10 |
| 2-Nitrophenol | ND | ug/L | 10 |
| 2,4-Dimethylphenol | ND | ug/L | 10 |
| bis(2-Chloroethoxy)methane | ND | ug/L | 10 |
| 2,4-Dichlorophenol | ND | ug/L | 10 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 10 |
| Naphthalene | ND | ug/L | 10 |
| Hexachlorobutadiene | ND | ug/L | 10 |
| 4-Chloro-3-methylphenol | ND | ug/L | 10 |
| Hexachlorocyclopentadiene | ND | ug/L | 10 |
| 2,4,6-Trichlorophenol | ND | ug/L | 10 |
| 2-Chloronaphthalene | ND | ug/L | 10 |
| Dimethyl phthalate | ND | ug/L | 10 |
| Acenaphthylene | ND | ug/L | 10 |
| Acenaphthene | ND | ug/L | 10 |
| 2,4-Dinitrophenol | ND | ug/L | 50 |
| 4-Nitrophenol | ND | ug/L | 50 |
| 2,4-Dinitrotoluene | ND | ug/L | 10 |
| 2,6-Dinitrotoluene | ND | ug/L | 10 |
| Diethyl phthalate | ND | ug/L | 10 |
| 4-Chlorophenyl phenyl ether | ND | ug/L | 10 |
| Fluorene | ND | ug/L | 10 |
| 4,6-Dinitro-2-methylphenol | ND | ug/L | 50 |
| 1,2-Diphenylhydrazine | ND | ug/L | 10 |
| N-Nitrosodiphenylamine | ND | ug/L | 10 |
| 4-Bromophenyl phenyl ether | ND | ug/L | 10 |

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PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS Cont.

Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-14

Laboratory I.D.: 31473-06 Enseco I.D.: G01-48

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Hexachlorobenzene | ND | ug/L | 10 |
| Pentachlorophenol | ND | ug/L | 50 |
| Phenanthrene | ND | ug/L | 10 |
| Anthracene | ND | ug/L | 10 |
| Di-n-butyl phthalate | ND | ug/L | 10 |
| Fluoranthene | ND | ug/L | 10 |
| Pyrene | ND | ug/L | 10 |
| Butyl benzyl phthalate | ND | ug/L | 10 |
| 3,3'-Dichlorobenzidine | ND | ug/L | 20 |
| Benzo(a)anthracene | ND | ug/L | 10 |
| bis(2-Ethylhexyl)phthalate | ND | ug/L | 10 |
| Chrysene | ND | ug/L | 10 |
| Di-n-octyl phthalate | ND | ug/L | 10 |
| Benzo(b)fluoranthene | ND | ug/L | 10 |
| Benzo(k)fluoranthene | ND | ug/L | 10 |
| Benzo(a)pyrene | ND | ug/L | 10 |
| Indeno(1,2,3-c,d)pyrene | ND | ug/L | 10 |
| Dibenzo(a,h)anthracene | ND | ug/L | 10 |
| Benzo(g,h,i)perylene | ND | ug/L | 10 |

ND = Not Detected

Enseco

# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc.

Project: G01
Matrix: Water
Fraction: ABN

The following sample had no non-HSL compounds at greater than 10 percent of the response of the internal standard $d_{10}$-phenanthrene:

| CLE I.D. | Client I.D. |
|---|---|
| G01-48 | BP-14 |

Enseco

# PRIORITY POLLUTANT LIST

## DISSOLVED METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-14

Laboratory I.D.: 31435-01 Enseco I.D.: G01-48

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/21/87 |
| Arsenic | 0.0050 | mg/L | 0.003 | 206.2 | 09/21/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/21/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/21/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/21/87 |
| Copper | ND | mg/L | 0.006 | 200.7 | 09/21/87 |
| Lead | 0.0034 | mg/L | 0.002 | 239.2 | 09/21/87 |
| Mercury | ND | mg/L | 0.0002 | 245.1 | 09/21/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/21/87 |
| Selenium | 0.018 | mg/L | 0.002 | 270.2 | 09/21/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/21/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/21/87 |
| Zinc | 0.011 | mg/L | 0.01 | 200.7 | 09/21/87 |

ND = Not Detected

Enseco

# INORGANIC PARAMETERS

Client Name: Golder Associates, Inc.

Client I.D.: BP-14

Laboratory I.D.: 31435-01 Enseco I.D.: G01-48

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87

| Parameter | Result | Units (as received) | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Total Cyanide | 0.077 | mg/L | 0.01 | 335.3 | 09/29/87 |

Enseco

# INORGANIC PARAMETERS

Client Name: Golder Associates, Inc.

Client I.D.: BP-14

Laboratory I.D.: 31588-02 Enseco I.D.: G01-65

Matrix: Water Sampled: 09/24/87 Received: 09/25/87

Authorized: 09/25/87

| Parameter | Result | Units (as received) | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Phenolics | 0.11 | mg/L | 0.01 | 420.1 | 09/29/87 |

Enseco

# PRIORITY POLLUTANT LIST ORGANOCHLORINE PESTICIDES/PCBs

## Enseco Method 608/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-17

Laboratory I.D.: G01-49 Enseco I.D.: NA

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/17/87 Analyzed: 09/23/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Alpha-BHC | ND | ug/L | 0.05 |
| Beta-BHC | ND | ug/L | 0.05 |
| Delta-BHC | ND | ug/L | 0.05 |
| Gamma-BHC (Lindane) | ND | ug/L | 0.05 |
| Heptachlor | ND | ug/L | 0.05 |
| Aldrin | ND | ug/L | 0.05 |
| Heptachlor Epoxide | ND | ug/L | 0.05 |
| Endosulfan I | ND | ug/L | 0.05 |
| Dieldrin | ND | ug/L | 0.1 |
| 4,4'-DDE | ND | ug/L | 0.1 |
| Endrin | ND | ug/L | 0.1 |
| Endosulfan II | ND | ug/L | 0.1 |
| 4,4'-DDD | ND | ug/L | 0.1 |
| Endosulfan Sulfate | ND | ug/L | 0.1 |
| 4,4'-DDT | ND | ug/L | 0.1 |
| Endrin Ketone | ND | ug/L | 0.1 |
| Methoxychlor | ND | ug/L | 0.5 |
| Chlordane | ND | ug/L | 0.5 |
| Toxaphene | ND | ug/L | 1 |
| Aroclor-1016 | ND | ug/L | 0.5 |
| Aroclor-1221 | ND | ug/L | 0.5 |
| Aroclor-1232 | ND | ug/L | 0.5 |
| Aroclor-1242 | ND | ug/L | 0.5 |
| Aroclor-1248 | ND | ug/L | 0.5 |
| Aroclor-1254 | ND | ug/L | 1 |
| Aroclor-1260 | ND | ug/L | 1 |

ND = Not Detected
NA = Not Applicable

Enseco

# PRIORITY POLLUTANT LIST VOLATILE ORGANICS

## Enseco Method 624/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-17

Laboratory I.D.: G01-49 Enseco I.D.: NA

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: NA Analyzed: 09/21/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Chloromethane | ND | ug/L | 10 |
| Bromomethane | ND | ug/L | 10 |
| Vinyl Chloride | ND | ug/L | 10 |
| Chloroethane | ND | ug/L | 10 |
| Methylene Chloride | ND | ug/L | 25 |
| 1,1-Dichloroethene | ND | ug/L | 5 |
| 1,1-Dichloroethane | ND | ug/L | 5 |
| trans-1,2-Dichloroethane | ND | ug/L | 5 |
| Chloroform | ND | ug/L | 5 |
| 1,2-Dichloroethane | ND | ug/L | 5 |
| 1,1,1-Trichloroethane | ND | ug/L | 5 |
| Carbon tetrachloride | ND | ug/L | 5 |
| Bromodichloromethane | ND | ug/L | 5 |
| 1,2-Dichloropropane | ND | ug/L | 5 |
| trans-1,3-Dichloropropene | ND | ug/L | 5 |
| Trichloroethene | ND | ug/L | 5 |
| Dibromochloromethane | ND | ug/L | 5 |
| 1,1,2-Trichloroethane | ND | ug/L | 5 |
| Benzene | ND | ug/L | 5 |
| cis-1,3-Dichloropropene | ND | ug/L | 5 |
| 2-Chloroethyl vinyl ether | ND | ug/L | 10 |
| Bromoform | ND | ug/L | 5 |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 5 |
| Tetrachloroethene | ND | ug/L | 5 |
| Toluene | ND | ug/L | 5 |
| Chlorobenzene | ND | ug/L | 5 |
| Ethyl benzene | ND | ug/L | 5 |

ND = Not Detected
NA = Not Applicable

Enseco

# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc.
Sample I.D.: BP-17

Project: G01
CLE I.D.: G01-49
Fraction: VOA

| Compound | Scan | Probability[1] | Estimated[1] Concentration (ug/L) |
|---|---|---|---|
| Unknown | 79 | ---- | 13 |

1 A = High B = Moderate

2 Estimated concentration based on response of 1,4-difluorobenzene.

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# PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS

## Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-17

Laboratory I.D.: 31473-07 Enseco I.D.: G01-49

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Phenol | ND | ug/L | 10 |
| bis(2-Chloroethyl)ether | ND | ug/L | 10 |
| 2-Chlorophenol | ND | ug/L | 10 |
| 1,3-Dichlorobenzene | ND | ug/L | 10 |
| 1,4-Dichlorobenzene | ND | ug/L | 10 |
| 1,2-Dichlorobenzene | ND | ug/L | 10 |
| bis(2-Chloroisopropyl)ether | ND | ug/L | 10 |
| N-Nitroso-dipropylamine | ND | ug/L | 10 |
| Hexachloroethane | ND | ug/L | 10 |
| Nitrobenzene | ND | ug/L | 10 |
| Isophorone | ND | ug/L | 10 |
| 2-Nitrophenol | ND | ug/L | 10 |
| 2,4-Dimethylphenol | ND | ug/L | 10 |
| bis(2-Chloroethoxy)methane | ND | ug/L | 10 |
| 2,4-Dichlorophenol | ND | ug/L | 10 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 10 |
| Naphthalene | ND | ug/L | 10 |
| Hexachlorobutadiene | ND | ug/L | 10 |
| 4-Chloro-3-methylphenol | ND | ug/L | 10 |
| Hexachlorocyclopentadiene | ND | ug/L | 10 |
| 2,4,6-Trichlorophenol | ND | ug/L | 10 |
| 2-Chloronaphthalene | ND | ug/L | 10 |
| Dimethyl phthalate | ND | ug/L | 10 |
| Acenaphthylene | ND | ug/L | 10 |
| Acenaphthene | ND | ug/L | 10 |
| 2,4-Dinitrophenol | ND | ug/L | 50 |
| 4-Nitrophenol | ND | ug/L | 50 |
| 2,4-Dinitrotoluene | ND | ug/L | 10 |
| 2,6-Dinitrotoluene | ND | ug/L | 10 |
| Diethyl phthalate | ND | ug/L | 10 |
| 4-Chlorophenyl phenyl ether | ND | ug/L | 10 |
| Fluorene | ND | ug/L | 10 |
| 4,6-Dinitro-2-methylphenol | ND | ug/L | 50 |
| 1,2-Diphenylhydrazine | ND | ug/L | 10 |
| N-Nitrosodiphenylamine | ND | ug/L | 10 |
| 4-Bromophenyl phenyl ether | ND | ug/L | 10 |

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PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS Cont.

Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-17

Laboratory I.D.: 31473-07 Enseco I.D.: G01-49

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Hexachlorobenzene | ND | ug/L | 10 |
| Pentachlorophenol | ND | ug/L | 50 |
| Phenanthrene | ND | ug/L | 10 |
| Anthracene | ND | ug/L | 10 |
| Di-n-butyl phthalate | ND | ug/L | 10 |
| Fluoranthene | ND | ug/L | 10 |
| Pyrene | ND | ug/L | 10 |
| Butyl benzyl phthalate | ND | ug/L | 10 |
| 3,3'-Dichlorobenzidine | ND | ug/L | 20 |
| Benzo(a)anthracene | ND | ug/L | 10 |
| bis(2-Ethylhexyl)phthalate | ND | ug/L | 10 |
| Chrysene | ND | ug/L | 10 |
| Di-n-octyl phthalate | ND | ug/L | 10 |
| Benzo(b)fluoranthene | ND | ug/L | 10 |
| Benzo(k)fluoranthene | ND | ug/L | 10 |
| Benzo(a)pyrene | ND | ug/L | 10 |
| Indeno(1,2,3-c,d)pyrene | ND | ug/L | 10 |
| Dibenzo(a,h)anthracene | ND | ug/L | 10 |
| Benzo(g,h,i)perylene | ND | ug/L | 10 |

ND = Not Detected

Enseco

# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc.
Sample I.D.: BP-17

Project: G01
CLE I.D.: G01-49
CAL I.D.: 31473-07
Fraction: ABN

| Compound | Scan | Probability[1] | Estimated Concentration[2] (ug/L) |
|---|---|---|---|
| 3,5,5-Trimethyl-2-cyclohexene-1-one | 678 | A | 15 |
| Unknown Hydrocarbon | 1303 | A | 12 |

1 A = High B = Moderate

2 Estimated concentration based on response of $d_{10}$-phenanthrene.

Enseco

# PRIORITY POLLUTANT LIST

## DISSOLVED METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-17

Laboratory I.D.: 31435-02 Enseco I.D.: G01-49

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/21/87 |
| Arsenic | ND | mg/L | 0.003 | 206.2 | 09/21/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/21/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/21/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/21/87 |
| Copper | ND | mg/L | 0.006 | 200.7 | 09/21/87 |
| Lead | ND | mg/L | 0.002 | 239.2 | 09/21/87 |
| Mercury | ND | mg/L | 0.0002 | 245.1 | 09/21/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/21/87 |
| Selenium | 0.011 | mg/L | 0.002 | 270.2 | 09/21/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/21/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/21/87 |
| Zinc | ND | mg/L | 0.01 | 200.7 | 09/21/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST

## TOTAL METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-17

Laboratory I.D.: 31435-02 Enseco I.D.: G01-49

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/21/87 |
| Arsenic | ND | mg/L | 0.003 | 206.2 | 09/21/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/21/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/21/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/21/87 |
| Copper | ND | mg/L | 0.006 | 200.7 | 09/21/87 |
| Lead | 0.0023 | mg/L | 0.002 | 239.2 | 09/21/87 |
| Mercury | ND | mg/L | 0.0002 | 245.1 | 09/21/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/21/87 |
| Selenium | 0.012 | mg/L | 0.002 | 270.2 | 09/21/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/21/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/21/87 |
| Zinc | ND | mg/L | 0.01 | 200.7 | 09/21/87 |

ND = Not Detected

Enseco

# INORGANIC PARAMETERS

Client Name: Golder Associates, Inc.

Client I.D.: BP-17

Laboratory I.D.: 31435-02 Enseco I.D.: G01-49

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87

| Parameter | Result | Units (as received) | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Total Cyanide | ND | mg/L | 0.01 | 335.3 | 09/29/87 |
| Phenolics | 0.18 | mg/L | 0.01 | 420.1 | 09/29/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST ORGANOCHLORINE PESTICIDES/PCBs

## Enseco Method 608/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-20

Laboratory I.D.: G01-47 Enseco I.D.: NA

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: 09/17/87 Analyzed: 09/23/87

| Parameter | Result | Units | Reporting Limit* |
|---|---|---|---|
| Alpha-BHC | ND | ug/L | 0.25 |
| Beta-BHC | ND | ug/L | 0.25 |
| Delta-BHC | ND | ug/L | 0.25 |
| Gamma-BHC (Lindane) | ND | ug/L | 0.25 |
| Heptachlor | ND | ug/L | 0.25 |
| Aldrin | ND | ug/L | 0.25 |
| Heptachlor Epoxide | ND | ug/L | 0.25 |
| Endosulfan I | ND | ug/L | 0.25 |
| Dieldrin | ND | ug/L | 0.5 |
| 4,4'-DDE | ND | ug/L | 0.5 |
| Endrin | ND | ug/L | 0.5 |
| Endosulfan II | ND | ug/L | 0.5 |
| 4,4'-DDD | ND | ug/L | 0.5 |
| Endosulfan Sulfate | ND | ug/L | 0.5 |
| 4,4'-DDT | ND | ug/L | 0.5 |
| Endrin Ketone | ND | ug/L | 0.5 |
| Methoxychlor | ND | ug/L | 2.5 |
| Chlordane | ND | ug/L | 2.5 |
| Toxaphene | ND | ug/L | 5 |
| Aroclor-1016 | ND | ug/L | 15 |
| Aroclor-1221 | ND | ug/L | 15 |
| Aroclor-1232 | ND | ug/L | 15 |
| Aroclor-1242 | ND | ug/L | 15 |
| Aroclor-1248 | ND | ug/L | 15 |
| Aroclor-1254 | ND | ug/L | 15 |
| Aroclor-1260 | ND | ug/L | 15 |

ND = Not Detected
NA = Not Applicable
*Reporting limits raised due to interference.

Enseco

# PRIORITY POLLUTANT LIST VOLATILE ORGANICS

## Enseco Method 624/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-20

Laboratory I.D.: G01-47 Enseco I.D.: NA

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: NA Analyzed: 09/15/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Chloromethane | ND | ug/L | 10 |
| Bromomethane | ND | ug/L | 10 |
| Vinyl Chloride | ND | ug/L | 10 |
| Chloroethane | ND | ug/L | 10 |
| Methylene Chloride | ND | ug/L | 25 |
| 1,1-Dichloroethene | ND | ug/L | 5 |
| 1,1-Dichloroethane | ND | ug/L | 5 |
| trans-1,2-Dichloroethane | ND | ug/L | 5 |
| Chloroform | ND | ug/L | 5 |
| 1,2-Dichloroethane | ND | ug/L | 5 |
| 1,1,1-Trichloroethane | ND | ug/L | 5 |
| Carbon tetrachloride | ND | ug/L | 5 |
| Bromodichloromethane | ND | ug/L | 5 |
| 1,2-Dichloropropane | ND | ug/L | 5 |
| trans-1,3-Dichloropropene | ND | ug/L | 5 |
| Trichloroethene | ND | ug/L | 5 |
| Dibromochloromethane | ND | ug/L | 5 |
| 1,1,2-Trichloroethane | ND | ug/L | 5 |
| Benzene | ND | ug/L | 5 |
| cis-1,3-Dichloropropene | ND | ug/L | 5 |
| 2-Chloroethyl vinyl ether | ND | ug/L | 10 |
| Bromoform | ND | ug/L | 5 |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 5 |
| Tetrachloroethene | ND | ug/L | 5 |
| Toluene | ND | ug/L | 5 |
| Chlorobenzene | ND | ug/L | 5 |
| Ethyl benzene | ND | ug/L | 5 |

ND = Not Detected
NA = Not Applicable

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# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc

Project: G01
Matrix: Water
Fraction: VOA

The following sample had no non-HSL compounds at greater than 10 percent of the response of the internal standard 1,4-difluorobenzene:

| CLE I.D. | Client I.D. |
|---|---|
| G01-47 | BP-20 |

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# PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS

## Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-20

Laboratory I.D.: 31473-05 Enseco I.D.: G01-47

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Phenol | ND | ug/L | 10 |
| bis(2-Chloroethyl)ether | ND | ug/L | 10 |
| 2-Chlorophenol | ND | ug/L | 10 |
| 1,3-Dichlorobenzene | ND | ug/L | 10 |
| 1,4-Dichlorobenzene | ND | ug/L | 10 |
| 1,2-Dichlorobenzene | ND | ug/L | 10 |
| bis(2-Chloroisopropyl)ether | ND | ug/L | 10 |
| N-Nitroso-dipropylamine | ND | ug/L | 10 |
| Hexachloroethane | ND | ug/L | 10 |
| Nitrobenzene | ND | ug/L | 10 |
| Isophorone | ND | ug/L | 10 |
| 2-Nitrophenol | ND | ug/L | 10 |
| 2,4-Dimethylphenol | ND | ug/L | 10 |
| bis(2-Chloroethoxy)methane | ND | ug/L | 10 |
| 2,4-Dichlorophenol | ND | ug/L | 10 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 10 |
| Naphthalene | ND | ug/L | 10 |
| Hexachlorobutadiene | ND | ug/L | 10 |
| 4-Chloro-3-methylphenol | ND | ug/L | 10 |
| Hexachlorocyclopentadiene | ND | ug/L | 10 |
| 2,4,6-Trichlorophenol | ND | ug/L | 10 |
| 2-Chloronaphthalene | ND | ug/L | 10 |
| Dimethyl phthalate | ND | ug/L | 10 |
| Acenaphthylene | ND | ug/L | 10 |
| Acenaphthene | ND | ug/L | 10 |
| 2,4-Dinitrophenol | ND | ug/L | 50 |
| 4-Nitrophenol | ND | ug/L | 50 |
| 2,4-Dinitrotoluene | ND | ug/L | 10 |
| 2,6-Dinitrotoluene | ND | ug/L | 10 |
| Diethyl phthalate | ND | ug/L | 10 |
| 4-Chlorophenyl phenyl ether | ND | ug/L | 10 |
| Fluorene | ND | ug/L | 10 |
| 4,6-Dinitro-2-methylphenol | ND | ug/L | 50 |
| 1,2-Diphenylhydrazine | ND | ug/L | 10 |
| N-Nitrosodiphenylamine | ND | ug/L | 10 |
| 4-Bromophenyl phenyl ether | ND | ug/L | 10 |

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PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS Cont.

Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-20

Laboratory I.D.: 31473-05 Enseco I.D.: G01-47

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87 Prepared: 09/18/87 Analyzed: 09/24/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Hexachlorobenzene | ND | ug/L | 10 |
| Pentachlorophenol | ND | ug/L | 50 |
| Phenanthrene | 25 | ug/L | 10 |
| Anthracene | ND | ug/L | 10 |
| Di-n-butyl phthalate | ND | ug/L | 10 |
| Fluoranthene | 89 | ug/L | 10 |
| Pyrene | 59 | ug/L | 10 |
| Butyl benzyl phthalate | ND | ug/L | 10 |
| 3,3'-Dichlorobenzidine | ND | ug/L | 20 |
| Benzo(a)anthracene | 21 | ug/L | 10 |
| bis(2-Ethylhexyl)phthalate | ND | ug/L | 10 |
| Chrysene | 36 | ug/L | 10 |
| Di-n-octyl phthalate | ND | ug/L | 10 |
| Benzo(b)fluoranthene | 61* | ug/L | 10 |
| Benzo(k)fluoranthene | * | ug/L | 10 |
| Benzo(a)pyrene | 26 | ug/L | 10 |
| Indeno(1,2,3-c,d)pyrene | 18 | ug/L | 10 |
| Dibenzo(a,h)anthracene | ND | ug/L | 10 |
| Benzo(g,h,i)perylene | 17 | ug/L | 10 |

ND = Not Detected
*Reported as the sum of Benzo(b)fluoranthene and Benzo(k)fluoranthene.

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# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc.
Sample I.D.: BP-20

Project: G01
CLE I.D.: G01-47
CAL I.D.: 31473-05
Fraction: ABN

| Compound | Scan | Probability[1] | Estimated Concentration[2] (ug/L) |
|---|---|---|---|
| 2,4-Dimethyl-2-pentanol | 315 | B | 44 |
| $C_3$Pyridine | 531 | A | 10 |
| $C_2$Phenol | 659 | A | 11 |
| $C_1$ Quinoline | 865 | A | 69 |
| $C_1$ Isoquinoline (or isomer) | 883 | A | 11 |
| $C_1$ Isoquinoline (or isomer) | 895 | A | 12 |
| $C_1$ Quinoline | 905 | A | 13 |
| $C_2$ Quinoline | 965 | A | 22 |
| $C_2$ Quinoline | 984 | A | 18 |
| 9-Nitroso-9H-Carbazole | 1144 | B | 13 |
| Benzo(H) Quinoline (or isomer) | 1262 | A | 28 |
| Benzo(H) Quinoline (or isomer) | 1279 | A | 19 |
| [1,1'-Biphenyl]-2-Carboroitrile | 1302 | B | 13 |
| Unknown | 1342 | - | 16 |
| 9,10-anthracenedione | 1375 | A | 10 |
| $C_1$-pyrene | 1524 | A | 15 |
| Benzo(J)fluoranthene | 1858 | A | 16 |

1 A = High B = Moderate

2 Estimated concentration based on response of $d_{10}$-phenanthrene.

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# PRIORITY POLLUTANT LIST

## TOTAL METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-20

Laboratory I.D.: 64564-003 Enseco I.D.: G01-47

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/25/87 |
| Arsenic | ND | mg/L | 0.003 | 206.2 | 09/28/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/25/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/25/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/25/87 |
| Copper | 0.011 | mg/L | 0.006 | 200.7 | 09/25/87 |
| Lead | 0.006 | mg/L | 0.002 | 239.2 | 09/28/87 |
| Mercury | ND | mg/L | 0.0001 | 245.1 | 09/17/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/25/87 |
| Selenium | ND | mg/L | 0.002 | 270.2 | 09/28/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/25/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/28/87 |
| Zinc | 0.05 | mg/L | 0.01 | 200.7 | 09/25/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST

## DISSOLVED METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-20

Laboratory I.D.: 64564-003 Enseco I.D.: G01-47

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/23/87 |
| Arsenic | 0.004 | mg/L | 0.003 | 206.2 | 09/29/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/23/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/23/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/23/87 |
| Copper | ND | mg/L | 0.006 | 200.7 | 09/23/87 |
| Lead | ND | mg/L | 0.002 | 239.2 | 09/28/87 |
| Mercury | ND | mg/L | 0.0001 | 245.1 | 09/17/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/23/87 |
| Selenium | ND | mg/L | 0.002 | 270.2 | 09/29/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/23/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/30/87 |
| Zinc | 0.01 | mg/L | 0.01 | 200.7 | 09/23/87 |

ND = Not Detected

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# INORGANIC PARAMETERS

Client Name: Golder Associates, Inc.

Client I.D.: BP-20

Laboratory I.D.: 64564-002 Enseco I.D.: G01-47

Matrix: Water Sampled: 09/14/87 Received: 09/15/87

Authorized: 09/15/87

| Parameter | Result | Units (as received) | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Total Cyanide | ND | mg/L | 0.01 | 335.3 | 09/23/87 |
| Phenolics | 0.19 | mg/L | 0.01 | 420.1 | 09/17/87 |

ND = Not Detected

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# PRIORITY POLLUTANT LIST ORGANOCHLORINE PESTICIDES/PCBs

## Enseco Method 608/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-NT3

Laboratory I.D.: G01-50 Enseco I.D.: NA

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/18/87 Analyzed: 09/23/87

| Parameter | Result | Units | Reporting Limit* |
|---|---|---|---|
| Alpha-BHC | ND | ug/L | 0.25 |
| Beta-BHC | ND | ug/L | 0.25 |
| Delta-BHC | ND | ug/L | 0.25 |
| Gamma-BHC (Lindane) | ND | ug/L | 0.25 |
| Heptachlor | ND | ug/L | 0.25 |
| Aldrin | ND | ug/L | 0.25 |
| Heptachlor Epoxide | ND | ug/L | 0.25 |
| Endosulfan I | ND | ug/L | 0.25 |
| Dieldrin | ND | ug/L | 0.5 |
| 4,4'-DDE | ND | ug/L | 0.5 |
| Endrin | ND | ug/L | 0.5 |
| Endosulfan II | ND | ug/L | 0.5 |
| 4,4'-DDD | ND | ug/L | 0.5 |
| Endosulfan Sulfate | ND | ug/L | 0.5 |
| 4,4'-DDT | ND | ug/L | 0.5 |
| Endrin Ketone | ND | ug/L | 0.5 |
| Methoxychlor | ND | ug/L | 2.5 |
| Chlordane | ND | ug/L | 2.5 |
| Toxaphene | ND | ug/L | 5 |
| Aroclor-1016 | ND | ug/L | 15 |
| Aroclor-1221 | ND | ug/L | 15 |
| Aroclor-1232 | ND | ug/L | 15 |
| Aroclor-1242 | ND | ug/L | 15 |
| Aroclor-1248 | ND | ug/L | 15 |
| Aroclor-1254 | ND | ug/L | 15 |
| Aroclor-1260 | ND | ug/L | 15 |

ND = Not Detected
NA = Not Applicable
*Reporting limits raised due to interference.

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# PRIORITY POLLUTANT LIST VOLATILE ORGANICS

## Enseco Method 624/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-NT3

Laboratory I.D.: G01-50 Enseco I.D.: NA

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: NA Analyzed: 09/21/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Chloromethane | ND | ug/L | 10 |
| Bromomethane | ND | ug/L | 10 |
| Vinyl Chloride | ND | ug/L | 10 |
| Chloroethane | ND | ug/L | 10 |
| Methylene Chloride | ND | ug/L | 25 |
| 1,1-Dichloroethene | ND | ug/L | 5 |
| 1,1-Dichloroethane | ND | ug/L | 5 |
| trans-1,2-Dichloroethane | ND | ug/L | 5 |
| Chloroform | ND | ug/L | 5 |
| 1,2-Dichloroethane | ND | ug/L | 5 |
| 1,1,1-Trichloroethane | ND | ug/L | 5 |
| Carbon tetrachloride | ND | ug/L | 5 |
| Bromodichloromethane | ND | ug/L | 5 |
| 1,2-Dichloropropane | ND | ug/L | 5 |
| trans-1,3-Dichloropropene | ND | ug/L | 5 |
| Trichloroethene | ND | ug/L | 5 |
| Dibromochloromethane | ND | ug/L | 5 |
| 1,1,2-Trichloroethane | ND | ug/L | 5 |
| Benzene | ND | ug/L | 5 |
| cis-1,3-Dichloropropene | ND | ug/L | 5 |
| 2-Chloroethyl vinyl ether | ND | ug/L | 10 |
| Bromoform | ND | ug/L | 5 |
| 1,1,2,2-Tetrachloroethane | ND | ug/L | 5 |
| Tetrachloroethene | ND | ug/L | 5 |
| Toluene | ND | ug/L | 5 |
| Chlorobenzene | ND | ug/L | 5 |
| Ethyl benzene | ND | ug/L | 5 |

ND = Not Detected
NA = Not Applicable

Enseco

# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc

Project: G01
Matrix: Water
Fraction: VOA

The following sample had no non-HSL compounds at greater than 10 percent of the response of the internal standard 1,4-difluorobenzene:

| CLE I.D. | Client I.D. |
|---|---|
| G01-50 | BP-NT3 |

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# PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS

## Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-NT3

Laboratory I.D.: 31473-08 Enseco I.D.: G01-50

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/18/87 Analyzed: 09/25/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Phenol | ND | ug/L | 10 |
| bis(2-Chloroethyl)ether | ND | ug/L | 10 |
| 2-Chlorophenol | ND | ug/L | 10 |
| 1,3-Dichlorobenzene | ND | ug/L | 10 |
| 1,4-Dichlorobenzene | ND | ug/L | 10 |
| 1,2-Dichlorobenzene | ND | ug/L | 10 |
| bis(2-Chloroisopropyl)ether | ND | ug/L | 10 |
| N-Nitroso-dipropylamine | ND | ug/L | 10 |
| Hexachloroethane | ND | ug/L | 10 |
| Nitrobenzene | ND | ug/L | 10 |
| Isophorone | ND | ug/L | 10 |
| 2-Nitrophenol | ND | ug/L | 10 |
| 2,4-Dimethylphenol | ND | ug/L | 10 |
| bis(2-Chloroethoxy)methane | ND | ug/L | 10 |
| 2,4-Dichlorophenol | ND | ug/L | 10 |
| 1,2,4-Trichlorobenzene | ND | ug/L | 10 |
| Naphthalene | ND | ug/L | 10 |
| Hexachlorobutadiene | ND | ug/L | 10 |
| 4-Chloro-3-methylphenol | ND | ug/L | 10 |
| Hexachlorocyclopentadiene | ND | ug/L | 10 |
| 2,4,6-Trichlorophenol | ND | ug/L | 10 |
| 2-Chloronaphthalene | ND | ug/L | 10 |
| Dimethyl phthalate | ND | ug/L | 10 |
| Acenaphthylene | ND | ug/L | 10 |
| Acenaphthene | ND | ug/L | 10 |
| 2,4-Dinitrophenol | ND | ug/L | 50 |
| 4-Nitrophenol | ND | ug/L | 50 |
| 2,4-Dinitrotoluene | ND | ug/L | 10 |
| 2,6-Dinitrotoluene | ND | ug/L | 10 |
| Diethyl phthalate | ND | ug/L | 10 |
| 4-Chlorophenyl phenyl ether | ND | ug/L | 10 |
| Fluorene | ND | ug/L | 10 |
| 4,6-Dinitro-2-methylphenol | ND | ug/L | 50 |
| 1,2-Diphenylhydrazine | ND | ug/L | 10 |
| N-Nitrosodiphenylamine | ND | ug/L | 10 |
| 4-Bromophenyl phenyl ether | ND | ug/L | 10 |

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PRIORITY POLLUTANT LIST SEMIVOLATILE ORGANICS Cont.

Enseco Method 625/PP List

Client Name: Golder Associates, Inc.

Client I.D.: BP-NT3

Laboratory I.D.: 31473-08 Enseco I.D.: G01-50

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87 Prepared: 09/18/87 Analyzed: 09/25/87

| Parameter | Result | Units | Reporting Limit |
|---|---|---|---|
| Hexachlorobenzene | ND | ug/L | 10 |
| Pentachlorophenol | ND | ug/L | 50 |
| Phenanthrene | ND | ug/L | 10 |
| Anthracene | ND | ug/L | 10 |
| Di-n-butyl phthalate | ND | ug/L | 10 |
| Fluoranthene | ND | ug/L | 10 |
| Pyrene | ND | ug/L | 10 |
| Butyl benzyl phthalate | ND | ug/L | 10 |
| 3,3'-Dichlorobenzidine | ND | ug/L | 20 |
| Benzo(a)anthracene | ND | ug/L | 10 |
| bis(2-Ethylhexyl)phthalate | ND | ug/L | 10 |
| Chrysene | ND | ug/L | 10 |
| Di-n-octyl phthalate | ND | ug/L | 10 |
| Benzo(b)fluoranthene | ND | ug/L | 10 |
| Benzo(k)fluoranthene | ND | ug/L | 10 |
| Benzo(a)pyrene | ND | ug/L | 10 |
| Indeno(1,2,3-c,d)pyrene | ND | ug/L | 10 |
| Dibenzo(a,h)anthracene | ND | ug/L | 10 |
| Benzo(g,h,i)perylene | ND | ug/L | 10 |

ND = Not Detected

Enseco

# ORGANIC ANALYSIS DATA SHEET

## TENTATIVELY IDENTIFIED COMPOUNDS

Golder Associates, Inc.
Sample I.D.: BP-NT3

Project: G01
CLE I.D.: G01-50
CAL I.D.: 31473-08
Fraction: ABN

| Compound | Scan | Probability[1] | Estimated Concentration[2] (ug/L) |
|---|---|---|---|
| $C_4$ Phenol | 844 | A | 52 |
| Hexadecanoic Acid | 1349 | A | 80 |
| Unknown | 1471 | - | 46 |
| Unknown | 1829 | - | 36 |
| Unknown | 1897 | - | 35 |
| Unknown | 1979 | - | 50 |
| Unknown | 2041 | - | 53 |

1 A = High B = Moderate

2 Estimated concentration based on response of $d_{10}$-phenanthrene.

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# PRIORITY POLLUTANT LIST

## TOTAL METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-NT3

Laboratory I.D.: 31435-03 Enseco I.D.: G01-50

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/21/87 |
| Arsenic | 0.013 | mg/L | 0.003 | 206.2 | 09/21/87 |
| Beryllium | 0.012 | mg/L | 0.001 | 200.7 | 09/21/87 |
| Cadmium | 0.013 | mg/L | 0.005 | 200.7 | 09/21/87 |
| Chromium | 217 | mg/L | 0.05 | 200.7 | 09/21/87 |
| Copper | 1.8 | mg/L | 0.006 | 200.7 | 09/21/87 |
| Lead | 1.4 | mg/L | 0.002 | 239.2 | 09/21/87 |
| Mercury | ND | mg/L | 0.0002 | 245.1 | 09/21/87 |
| Nickel | 1.9 | mg/L | 0.04 | 200.7 | 09/21/87 |
| Selenium | ND | mg/L | 0.002 | 270.2 | 09/21/87 |
| Silver | 0.020 | mg/L | 0.005 | 200.7 | 09/21/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/21/87 |
| Zinc | 13 | mg/L | 0.01 | 200.7 | 09/21/87 |

ND = Not Detected

Enseco

# PRIORITY POLLUTANT LIST

## DISSOLVED METALS

Client Name: Golder Associates, Inc.

Client I.D.: BP-NT3

Laboratory I.D.: 31435-03 Enseco I.D.: G01-50

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87

| Parameter | Result | Units | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Antimony | ND | mg/L | 0.05 | 200.7 | 09/21/87 |
| Arsenic | ND | mg/L | 0.003 | 206.2 | 09/23/87 |
| Beryllium | ND | mg/L | 0.001 | 200.7 | 09/21/87 |
| Cadmium | ND | mg/L | 0.005 | 200.7 | 09/21/87 |
| Chromium | ND | mg/L | 0.01 | 200.7 | 09/21/87 |
| Copper | ND | mg/L | 0.006 | 200.7 | 09/21/87 |
| Lead | 0.0090 | mg/L | 0.002 | 239.2 | 09/21/87 |
| Mercury | ND | mg/L | 0.0002 | 245.1 | 09/21/87 |
| Nickel | ND | mg/L | 0.04 | 200.7 | 09/21/87 |
| Selenium | ND | mg/L | 0.002 | 270.2 | 09/21/87 |
| Silver | ND | mg/L | 0.005 | 200.7 | 09/21/87 |
| Thallium | ND | mg/L | 0.004 | 279.2 | 09/21/87 |
| Zinc | ND | mg/L | 0.01 | 200.7 | 09/21/87 |

ND = Not Detected

Enseco

# INORGANIC PARAMETERS

Client Name: Golder Associates, Inc.

Client I.D.: BP-NT3

Laboratory I.D.: 31435-03 Enseco I.D.: G01-50

Matrix: Water Sampled: 09/16/87 Received: 09/17/87

Authorized: 09/17/87

| Parameter | Result | Units (as received) | Reporting Limit | Analytical Method | Date Analyzed |
|---|---|---|---|---|---|
| Total Cyanide | 0.62 | mg/L | 0.01 | 335.3 | 09/29/87 |
| Phenolics | 5.9 | mg/L | 0.01 | 420.1 | 09/29/87 |