# TABLES

## Table 2-1

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 18 (Parcel 74Q)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 1.63E+04 | 5.00E+01 | 2.88E+04 | 5.58E+03 | 1.24E+04 | 16 of 16 | 576.00 | 248.64 | 5 |
| Antimony | 1.99E+00 | 3.50E+00 | 8.64E+01 | 5.83E+00 | 1.81E+01 | 7 of 16 | 24.69 | 5.16 | **YES** |
| Arsenic | 1.37E+01 | 1.00E+01 | 2.43E+01 | 2.55E+00 | 8.82E+00 | 16 of 16 | 2.43 | 0.88 | 7 |
| Barium | 1.24E+02 | 1.65E+02 | 1.74E+02 | 3.41E+01 | 7.28E+01 | 16 of 16 | 1.05 | 0.44 | 5 |
| Beryllium | 8.00E-01 | 1.10E+00 | 5.95E+00 | 4.03E-01 | 1.34E+00 | 12 of 16 | 5.41 | 1.22 | **YES** |
| Calcium | 1.72E+03 | NA | 6.73E+04 | 2.62E+02 | 6.19E+03 | 15 of 15 | ND | ND | 2,5 |
| Chromium | 3.70E+01 | 4.00E-01 | 2.51E+01 | 7.89E+00 | 1.48E+01 | 16 of 16 | 62.75 | 36.98 | 3,5 |
| Cobalt | 1.52E+01 | 2.00E+01 | 8.60E+01 | 2.66E+00 | 1.29E+01 | 16 of 16 | 4.30 | 0.64 | 5 |
| Copper | 1.27E+01 | 4.00E+01 | 1.50E+04 | 1.04E+01 | 1.22E+03 | 16 of 16 | 375.00 | 30.51 | **YES** |
| Iron | 3.42E+04 | 2.00E+02 | 4.24E+04 | 1.04E+04 | 2.16E+04 | 16 of 16 | 212.00 | 108.22 | 5 |
| Lead | 4.01E+01 | 5.00E+01 | 2.33E+04 | 8.90E+00 | 1.79E+03 | 55 of 55 | 466.00 | 35.88 | **YES** |
| Magnesium | 1.03E+03 | 4.40E+05 | 2.79E+03 | 3.01E+02 | 8.35E+02 | 16 of 16 | 0.0063 | 0.0019 | 1,2,5 |
| Manganese | 1.58E+03 | 1.00E+02 | 9.08E+02 | 1.83E+02 | 4.63E+02 | 16 of 16 | 9.08 | 4.63 | 3,5 |
| Mercury | 8.00E-02 | 1.00E-01 | 1.38E-01 | 3.16E-02 | 5.58E-02 | 12 of 16 | 1.38 | 0.56 | 5 |
| Nickel | 1.03E+01 | 3.00E+01 | 6.59E+01 | 3.44E+00 | 1.56E+01 | 16 of 16 | 2.20 | 0.52 | 7 |
| Potassium | 8.00E+02 | NA | 1.48E+03 | 3.59E+02 | 6.78E+02 | 16 of 16 | ND | ND | 2,5 |
| Selenium | 4.80E-01 | 8.10E-01 | 1.54E+00 | 5.02E-01 | 7.06E-01 | 9 of 14 | 1.90 | 0.87 | 5 |
| Silver | 3.60E-01 | 2.00E+00 | 1.61E+00 | 1.33E+00 | 1.21E+00 | 3 of 16 | 0.81 | 0.61 | 1,5 |
| Sodium | 6.34E+02 | NA | 1.50E+02 | 3.81E+01 | 6.52E+01 | 13 of 13 | ND | ND | 2,3 |
| Vanadium | 5.88E+01 | 2.00E+00 | 4.82E+01 | 1.26E+01 | 2.46E+01 | 16 of 16 | 24.10 | 12.32 | 3 |
| Zinc | 4.06E+01 | 5.00E+01 | 1.25E+03 | 1.46E+01 | 1.69E+02 | 16 of 16 | 25.00 | 3.39 | **YES** |
| **Herbicides** | | | | | | | | | |
| MCPP | NA | 1.00E-01 | 1.70E+00 | 1.10E+00 | 1.21E+00 | 2 of 11 | 17.00 | 12.14 | 7 |
| **Pesticides** | | | | | | | | | |
| 4,4'-DDT | NA | 2.50E-03 | 4.40E-03 | 4.40E-03 | 2.55E-03 | 1 of 11 | 1.76 | 1.02 | 7 |
| alpha-BHC | NA | 2.50E-03 | 8.10E-04 | 8.10E-04 | 1.54E-03 | 1 of 11 | 0.32 | 0.61 | 1 |
| beta-BHC | NA | 1.00E-03 | 1.50E-03 | 1.50E-03 | 1.60E-03 | 1 of 11 | 1.50 | 1.60 | 7 |
| Endosulfan sulfate | NA | 3.58E-02 | 1.90E-02 | 1.90E-02 | 3.88E-03 | 1 of 11 | 0.53 | 0.11 | 1 |
| Endrin ketone | NA | 1.05E-02 | 2.00E-02 | 2.00E-02 | 3.97E-03 | 1 of 11 | 1.90 | 0.38 | 7 |
| Heptachlor | NA | 1.00E-01 | 1.10E-03 | 1.10E-03 | 1.56E-03 | 1 of 11 | 0.011 | 0.016 | 1 |

## Table 2-1

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 18 (Parcel 74Q)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Nitroaromatics** | | | | | | | | | |
| 2,4-Dinitrotoluene-nitro | NA | 1.28E+00 | 1.60E+00 | 1.60E+00 | 2.78E-01 | 1 of 18 | 1.25 | 0.22 | 7 |
| **Semivolatile Organics** | | | | | | | | | |
| 2,4-Dinitrotoluene-svoc | NA | 1.28E+00 | 1.80E-01 | 1.80E-01 | 1.94E-01 | 1 of 11 | 0.14 | 0.15 | 1 |
| Acenaphthylene | NA | 6.82E+02 | 1.30E-01 | 1.30E-01 | 1.89E-01 | 1 of 11 | 0.0002 | 0.0003 | 1 |
| Anthracene | NA | 1.00E-01 | 2.10E-01 | 2.10E-01 | 1.96E-01 | 1 of 11 | 2.10 | 1.96 | 7 |
| Benzo(a)anthracene | NA | 5.21E+00 | 3.50E-01 | 1.10E-01 | 2.02E-01 | 2 of 11 | 0.067 | 0.039 | 1 |
| Benzo(a)pyrene | NA | 1.00E-01 | 4.40E-01 | 7.30E-02 | 2.07E-01 | 2 of 11 | 4.40 | 2.07 | 7 |
| Benzo(b)fluoranthene | NA | 5.98E+01 | 1.10E+00 | 1.50E-01 | 2.74E-01 | 2 of 11 | 0.0184 | 0.0046 | 1 |
| Benzo(ghi)perylene | NA | 1.19E+02 | 4.60E-01 | 4.60E-01 | 2.19E-01 | 1 of 11 | 0.0039 | 0.0018 | 1 |
| Benzo(k)fluoranthene | NA | 1.48E+02 | 3.70E-01 | 3.70E-01 | 2.11E-01 | 1 of 11 | 0.0025 | 0.0014 | 1 |
| Chrysene | NA | 4.73E+00 | 5.20E-01 | 1.20E-01 | 2.19E-01 | 2 of 11 | 0.11 | 0.05 | 1 |
| Dibenz(a,h)anthracene | NA | 1.84E+01 | 1.50E-01 | 1.50E-01 | 1.91E-01 | 1 of 11 | 0.0082 | 0.0104 | 1 |
| Di-n-butyl phthalate | NA | 2.00E+02 | 2.40E+00 | 2.00E-01 | 3.96E-01 | 2 of 11 | 0.0120 | 0.0020 | 1 |
| Fluoranthene | NA | 1.00E-01 | 4.30E-01 | 2.40E-01 | 2.21E-01 | 2 of 11 | 4.30 | 2.21 | 7 |
| Indeno(1,2,3-cd)pyrene | NA | 1.09E+02 | 5.10E-01 | 5.10E-01 | 2.24E-01 | 1 of 11 | 0.0047 | 0.0021 | 1 |
| N-Nitrosodiphenylamine | NA | 2.00E+01 | 8.50E-01 | 1.90E-01 | 2.55E-01 | 2 of 11 | 0.0425 | 0.0127 | 1 |
| Pyrene | NA | 1.00E-01 | 4.00E-01 | 1.90E-01 | 2.14E-01 | 2 of 11 | 4.00 | 2.14 | 7 |

## Table 2-1

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 18 (Parcel 74Q)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 2-Butanone | NA | 8.96E+01 | 2.90E-02 | 3.40E-03 | 1.23E-02 | 11 of 11 | 0.00032 | 0.00014 | 1 |
| Acetone | NA | 2.50E+00 | 6.80E-01 | 4.50E-02 | 2.00E-01 | 11 of 11 | 0.27 | 0.08 | 1 |
| Trichlorofluoromethane | NA | 1.00E-01 | 1.20E-03 | 1.20E-03 | 2.32E-03 | 1 of 11 | 0.0120 | 0.0232 | 1 |

[a] Surface soil at Parcel 74Q is defined as the interval from 0 to 0.5 feet below ground surface.

[b] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

[c] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[d] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available; however, maximum detected concentration is similar to concentrations of other VOAs which are below their respective ESVs.
7 - Additional lines of evfidence indicate constituent should not be considered a COPEC (see text).

NA - Not Available

## Table 2-2

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 20 (Parcel 76Q)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 1.63E+04 | 5.00E+01 | 1.42E+04 | 1.27E+04 | 1.36E+04 | 4 of 4 | 284.00 | 272.00 | 3,5 |
| Antimony | 1.99E+00 | 3.50E+00 | 1.01E+01 | 9.97E+00 | 8.07E+00 | 2 of 4 | 2.89 | 2.31 | **YES** |
| Arsenic | 1.37E+01 | 1.00E+01 | 4.44E+00 | 1.67E+00 | 3.16E+00 | 4 of 4 | 0.44 | 0.32 | 1,3,5 |
| Barium | 1.24E+02 | 1.65E+02 | 1.73E+02 | 4.64E+01 | 9.14E+01 | 4 of 4 | 1.05 | 0.55 | 5 |
| Beryllium | 8.00E-01 | 1.10E+00 | 1.06E+00 | 4.43E-01 | 6.84E-01 | 4 of 4 | 0.96 | 0.62 | 1,5 |
| Calcium | 1.72E+03 | NA | 8.79E+02 | 6.95E+01 | 3.36E+02 | 4 of 4 | ND | ND | 2,3,5 |
| Chromium | 3.70E+01 | 4.00E-01 | 1.79E+01 | 9.74E+00 | 1.31E+01 | 4 of 4 | 44.75 | 32.78 | 3,5 |
| Cobalt | 1.52E+01 | 2.00E+01 | 8.11E+00 | 1.46E+00 | 5.10E+00 | 4 of 4 | 0.41 | 0.25 | 1,3,5 |
| Copper | 1.27E+01 | 4.00E+01 | 2.48E+02 | 1.53E+01 | 9.78E+01 | 4 of 4 | 6.20 | 2.45 | **YES** |
| Iron | 3.42E+04 | 2.00E+02 | 2.41E+04 | 1.44E+04 | 1.86E+04 | 4 of 4 | 120.50 | 93.00 | 3,5 |
| Lead | 4.01E+01 | 5.00E+01 | 4.47E+03 | 1.34E+01 | 1.42E+03 | 15 of 15 | 89.40 | 28.35 | **YES** |
| Magnesium | 1.03E+03 | 4.40E+05 | 6.57E+02 | 4.80E+02 | 5.87E+02 | 4 of 4 | 0.0015 | 0.0013 | 1,2,3,5 |
| Manganese | 1.58E+03 | 1.00E+02 | 8.00E+02 | 1.40E+01 | 4.23E+02 | 4 of 4 | 8.00 | 4.23 | 3,5 |
| Mercury | 8.00E-02 | 1.00E-01 | 6.27E-02 | 3.19E-02 | 4.98E-02 | 3 of 4 | 0.63 | 0.50 | 1,3,5 |
| Nickel | 1.03E+01 | 3.00E+01 | 5.45E+00 | 2.63E+00 | 4.31E+00 | 4 of 4 | 0.18 | 0.14 | 1,3,5 |
| Potassium | 8.00E+02 | NA | 2.98E+03 | 7.15E+02 | 1.59E+03 | 4 of 4 | ND | ND | 2,5 |
| Sodium | 6.34E+02 | NA | 5.33E+01 | 4.58E+01 | 5.60E+01 | 2 of 4 | ND | ND | 2,3 |
| Vanadium | 5.88E+01 | 2.00E+00 | 2.37E+01 | 1.47E+01 | 1.88E+01 | 4 of 4 | 11.85 | 9.40 | 3 |
| Zinc | 4.06E+01 | 5.00E+01 | 5.56E+01 | 1.25E+01 | 2.99E+01 | 4 of 4 | 1.11 | 0.60 | 5 |
| **Herbicides** | | | | | | | | | |
| 2,4-D | NA | 1.00E-01 | 2.40E-02 | 2.40E-02 | 1.18E-02 | 1 of 3 | 0.24 | 0.12 | 1 |
| **Pesticides** | | | | | | | | | |
| alpha-BHC | NA | 2.50E-03 | 3.30E-04 | 3.30E-04 | 8.93E-04 | 1 of 3 | 0.13 | 0.36 | 1 |
| **Volatile Organics** | | | | | | | | | |
| Acetone | NA | 2.50E+00 | 6.70E-02 | 6.00E-02 | 6.35E-02 | 2 of 2 | 0.027 | 0.025 | 1 |

## Table 2-2

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 20 (Parcel 76Q)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



[a] Surface soil at Parcel 76Q is defined as the interval from 0 to 0.5 feet below ground surface.

[b] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

[c] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[d] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available; however, maximum detected concentration is similar to concentrations of other VOAs which are below their respective ESVs.
7 - Additional lines of evfidence indicate constituent should not be considered a COPEC (see text).

NA - Not Available

## Table 2-3

### Constituents of Potential Ecological Concern in Surface Soil[a]
### Range 23 (Parcel 79Q)
### Baby Bains Gap Road Ranges
### Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 1.63E+04 | 5.00E+01 | 2.34E+04 | 4.20E+03 | 1.00E+04 | 22 of 22 | 468.00 | 200.78 | 5 |
| Antimony | 1.99E+00 | 3.50E+00 | 8.34E+00 | 5.86E+00 | 6.13E+00 | 3 of 22 | 2.38 | 1.75 | **YES** |
| Arsenic | 1.37E+01 | 1.00E+01 | 1.75E+01 | 1.37E+00 | 5.04E+00 | 22 of 22 | 1.75 | 0.50 | 5 |
| Barium | 1.24E+02 | 1.65E+02 | 5.70E+02 | 4.45E+01 | 1.54E+02 | 22 of 22 | 3.45 | 0.93 | 5 |
| Beryllium | 8.00E-01 | 1.10E+00 | 1.60E+00 | 4.12E-01 | 7.89E-01 | 18 of 22 | 1.45 | 0.72 | 5 |
| Calcium | 1.72E+03 | NA | 2.41E+03 | 1.79E+02 | 7.59E+02 | 22 of 22 | ND | ND | 2,5 |
| Chromium | 3.70E+01 | 4.00E-01 | 2.48E+01 | 5.04E+00 | 1.34E+01 | 22 of 22 | 62.00 | 33.60 | 3,5 |
| Cobalt | 1.52E+01 | 2.00E+01 | 3.17E+01 | 1.50E+00 | 9.17E+00 | 21 of 22 | 1.59 | 0.46 | 5 |
| Copper | 1.27E+01 | 4.00E+01 | 1.94E+02 | 8.37E+00 | 5.80E+01 | 22 of 22 | 4.85 | 1.45 | **YES** |
| Iron | 3.42E+04 | 2.00E+02 | 4.27E+04 | 5.80E+03 | 1.63E+04 | 22 of 22 | 213.50 | 81.36 | 5 |
| Lead | 4.01E+01 | 5.00E+01 | 1.01E+04 | 8.79E+00 | 5.10E+02 | 94 of 94 | 202.00 | 10.20 | **YES** |
| Magnesium | 1.03E+03 | 4.40E+05 | 1.26E+03 | 1.80E+02 | 4.80E+02 | 22 of 22 | 0.0029 | 0.0011 | 1,2,5 |
| Manganese | 1.58E+03 | 1.00E+02 | 4.58E+03 | 3.12E+01 | 1.19E+03 | 22 of 22 | 45.80 | 11.87 | 5 |
| Mercury | 8.00E-02 | 1.00E-01 | 7.45E-02 | 3.06E-02 | 4.84E-02 | 13 of 20 | 0.75 | 0.48 | 1,3,5 |
| Nickel | 1.03E+01 | 3.00E+01 | 1.41E+01 | 2.20E+00 | 6.27E+00 | 22 of 22 | 0.47 | 0.21 | 1,5 |
| Potassium | 8.00E+02 | NA | 2.48E+03 | 1.64E+02 | 7.28E+02 | 22 of 22 | ND | ND | 2,5 |
| Selenium | 4.80E-01 | 8.10E-01 | 1.08E+00 | 5.70E-01 | 6.20E-01 | 3 of 22 | 1.33 | 0.77 | 5 |
| Sodium | 6.34E+02 | NA | 1.57E+02 | 3.66E+01 | 7.10E+01 | 16 of 20 | ND | ND | 2,3 |
| Vanadium | 5.88E+01 | 2.00E+00 | 3.94E+01 | 8.78E+00 | 1.89E+01 | 22 of 22 | 19.70 | 9.47 | 3 |
| Zinc | 4.06E+01 | 5.00E+01 | 6.00E+01 | 7.99E+00 | 2.93E+01 | 22 of 22 | 1.20 | 0.59 | 5 |
| **PCB** | | | | | | | | | |
| Aroclor 1260 | NA | 2.00E-02 | 2.20E-02 | 2.20E-02 | 2.36E-02 | 1 of 13 | 1.10 | 1.18 | 7 |
| **Pesticides** | | | | | | | | | |
| 4,4'-DDD | NA | 2.50E-03 | 1.30E-03 | 1.30E-03 | 2.28E-03 | 1 of 13 | 0.52 | 0.91 | 1 |
| 4,4'-DDE | NA | 2.50E-03 | 3.30E-03 | 3.30E-03 | 2.43E-03 | 1 of 13 | 1.32 | 0.97 | 7 |
| 4,4'-DDT | NA | 2.50E-03 | 3.00E-03 | 3.00E-03 | 2.40E-03 | 1 of 13 | 1.20 | 0.96 | 7 |
| Aldrin | NA | 2.50E-03 | 1.30E-02 | 3.80E-03 | 2.30E-03 | 2 of 13 | 5.20 | 0.92 | 7 |
| alpha-BHC | NA | 2.50E-03 | 7.70E-04 | 5.70E-04 | 1.10E-03 | 2 of 13 | 0.31 | 0.44 | 1 |
| alpha-Chlordane | NA | 1.00E-01 | 1.50E-02 | 3.50E-04 | 2.18E-03 | 3 of 13 | 0.15 | 0.02 | 1 |
| beta-BHC | NA | 1.00E-03 | 6.60E-03 | 1.10E-03 | 1.65E-03 | 3 of 13 | 6.60 | 1.65 | 7 |
| Dieldrin | NA | 5.00E-04 | 3.90E-03 | 8.80E-04 | 2.31E-03 | 3 of 13 | 7.80 | 4.62 | 7 |
| Endosulfan I | NA | 1.19E-01 | 7.00E-03 | 7.00E-03 | 1.63E-03 | 1 of 13 | 0.059 | 0.014 | 1 |
| Endosulfan II | NA | 1.19E-01 | 2.50E-02 | 2.50E-02 | 4.11E-03 | 1 of 13 | 0.21 | 0.03 | 1 |
| Endosulfan sulfate | NA | 3.58E-02 | 1.10E-02 | 2.70E-03 | 3.06E-03 | 2 of 13 | 0.31 | 0.09 | 1 |
| Endrin | NA | 1.00E-03 | 3.60E-03 | 3.60E-03 | 2.47E-03 | 1 of 13 | 3.60 | 2.47 | 7 |
| gamma-BHC (Lindane) | NA | 5.00E-05 | 2.10E-02 | 1.20E-03 | 2.71E-03 | 2 of 13 | 420.00 | 54.23 | 7 |
| gamma-Chlordane | NA | 1.00E-01 | 2.40E-03 | 2.40E-03 | 1.27E-03 | 1 of 13 | 0.024 | 0.013 | 1 |
| Methoxychlor | NA | 1.99E-02 | 2.10E-02 | 2.10E-02 | 1.26E-02 | 1 of 13 | 1.06 | 0.63 | 7 |

## Table 2-3

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 23 (Parcel 79Q)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Herbicides** | | | | | | | | | |
| MCPP | NA | 1.00E-01 | 2.90E+00 | 7.40E-01 | 1.27E+00 | 3 of 13 | 29.00 | 12.72 | 7 |
| **Nitroaromatics** | | | | | | | | | |
| 2,4-Dinitrotoluene-nitro | NA | 1.28E+00 | 1.00E+01 | 1.10E+00 | 6.86E-01 | 2 of 22 | 7.81 | 0.54 | 7 |
| 2,6-Dinitrotoluene-nitro | NA | 3.28E-02 | 4.10E-01 | 4.10E-01 | 2.10E-01 | 1 of 22 | 12.50 | 6.39 | 7 |
| **Semivolatile Organics** | | | | | | | | | |
| 2,4-Dinitrotoluene-svoc | NA | 1.28E+00 | 1.90E+00 | 4.20E-01 | 3.47E-01 | 2 of 13 | 1.48 | 0.27 | 7 |
| 2,6-Dinitrotoluene-svoc | NA | 3.28E-02 | 8.60E-02 | 8.60E-02 | 1.89E-01 | 1 of 13 | 2.62 | 5.76 | 7 |
| Benzo(b)fluoranthene | NA | 5.98E+01 | 8.40E-02 | 8.40E-02 | 1.89E-01 | 1 of 13 | 0.0014 | 0.0032 | 1 |
| Chrysene | NA | 4.73E+00 | 6.20E-02 | 6.20E-02 | 1.87E-01 | 1 of 13 | 0.013 | 0.040 | 1 |
| Di-n-butyl phthalate | NA | 2.00E+02 | 1.30E+00 | 1.60E-01 | 2.80E-01 | 2 of 13 | 0.0065 | 0.0014 | 1 |
| Fluoranthene | NA | 1.00E-01 | 8.70E-02 | 8.70E-02 | 1.89E-01 | 1 of 13 | 0.87 | 1.89 | 1 |
| N-Nitrosodiphenylamine | NA | 2.00E+01 | 4.10E+00 | 6.60E-01 | 5.34E-01 | 2 of 13 | 0.21 | 0.03 | 1 |
| Pyrene | NA | 1.00E-01 | 7.00E-02 | 7.00E-02 | 1.88E-01 | 1 of 13 | 0.70 | 1.88 | 1 |
| **Volatile Organics** | | | | | | | | | |
| 2-Butanone | NA | 8.96E+01 | 6.00E-02 | 1.30E-02 | 1.98E-02 | 6 of 10 | 0.0007 | 0.0002 | 1 |
| Acetone | NA | 2.50E+00 | 5.50E-01 | 3.30E-02 | 2.72E-01 | 13 of 13 | 0.22 | 0.11 | 1 |
| Cis-1,2-Dichloroethene | NA | 1.00E-01 | 4.50E-03 | 4.50E-03 | 2.70E-03 | 1 of 13 | 0.045 | 0.027 | 1 |
| Methylene chloride | NA | 2.00E+00 | 3.30E-03 | 3.00E-03 | 4.71E-03 | 2 of 11 | 0.0017 | 0.0024 | 1 |
| p-Cymene | NA | NA | 1.90E-03 | 1.90E-03 | 2.46E-03 | 1 of 13 | ND | ND | 6 |
| Toluene | NA | 5.00E-02 | 2.00E-03 | 9.80E-04 | 2.05E-03 | 5 of 13 | 0.040 | 0.041 | 1 |
| Trichloroethene | NA | 1.00E-03 | 1.80E-03 | 1.80E-03 | 2.50E-03 | 1 of 13 | 1.80 | 2.50 | 7 |
| Trichlorofluoromethane | NA | 1.00E-01 | 3.30E-03 | 3.30E-03 | 2.57E-03 | 1 of 13 | 0.033 | 0.026 | 1 |

[a] Surface soil at Parcel 79Q is defined as the interval from 0 to 0.5 feet below ground surface.

NA - Not Available

[b] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

[c] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[d] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available; however, maximum detected concentration is similar to concentrations of other VOAs which are below their respective ESVs.
7 - Additional lines of evfidence indicate constituent should not be considered a COPEC (see text).

## Table 2-4

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 25 (Parcels 83Q and 118Q-X)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 1.63E+04 | 5.00E+01 | 3.43E+04 | 5.52E+03 | 1.92E+04 | 62 of 62 | 686.00 | 383.32 | 5 |
| Antimony | 1.99E+00 | 3.50E+00 | 2.07E+01 | 4.53E+00 | 6.18E+00 | 9 of 62 | 5.91 | 1.77 | **YES** |
| Arsenic | 1.37E+01 | 1.00E+01 | 3.69E+01 | 2.45E+00 | 8.71E+00 | 62 of 62 | 3.69 | 0.87 | 5 |
| Barium | 1.24E+02 | 1.65E+02 | 4.57E+02 | 5.38E+01 | 1.34E+02 | 62 of 62 | 2.77 | 0.81 | 5 |
| Beryllium | 8.00E-01 | 1.10E+00 | 2.36E+00 | 4.55E-01 | 1.00E+00 | 57 of 57 | 2.15 | 0.91 | 5 |
| Calcium | 1.72E+03 | NA | 6.94E+03 | 7.81E+01 | 1.02E+03 | 62 of 62 | ND | ND | 2,5 |
| Chromium | 3.70E+01 | 4.00E-01 | 1.01E+02 | 8.24E+00 | 2.48E+01 | 62 of 62 | 252.50 | 62.08 | 5 |
| Cobalt | 1.52E+01 | 2.00E+01 | 5.41E+01 | 3.11E+00 | 1.42E+01 | 62 of 62 | 2.71 | 0.71 | 5 |
| Copper | 1.27E+01 | 4.00E+01 | 2.28E+03 | 7.09E+00 | 7.99E+01 | 62 of 62 | 57.00 | 2.00 | **YES** |
| Iron | 3.42E+04 | 2.00E+02 | 7.21E+04 | 8.22E+03 | 2.70E+04 | 62 of 62 | 360.50 | 134.76 | 5 |
| Lead | 4.01E+01 | 5.00E+01 | 2.26E+04 | 7.13E+00 | 6.34E+02 | 62 of 62 | 452.00 | 12.68 | **YES** |
| Magnesium | 1.03E+03 | 4.40E+04 | 2.96E+03 | 4.20E+02 | 1.16E+03 | 62 of 62 | 0.067 | 0.026 | 1,2,5 |
| Manganese | 1.58E+03 | 1.00E+02 | 4.80E+03 | 7.05E+01 | 9.24E+02 | 62 of 62 | 48.00 | 9.24 | 5 |
| Mercury | 8.00E-02 | 1.00E-01 | 6.70E-02 | 2.90E-02 | 5.30E-02 | 13 of 54 | 0.67 | 0.53 | 1,3,5 |
| Nickel | 1.03E+01 | 3.00E+01 | 2.77E+01 | 4.41E+00 | 1.42E+01 | 62 of 62 | 0.92 | 0.47 | 1,5 |
| Potassium | 8.00E+02 | NA | 3.64E+03 | 5.25E+02 | 1.50E+03 | 62 of 62 | ND | ND | 2,5 |
| Selenium | 4.80E-01 | 8.10E-01 | 2.27E+00 | 5.37E-01 | 7.92E-01 | 32 of 62 | 2.80 | 0.98 | 5 |
| Silver | 3.60E-01 | 2.00E+00 | 4.72E+00 | 1.32E+00 | 1.51E+00 | 20 of 62 | 2.36 | 0.75 | 5 |
| Sodium | 6.34E+02 | NA | 1.07E+02 | 2.45E+01 | 5.14E+01 | 54 of 58 | ND | ND | 2,3 |
| Vanadium | 5.88E+01 | 2.00E+00 | 1.31E+02 | 1.37E+01 | 3.89E+01 | 62 of 62 | 65.50 | 19.44 | 4 |
| Zinc | 4.06E+01 | 5.00E+01 | 2.21E+02 | 1.67E+01 | 4.64E+01 | 62 of 62 | 4.42 | 0.93 | 7 |
| **Herbicides** | | | | | | | | | |
| 2,4-D | NA | 1.00E-01 | 7.10E-03 | 7.10E-03 | 5.80E-03 | 1 of 12 | 0.071 | 0.058 | 1 |
| 2,4-DB | NA | 1.00E-01 | 2.10E-02 | 2.00E-02 | 1.30E-02 | 2 of 12 | 0.21 | 0.13 | 1 |
| Dinoseb | NA | 1.00E-01 | 7.60E-03 | 7.60E-03 | 5.84E-03 | 1 of 12 | 0.076 | 0.058 | 1 |

## Table 2-4

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 25 (Parcels 83Q and 118Q-X)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Pesticides** | | | | | | | | | |
| 4,4'-DDT | NA | 2.50E-03 | 5.70E-03 | 8.70E-04 | 5.13E-03 | 3 of 12 | 2.28 | 2.05 | 7 |
| Aldrin | NA | 2.50E-03 | 7.40E-04 | 7.40E-04 | 2.41E-03 | 1 of 12 | 0.30 | 0.96 | 1 |
| beta-BHC | NA | 1.00E-03 | 4.60E-04 | 4.60E-04 | 2.39E-03 | 1 of 12 | 0.46 | 2.39 | 1 |
| Endrin aldehyde | NA | 1.05E-02 | 1.00E-03 | 1.00E-03 | 4.80E-03 | 1 of 12 | 0.10 | 0.46 | 1 |
| Heptachlor | NA | 1.00E-01 | 2.50E-03 | 2.50E-03 | 2.56E-03 | 1 of 12 | 0.025 | 0.026 | 1 |
| Dimethoate | NA | 1.00E-01 | 2.20E-03 | 2.20E-03 | 1.40E-01 | 1 of 12 | 0.022 | 1.40 | 1 |
| Disulfoton | NA | 1.00E-01 | 4.30E-03 | 4.30E-03 | 1.40E-01 | 1 of 12 | 0.043 | 1.40 | 1 |
| Famphur | NA | 1.00E-01 | 3.60E-03 | 3.60E-03 | 1.40E-01 | 1 of 12 | 0.036 | 1.40 | 1 |
| Methyl Parathion | NA | 1.00E-01 | 5.20E-03 | 5.20E-03 | 1.40E-01 | 1 of 12 | 0.052 | 1.40 | 1 |
| Parathion | NA | 1.00E-01 | 3.30E-03 | 3.30E-03 | 1.40E-01 | 1 of 12 | 0.033 | 1.40 | 1 |
| Thionazin | NA | 1.00E-01 | 4.60E-03 | 4.60E-03 | 1.40E-01 | 1 of 12 | 0.046 | 1.40 | 1 |
| **Volatiles** | | | | | | | | | |
| 2-Butanone | NA | 8.96E+01 | 3.70E-02 | 6.20E-03 | 1.64E-02 | 10 of 12 | 0.00041 | 0.00018 | 1 |
| 2-Hexanone | NA | 1.26E+01 | 3.60E-03 | 3.60E-03 | 9.59E-03 | 1 of 12 | 0.00029 | 0.00076 | 1 |
| 4-Methyl-2-pentanone | NA | 4.43E+02 | 5.30E-03 | 2.30E-03 | 8.58E-03 | 3 of 12 | 0.000012 | 0.000019 | 1 |
| Acetone | NA | 2.50E+00 | 3.10E-01 | 4.60E-02 | 1.75E-01 | 10 of 11 | 0.12 | 0.07 | 1 |
| p-Cymene | NA | NA | 1.20E-03 | 1.20E-03 | 2.43E-03 | 1 of 12 | ND | ND | 6 |
| Trichlorofluoromethane | NA | 1.00E-01 | 2.30E-03 | 2.30E-03 | 2.52E-03 | 1 of 11 | 0.023 | 0.025 | 1 |

[a] Surface soil at Parcel 118Q is defined as the interval from 0 to 0.5 feet below ground surface.

NA - Not Available

[b] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

[c] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[d] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available; however, maximum detected concentration is similar to concentrations of other VOAs which are below their respective ESVs.
7 - Additional lines of evfidence indicate constituent should not be considered a COPEC (see text).

## Table 2-5

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 26 (Parcel 84Q)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 1.63E+04 | 5.00E+01 | 1.73E+04 | 1.99E+03 | 8.35E+03 | 19 of 19 | 346.00 | 166.92 | 5 |
| Antimony | 1.99E+00 | 3.50E+00 | 1.53E+01 | 5.10E+00 | 6.12E+00 | 4 of 17 | 4.37 | 1.75 | **YES** |
| Arsenic | 1.37E+01 | 1.00E+01 | 8.43E+00 | 1.78E+00 | 3.50E+00 | 18 of 18 | 0.84 | 0.35 | 1,3,5 |
| Barium | 1.24E+02 | 1.65E+02 | 9.80E+02 | 1.05E+01 | 1.14E+02 | 19 of 19 | 5.94 | 0.69 | 5 |
| Beryllium | 8.00E-01 | 1.10E+00 | 1.25E+00 | 4.35E-01 | 6.81E-01 | 13 of 19 | 1.14 | 0.62 | 5 |
| Calcium | 1.72E+03 | NA | 1.75E+03 | 2.34E+01 | 4.05E+02 | 19 of 19 | ND | ND | 2,5 |
| Chromium | 3.70E+01 | 4.00E-01 | 2.52E+01 | 3.44E+00 | 1.10E+01 | 19 of 19 | 63.00 | 27.49 | 3,5 |
| Cobalt | 1.52E+01 | 2.00E+01 | 2.63E+01 | 1.65E+00 | 5.62E+00 | 18 of 19 | 1.32 | 0.28 | 5 |
| Copper | 1.27E+01 | 4.00E+01 | 1.31E+02 | 5.45E+00 | 3.20E+01 | 19 of 19 | 3.28 | 0.80 | **YES** |
| Iron | 3.42E+04 | 2.00E+02 | 4.58E+04 | 4.00E+03 | 1.52E+04 | 19 of 19 | 229.00 | 75.76 | 5 |
| Lead | 4.01E+01 | 5.00E+01 | 1.01E+04 | 8.53E+00 | 5.73E+02 | 67 of 67 | 202.00 | 11.47 | **YES** |
| Magnesium | 1.03E+03 | 4.40E+05 | 1.01E+03 | 5.96E+01 | 3.68E+02 | 19 of 19 | 0.0023 | 0.0008 | 1,2,3,5 |
| Manganese | 1.58E+03 | 1.00E+02 | 3.94E+03 | 1.25E+01 | 5.25E+02 | 19 of 19 | 39.40 | 5.25 | 5 |
| Mercury | 8.00E-02 | 1.00E-01 | 6.64E-02 | 2.86E-02 | 4.75E-02 | 15 of 19 | 0.66 | 0.48 | 1,3,5 |
| Nickel | 1.03E+01 | 3.00E+01 | 1.62E+01 | 2.00E+00 | 5.18E+00 | 17 of 18 | 0.54 | 0.17 | 1,5 |
| Potassium | 8.00E+02 | NA | 1.79E+03 | 1.83E+02 | 6.58E+02 | 18 of 18 | ND | ND | 2,5 |
| Selenium | 4.80E-01 | 8.10E-01 | 1.56E+00 | 9.67E-01 | 6.34E-01 | 2 of 19 | 1.93 | 0.78 | 5 |
| Sodium | 6.34E+02 | NA | 5.39E+01 | 3.99E+01 | 5.11E+01 | 9 of 19 | ND | ND | 2,3 |
| Thallium | 3.43E+00 | 1.00E+00 | 1.35E+00 | 1.35E+00 | 1.13E+00 | 1 of 17 | 1.35 | 1.13 | 3,5 |
| Vanadium | 5.88E+01 | 2.00E+00 | 4.56E+01 | 5.89E+00 | 1.75E+01 | 19 of 19 | 22.80 | 8.73 | 3 |
| Zinc | 4.06E+01 | 5.00E+01 | 5.03E+01 | 4.42E+00 | 1.98E+01 | 19 of 19 | 1.01 | 0.40 | 5 |
| **Herbicides** | | | | | | | | | |
| 2,2-Dichloropropanoic Acid | NA | 1.00E-01 | 5.40E-03 | 5.40E-03 | 1.07E-02 | 1 of 11 | 0.054 | 0.107 | 1 |
| MCPP | NA | 1.00E-01 | 1.30E+00 | 1.30E+00 | 1.14E+00 | 1 of 11 | 13.00 | 11.41 | 7 |

## Table 2-5

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 26 (Parcel 84Q)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Pesticides** | | | | | | | | | |
| alpha-BHC | NA | 2.50E-03 | 1.30E-03 | 4.20E-04 | 1.97E-03 | 2 of 11 | 0.52 | 0.79 | 1 |
| alpha-Chlordane | NA | 1.00E-01 | 1.20E-02 | 1.20E-02 | 2.12E-03 | 1 of 11 | 0.12 | 0.02 | 1 |
| beta-BHC | NA | 1.00E-03 | 5.30E-03 | 5.30E-03 | 1.51E-03 | 1 of 11 | 5.30 | 1.51 | 7 |
| Dieldrin | NA | 5.00E-04 | 5.10E-04 | 5.10E-04 | 3.88E-03 | 1 of 11 | 1.02 | 7.77 | 7 |
| Endosulfan sulfate | NA | 3.58E-02 | 4.30E-02 | 4.30E-02 | 5.95E-03 | 1 of 11 | 1.20 | 0.17 | 7 |
| **Semivolatile Organics** | | | | | | | | | |
| Acenaphthylene | NA | 6.82E+02 | 8.30E-01 | 8.30E-01 | 2.45E-01 | 1 of 11 | 0.0012 | 0.0004 | 1 |
| Anthracene | NA | 1.00E-01 | 5.20E-01 | 5.20E-01 | 2.16E-01 | 1 of 11 | 5.20 | 2.16 | 7 |
| Benzo(a)anthracene | NA | 5.21E+00 | 3.20E+00 | 1.20E-01 | 4.53E-01 | 3 of 11 | 0.61 | 0.09 | 1 |
| Benzo(a)pyrene | NA | 1.00E-01 | 2.50E+00 | 1.00E-01 | 3.85E-01 | 3 of 11 | 25.00 | 3.85 | 7 |
| Benzo(b)fluoranthene | NA | 5.98E+01 | 5.30E+00 | 1.70E-01 | 6.77E-01 | 3 of 11 | 0.089 | 0.011 | 1 |
| Benzo(ghi)perylene | NA | 1.19E+02 | 1.20E+00 | 6.10E-02 | 2.62E-01 | 3 of 11 | 0.010 | 0.002 | 1 |
| Benzo(k)fluoranthene | NA | 1.48E+02 | 1.90E+00 | 5.80E-02 | 3.30E-01 | 3 of 11 | 0.013 | 0.002 | 1 |
| Chrysene | NA | 4.73E+00 | 3.40E+00 | 5.50E-02 | 4.72E-01 | 4 of 11 | 0.72 | 0.10 | 1 |
| Dibenz(a,h)anthracene | NA | 1.84E+01 | 3.70E-01 | 3.70E-01 | 2.03E-01 | 1 of 11 | 0.020 | 0.011 | 1 |
| Fluoranthene | NA | 1.00E-01 | 5.80E+00 | 1.10E-01 | 7.06E-01 | 4 of 11 | 58.00 | 7.06 | 7 |
| Indeno(1,2,3-cd)pyrene | NA | 1.09E+02 | 1.30E+00 | 6.20E-02 | 2.72E-01 | 3 of 11 | 0.012 | 0.002 | 1 |
| Pentachlorophenol | NA | 2.00E-03 | 8.10E-02 | 8.10E-02 | 3.62E-01 | 1 of 11 | 40.50 | 181.18 | 7 |
| Phenanthrene | NA | 1.00E-01 | 7.60E-01 | 7.60E-01 | 2.38E-01 | 1 of 11 | 7.60 | 2.38 | 7 |
| Pyrene | NA | 1.00E-01 | 5.00E+00 | 9.10E-02 | 6.23E-01 | 4 of 11 | 50.00 | 6.23 | 7 |

## Table 2-5

## Constituents of Potential Ecological Concern in Surface Soil[a]
## Range 26 (Parcel 84Q)
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 2-Butanone | NA | 8.96E+01 | 1.90E-02 | 1.90E-02 | 1.08E-02 | 1 of 6 | 0.00021 | 0.00012 | 1 |
| Acetone | NA | 2.50E+00 | 3.10E-01 | 4.40E-02 | 1.18E-01 | 10 of 10 | 0.124 | 0.047 | 1 |

[a] Surface soil at Parcel 84Q is defined as the interval from 0 to 0.5 feet below ground surface.

NA - Not Available

[b] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

[c] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[d] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available; however, maximum detected concentration is similar to concentrations of other VOAs which are below their respective ESVs.
7 - Additional lines of evfidence indicate constituent should not be considered a COPEC (see text).

## Table 2-6

### Constituents of Potential Ecological Concern in Surface Soil[a]
### Ranges South of Range 25 (Parcels 224Q and 226Q)
### Baby Bains Gap Road Ranges
### Fort McClellan, Calhoun County, Alabama

| Detected Constituents | Background Threshold Value [b] (mg/kg) | Ecological Screening Value [c] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[d] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 1.63E+04 | 5.00E+01 | 1.62E+04 | 4.16E+03 | 9.16E+03 | 16 of 16 | 324.00 | 183.14 | 3,5 |
| Antimony | 1.99E+00 | 3.50E+00 | 7.34E+00 | 4.03E+00 | 5.67E+00 | 9 of 16 | 2.10 | 1.62 | **YES** |
| Arsenic | 1.37E+01 | 1.00E+01 | 1.92E+01 | 2.64E+00 | 5.81E+00 | 16 of 16 | 1.92 | 0.58 | 5 |
| Barium | 1.24E+02 | 1.65E+02 | 1.44E+03 | 2.76E+01 | 1.71E+02 | 16 of 16 | 8.73 | 1.04 | 5 |
| Beryllium | 8.00E-01 | 1.10E+00 | 1.84E+00 | 6.78E-01 | 1.17E+00 | 7 of 7 | 1.67 | 1.06 | 5 |
| Calcium | 1.72E+03 | NA | 1.16E+04 | 2.72E+02 | 1.51E+03 | 15 of 15 | ND | ND | 2,5 |
| Chromium | 3.70E+01 | 4.00E-01 | 4.63E+01 | 6.86E+00 | 2.12E+01 | 16 of 16 | 115.75 | 52.88 | 5 |
| Cobalt | 1.52E+01 | 2.00E+01 | 1.40E+02 | 3.53E+00 | 1.66E+01 | 16 of 16 | 7.00 | 0.83 | 5 |
| Copper | 1.27E+01 | 4.00E+01 | 2.87E+02 | 1.75E+01 | 9.57E+01 | 16 of 16 | 7.18 | 2.39 | **YES** |
| Iron | 3.42E+04 | 2.00E+02 | 4.83E+04 | 1.17E+04 | 2.28E+04 | 16 of 16 | 241.50 | 114.16 | 5 |
| Lead | 4.01E+01 | 5.00E+01 | 2.63E+03 | 1.64E+01 | 8.96E+02 | 16 of 16 | 52.60 | 17.92 | **YES** |
| Magnesium | 1.03E+03 | 4.40E+05 | 6.81E+03 | 1.91E+02 | 8.31E+02 | 16 of 16 | 0.015 | 0.002 | 1,2,5 |
| Manganese | 1.58E+03 | 1.00E+02 | 6.12E+03 | 9.28E+01 | 1.01E+03 | 16 of 16 | 61.20 | 10.14 | 5 |
| Mercury | 8.00E-02 | 1.00E-01 | 8.60E-02 | 3.10E-02 | 5.75E-02 | 10 of 16 | 0.86 | 0.57 | 1,5 |
| Nickel | 1.03E+01 | 3.00E+01 | 2.32E+01 | 4.61E+00 | 1.05E+01 | 16 of 16 | 0.77 | 0.35 | 1,5 |
| Potassium | 8.00E+02 | NA | 1.82E+03 | 4.12E+02 | 7.66E+02 | 15 of 15 | ND | ND | 2,5 |
| Selenium | 4.80E-01 | 8.10E-01 | 5.67E-01 | 4.48E-01 | 5.51E-01 | 3 of 16 | 0.70 | 0.68 | 1,5 |
| Sodium | 6.34E+02 | NA | 4.12E+01 | 2.95E+01 | 4.64E+01 | 4 of 9 | ND | ND | 2,3 |
| Thallium | 3.43E+00 | 1.00E+00 | 3.99E+00 | 8.40E-01 | 1.29E+00 | 3 of 16 | 3.99 | 1.29 | 5 |
| Vanadium | 5.88E+01 | 2.00E+00 | 4.55E+01 | 1.30E+01 | 2.07E+01 | 16 of 16 | 22.75 | 10.35 | 3 |
| Zinc | 4.06E+01 | 5.00E+01 | 5.35E+01 | 1.56E+01 | 2.92E+01 | 16 of 16 | 1.07 | 0.58 | 5 |

[a] Surface soil at RSR-25 is defined as the interval from 0 to 0.5 feet below ground surface.

NA - Not Available

[b] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

[c] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[d] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available; however, maximum detected concentration is similar to concentrations of other VOAs which are below their respective ESVs.
7 - Additional lines of evfidence indicate constituent should not be considered a COPEC (see text).

## Table 2-7

## Constituents of Potential Ecological Concern in Surface Water
## South Branch Tributaries at the Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Detected Constituents | Background Threshold Value [a] (mg/L) | Ecological Screening Value [b] (mg/L) | Maximum Detected Conc. (mg/L) | Minimum Detected Conc. (mg/L) | Mean Detected Conc. (mg/L) | Frequency of Detection | | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[c] |
|---|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | | |
| Aluminum | 5.26E+00 | 8.70E-02 | 2.38E-01 | 2.38E-01 | 2.38E-01 | 1 | 1 | 2.74 | 2.74 | 3 |
| Barium | 7.54E-02 | 3.90E-03 | 9.16E-02 | 9.16E-02 | 9.16E-02 | 1 | 1 | 23.49 | 23.49 | 5 |
| Calcium | 2.52E+01 | 1.16E+02 | 7.63E+01 | 7.63E+01 | 7.63E+01 | 1 | 1 | 0.66 | 0.66 | 1,2,5 |
| Iron | 1.96E+01 | 1.00E+00 | 3.52E-01 | 3.52E-01 | 3.52E-01 | 1 | 1 | 0.35 | 0.35 | 1,3 |
| Lead | 8.67E-03 | 1.32E-03 | 3.97E-03 | 3.97E-03 | 3.97E-03 | 1 | 1 | 3.01 | 3.01 | 3 |
| Magnesium | 1.10E+01 | 8.20E+01 | 1.20E+01 | 1.20E+01 | 1.20E+01 | 1 | 1 | 0.15 | 0.15 | 1,2,4 |
| Manganese | 5.65E-01 | 8.00E-02 | 1.76E-02 | 1.76E-02 | 1.76E-02 | 1 | 1 | 0.22 | 0.22 | 1,3 |
| Potassium | 2.56E+00 | 5.30E+01 | 1.14E+00 | 1.14E+00 | 1.14E+00 | 1 | 1 | 0.022 | 0.022 | 1,2,3 |
| Sodium | 3.44E+00 | 6.80E+02 | 1.57E+00 | 1.57E+00 | 1.57E+00 | 1 | 1 | 0.0023 | 0.0023 | 1,2,3 |

[a] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

NA - Not Available

[b] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[c] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available, maximum detected concentration is less than ESV for similar compounds.

## Table 2-8

## Constituents of Potential Ecological Concern in Surface Water
## Ingram Creek Tributaries at the Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Detected Constituents | Background Threshold Value [a] (mg/L) | Ecological Screening Value [b] (mg/L) | Maximum Detected Conc. (mg/L) | Minimum Detected Conc. (mg/L) | Mean Detected Conc. (mg/L) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[c] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 5.26E+00 | 8.70E-02 | 2.09E-01 | 5.19E-02 | 1.12E-01 | 5 of 9 | 2.40 | 1.29 | 3 |
| Barium | 7.54E-02 | 3.90E-03 | 9.29E-02 | 2.67E-02 | 5.45E-02 | 9 of 9 | 23.82 | 13.96 | 5 |
| Calcium | 2.52E+01 | 1.16E+02 | 8.44E+01 | 5.91E-01 | 3.59E+01 | 9 of 9 | 0.73 | 0.31 | 1,2,5 |
| Iron | 1.96E+01 | 1.00E+00 | 7.19E-01 | 4.04E-02 | 2.09E-01 | 8 of 9 | 0.72 | 0.21 | 1,3 |
| Lead | 8.67E-03 | 1.32E-03 | 2.32E-03 | 1.64E-03 | 4.45E-03 | 2 of 11 | 1.76 | 3.37 | 3 |
| Magnesium | 1.10E+01 | 8.20E+01 | 7.73E+00 | 6.73E-01 | 4.17E+00 | 9 of 9 | 0.094 | 0.051 | 1,2,3,4 |
| Manganese | 5.65E-01 | 8.00E-02 | 9.97E-02 | 3.40E-03 | 3.17E-02 | 7 of 9 | 1.25 | 0.40 | 3 |
| Potassium | 2.56E+00 | 5.30E+01 | 1.69E+00 | 1.03E+00 | 1.81E+00 | 5 of 9 | 0.032 | 0.034 | 1,2,3 |
| Sodium | 3.44E+00 | 6.80E+02 | 1.26E+00 | 7.49E-01 | 1.12E+00 | 9 of 9 | 0.0019 | 0.0016 | 1,2,3 |

[a] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

NA - Not Available

[b] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[c] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available, maximum detected concentration is less than ESV for similar compounds.

## Table 2-9

## Constituents of Potential Ecological Concern in Sediment
## South Branch Tributaries at the Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Detected Constituents | Background Threshold Value [a] (mg/kg) | Ecological Screening Value [b] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[c] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 8.59E+03 | NA | 8.20E+03 | 8.20E+03 | 8.20E+03 | 1 of 1 | ND | ND | 3,5 |
| Arsenic | 1.13E+01 | 7.24E+00 | 5.14E+00 | 5.14E+00 | 5.14E+00 | 1 of 1 | 0.71 | 0.71 | 1,3 |
| Barium | 9.89E+01 | NA | 5.88E+01 | 5.88E+01 | 5.88E+01 | 1 of 1 | ND | ND | 3,5 |
| Beryllium | 9.70E-01 | NA | 5.61E-01 | 5.61E-01 | 5.61E-01 | 1 of 1 | ND | ND | 3,5 |
| Calcium | 1.11E+03 | NA | 7.17E+02 | 7.17E+02 | 7.17E+02 | 1 of 1 | ND | ND | 2,3,5 |
| Chromium | 3.12E+01 | 5.23E+01 | 2.15E+01 | 2.15E+01 | 2.15E+01 | 1 of 1 | 0.41 | 0.41 | 1,3,5 |
| Cobalt | 1.10E+01 | 5.00E+01 | 6.03E+00 | 6.03E+00 | 6.03E+00 | 1 of 1 | 0.12 | 0.12 | 1,3,5 |
| Copper | 1.71E+01 | 1.87E+01 | 2.02E+01 | 2.02E+01 | 2.02E+01 | 1 of 1 | 1.08 | 1.08 | 5 |
| Iron | 3.53E+04 | NA | 1.78E+04 | 1.78E+04 | 1.78E+04 | 1 of 1 | ND | ND | 3,5 |
| Lead | 3.78E+01 | 3.02E+01 | 1.29E+02 | 1.29E+02 | 1.29E+02 | 1 of 1 | 4.27 | 4.27 | 5 |
| Magnesium | 9.06E+02 | NA | 8.41E+02 | 8.41E+02 | 8.41E+02 | 1 of 1 | ND | ND | 2,3,5 |
| Manganese | 7.12E+02 | NA | 1.34E+02 | 1.34E+02 | 1.34E+02 | 1 of 1 | ND | ND | 3,5 |
| Nickel | 1.30E+01 | 1.59E+01 | 9.17E+00 | 9.17E+00 | 9.17E+00 | 1 of 1 | 0.58 | 0.58 | 1,3,5 |
| Potassium | 1.01E+03 | NA | 1.41E+03 | 1.41E+03 | 1.41E+03 | 1 of 1 | ND | ND | 2,5 |
| Vanadium | 4.09E+01 | NA | 1.77E+01 | 1.77E+01 | 1.77E+01 | 1 of 1 | ND | ND | 3 |
| Zinc | 5.27E+01 | 1.24E+02 | 5.68E+01 | 5.68E+01 | 5.68E+01 | 1 of 1 | 0.46 | 0.46 | 1,5 |
| **Volatile Organic Compounds** | | | | | | | | | |
| 2-Butanone | NA | 1.37E-01 | 5.70E-03 | 5.70E-03 | 5.70E-03 | 1 of 1 | 0.042 | 0.042 | 1 |
| Acetone | NA | 4.53E-01 | 7.20E-02 | 7.20E-02 | 7.20E-02 | 1 of 1 | 0.16 | 0.16 | 1 |

[a] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

NA - Not Available

[b] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[c] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available, maximum detected concentration is less than ESV for similar compounds.

## Table 2-10

## Constituents of Potential Ecological Concern in Sediment
## Ingram Creek Tributaries at the Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [a] (mg/kg) | Ecological Screening Value [b] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[c] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 8.59E+03 | NA | 1.57E+04 | 3.79E+03 | 8.59E+03 | 9 of 9 | ND | ND | 5 |
| Antimony | 7.30E-01 | 1.20E+01 | 5.98E+00 | 5.98E+00 | 6.69E+00 | 1 of 9 | 0.50 | 0.56 | 1,5 |
| Arsenic | 1.13E+01 | 7.24E+00 | 1.12E+01 | 2.01E+00 | 6.23E+00 | 9 of 9 | 1.55 | 0.86 | 3 |
| Barium | 9.89E+01 | NA | 2.34E+02 | 4.47E+01 | 1.18E+02 | 9 of 9 | ND | ND | 5 |
| Beryllium | 9.70E-01 | NA | 1.81E+00 | 5.42E-01 | 9.36E-01 | 9 of 9 | ND | ND | 5 |
| Calcium | 1.11E+03 | NA | 1.31E+04 | 2.05E+02 | 3.04E+03 | 9 of 9 | ND | ND | 2,5 |
| Chromium | 3.12E+01 | 5.23E+01 | 1.36E+02 | 1.00E+01 | 2.89E+01 | 9 of 9 | 2.60 | 0.55 | 5 |
| Cobalt | 1.10E+01 | 5.00E+01 | 1.54E+01 | 5.33E+00 | 9.17E+00 | 9 of 9 | 0.31 | 0.18 | 1,5 |
| Copper | 1.71E+01 | 1.87E+01 | 2.20E+02 | 7.81E+00 | 4.00E+01 | 9 of 9 | 11.76 | 2.14 | **YES** |
| Iron | 3.53E+04 | NA | 5.72E+04 | 1.24E+04 | 2.73E+04 | 9 of 9 | ND | ND | 5 |
| Lead | 3.78E+01 | 3.02E+01 | 5.33E+02 | 1.61E+01 | 7.64E+01 | 11 of 11 | 17.65 | 2.53 | **YES** |
| Magnesium | 9.06E+02 | NA | 6.76E+03 | 1.96E+02 | 1.54E+03 | 9 of 9 | ND | ND | 2,5 |
| Manganese | 7.12E+02 | NA | 2.04E+03 | 1.13E+02 | 6.62E+02 | 9 of 9 | ND | ND | 5 |
| Mercury | 1.10E-01 | 1.30E-01 | 9.21E-02 | 5.35E-02 | 6.63E-02 | 2 of 9 | 0.71 | 0.51 | 1,3 |
| Nickel | 1.30E+01 | 1.59E+01 | 1.31E+01 | 4.10E+00 | 8.55E+00 | 9 of 9 | 0.82 | 0.54 | 1,5 |
| Potassium | 1.01E+03 | NA | 2.10E+03 | 3.61E+02 | 1.07E+03 | 9 of 9 | ND | ND | 2,5 |
| Selenium | 7.20E-01 | NA | 9.45E-01 | 9.45E-01 | 6.87E-01 | 1 of 9 | ND | ND | 5 |
| Silver | 3.20E-01 | 2.00E+00 | 4.69E+00 | 4.69E+00 | 1.73E+00 | 1 of 9 | 2.35 | 0.86 | 5 |
| Sodium | 6.92E+02 | NA | 1.46E+02 | 2.79E+01 | 7.04E+01 | 4 of 9 | ND | ND | 2,3 |
| Thallium | 1.30E-01 | NA | 1.32E+00 | 1.32E+00 | 1.34E+00 | 1 of 9 | ND | ND | 5 |
| Vanadium | 4.09E+01 | NA | 3.00E+01 | 8.14E+00 | 1.97E+01 | 9 of 9 | ND | ND | 3 |
| Zinc | 5.27E+01 | 1.24E+02 | 7.39E+01 | 2.01E+01 | 4.01E+01 | 9 of 9 | 0.60 | 0.32 | 1,5 |
| **Herbicides** | | | | | | | | | |
| MCPP | NA | NA | 2.60E+00 | 1.90E+00 | 1.54E+00 | 2 of 9 | ND | ND | 7 |
| **Pesticides** | | | | | | | | | |
| 4,4'-DDT | NA | 3.30E-03 | 3.20E-02 | 3.20E-02 | 5.94E-03 | 1 of 9 | 9.70 | 1.80 | 7 |
| alpha-BHC | NA | 6.00E-03 | 8.70E-03 | 9.50E-04 | 2.13E-03 | 4 of 9 | 1.45 | 0.35 | 7 |
| gamma-Chlordane | NA | 1.70E-03 | 8.90E-02 | 4.20E-03 | 1.14E-02 | 2 of 9 | 52.35 | 6.72 | **YES** |
| Heptachlor | NA | 6.00E-04 | 1.20E-03 | 9.90E-04 | 1.27E-03 | 2 of 9 | 2.00 | 2.11 | 7 |

## Table 2-10

## Constituents of Potential Ecological Concern in Sediment
## Ingram Creek Tributaries at the Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [a] (mg/kg) | Ecological Screening Value [b] (mg/kg) | Maximum Detected Conc. (mg/kg) | Minimum Detected Conc. (mg/kg) | Mean Detected Conc. (mg/kg) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[c] |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | |
| 2-Butanone | NA | 1.37E-01 | 5.00E-02 | 1.30E-02 | 1.83E-02 | 4 of 9 | 0.36 | 0.13 | 1 |
| Acetone | NA | 4.53E-01 | 5.20E-01 | 4.40E-02 | 1.76E-01 | 9 of 9 | 1.15 | 0.39 | 7 |
| Carbon disulfide | NA | 1.34E-01 | 4.20E-03 | 4.20E-03 | 3.25E-03 | 1 of 6 | 0.031 | 0.024 | 1 |
| Methylene chloride | NA | 1.26E+00 | 3.60E-03 | 3.60E-03 | 5.93E-03 | 1 of 6 | 0.0029 | 0.0047 | 1 |
| Toluene | NA | 6.70E-01 | 2.20E-03 | 1.30E-03 | 2.74E-03 | 2 of 9 | 0.0033 | 0.0041 | 1 |

[a] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

NA - Not Available

[b] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[c] Rationale for exclusion as COPEC:

1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available, maximum detected concentration is less than ESV for similar compounds.
7 - Additional lines of evfidence indicate constituent should not be considered a COPEC (see text).

## Table 2-11

## Constituents of Potential Ecological Concern in Groumdwater
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [a] (mg/L) | Ecological Screening Value [b] (mg/L) | Maximum Detected Conc. (mg/L) | Minimum Detected Conc. (mg/L) | Mean Detected Conc. (mg/L) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[c] |
|---|---|---|---|---|---|---|---|---|---|
| **Metals** | | | | | | | | | |
| Aluminum | 2.34E+00 | NA | 1.90E+00 | 5.23E-02 | 3.10E-01 | 11 of 17 | ND | ND | 3 |
| Arsenic | 1.78E-02 | 1.90E-01 | 2.59E-03 | 2.59E-03 | 4.87E-03 | 1 of 19 | 0.014 | 0.026 | 1,3 |
| Barium | 1.27E-01 | 3.90E-03 | 2.56E-01 | 2.62E-02 | 7.78E-02 | 19 of 19 | 65.64 | 19.96 | 5 |
| Calcium | 5.65E+01 | 1.16E+02 | 1.15E+02 | 3.17E+00 | 6.17E+01 | 19 of 19 | 0.99 | 0.53 | 1,2 |
| Iron | 7.04E+00 | 1.00E+00 | 4.50E+00 | 1.80E-02 | 7.57E-01 | 16 of 16 | 4.50 | 0.76 | 3 |
| Lead | 8.00E-03 | 1.32E-03 | 2.38E-03 | 2.38E-03 | 4.86E-03 | 1 of 19 | 1.80 | 3.68 | 3 |
| Magnesium | 2.13E+01 | 8.20E+01 | 1.93E+01 | 3.19E+00 | 6.94E+00 | 16 of 16 | 0.235 | 0.085 | 1,2,3 |
| Manganese | 5.81E-01 | 8.00E-02 | 3.24E+00 | 3.03E-03 | 4.01E-01 | 15 of 17 | 40.50 | 5.01 | 4 |
| Potassium | 7.20E+00 | 5.30E+01 | 7.03E+00 | 9.45E-01 | 2.58E+00 | 5 of 11 | 0.133 | 0.049 | 1,2,3 |
| Sodium | 1.48E+01 | 6.80E+02 | 4.69E+00 | 9.91E-01 | 2.23E+00 | 16 of 16 | 0.0069 | 0.0033 | 1,2,3 |
| Thallium | 1.46E-03 | 4.00E-03 | 3.84E-03 | 3.84E-03 | 4.94E-03 | 1 of 19 | 0.96 | 1.23 | 1,5 |
| **Pesticides** | | | | | | | | | |
| 4,4'-DDD | NA | 6.40E-06 | 8.90E-05 | 8.90E-05 | 9.48E-05 | 1 of 5 | 13.91 | 14.81 | 7 |
| 4,4'-DDT | NA | 1.00E-06 | 7.70E-05 | 7.70E-05 | 9.24E-05 | 1 of 5 | 77.00 | 92.40 | 7 |
| alpha-Chlordane | NA | 4.30E-06 | 3.80E-05 | 1.10E-05 | 3.89E-05 | 2 of 5 | 8.84 | 9.05 | 7 |
| beta-BHC | NA | 5.00E+01 | 9.10E-05 | 1.90E-05 | 4.75E-05 | 3 of 5 | 1.82E-06 | 9.50E-07 | 1 |
| Endosulfan I | NA | 5.60E-05 | 7.80E-05 | 7.80E-05 | 5.44E-05 | 1 of 5 | 1.39 | 0.97 | 7 |
| Endrin | NA | 2.30E-06 | 5.40E-05 | 5.40E-05 | 8.78E-05 | 1 of 5 | 23.48 | 38.17 | 7 |
| gamma-BHC (Lindane) | NA | 8.00E-05 | 1.30E-04 | 1.30E-04 | 6.52E-05 | 1 of 5 | 1.63 | 0.82 | 7 |
| Heptachlor | NA | 3.80E-06 | 1.20E-04 | 1.20E-04 | 6.28E-05 | 1 of 5 | 31.58 | 16.53 | 7 |
| **Nitroaromatics** | | | | | | | | | |
| 2,4-Dinitrotoluene | NA | 2.30E-01 | 1.10E-03 | 1.10E-03 | 2.47E-04 | 1 of 19 | 0.0048 | 0.0011 | 1 |
| 2,6-Dinitrotoluene | NA | 4.20E-02 | 3.70E-04 | 3.70E-04 | 2.09E-04 | 1 of 19 | 0.0088 | 0.0050 | 1 |
| 2-Nitrotoluene | NA | NA | 3.20E-04 | 3.20E-04 | 2.06E-04 | 1 of 19 | ND | ND | 6 |
| 3-Nitrotoluene | NA | NA | 6.50E-04 | 6.50E-04 | 3.18E-04 | 1 of 19 | ND | ND | 6 |
| 4-Amino-2,6-dinitrotoluene | NA | NA | 4.00E-04 | 4.00E-04 | 2.11E-04 | 1 of 19 | ND | ND | 6 |

## Table 2-11

## Constituents of Potential Ecological Concern in Groumdwater
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama



| Detected Constituents | Background Threshold Value [a] (mg/L) | Ecological Screening Value [b] (mg/L) | Maximum Detected Conc. (mg/L) | Minimum Detected Conc. (mg/L) | Mean Detected Conc. (mg/L) | Frequency of Detection | Maximum Hazard Quotient | Mean Hazard Quotient | Constituent Of Potential Ecological Concern[c] |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| Carbon disulfide | NA | 8.40E-02 | 6.80E-04 | 6.80E-04 | 5.36E-04 | 1 of 5 | 0.008 | 0.006 | 1 |

[a] Background threshold value is 2-times the arithmetic mean background concentration as reported in "Final Background Metals Survey Report, Ft. McClellan, Alabama" (SAIC, 1998).

NA - Not Available

[b] Ecological screening values are presented in "Human Health and Ecological Screening Values and PAH Background Summary Report" (IT Corp., 2000).

[c] Rationale for exclusion as COPEC:
1 - Maximum detected concentration is less than ecological screening value (ESV).
2 - Essential macronutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentration).
3 - Maximum detected concentration is less than background threshold value.
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available, maximum detected concentration is less than ESV for similar compounds.
7 - Additional lines of evfidence indicate constituent should not be considered a COPEC (see text).

## Table 3-1

## Assessment Endpoints, Risk Hypotheses, and Measurement Endpoints
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Assessment Endpoint | Risk Hypothesis | Measurement Endpoint |
|---|---|---|
| **Terrestrial Ecosystems :** | | |
| I. Survival and growth of the terrestrial plant communities at the BBGR ranges. | IA. Is the survival and growth of terrestrial plants exposed to surface soil from the BBGR ranges significantly lower than that for terrestrial plants exposed to soil from reference sites? | IA. Statistical comparison of perennial ryegrass seed germination success, plant height, above ground biomass, root length, and root biomass between plants grown in on-site soils from the BBGR ranges to plants grown in soils from a reference location. |
| | IB. Are concentrations of COPECs in surface soil at the BBGR ranges greater than ESVs for the survival or growth of terrestrial plants? | IB. Comparison of COPEC concentrations in surface soil at the BBGR ranges to ESVs for the survival and growth of terrestrial plants. |
| II. Survival and growth of the terrestrial invertebrate community at the BBGR ranges. | IIA. Is the survival and growth of terrestrial invertebrates exposed to surface soil from the BBGR ranges significantly lower than that for terrestrial invertebrates exposed to soil from reference sites? | IIA. Statistical comparison of earthworm survival rates and body weights between earthworms exposed to on-site soils from the BBGR ranges to earthworms exposed to soils from a reference location. |
| | IIB. Are concentrations of COPECs in surface soil at the BBGR ranges greater than ESvs for the survival or growth of terrestrial invertebraters? | IIB. Comparison of COPEC concentrations in surface soil at the BBGR ranges to ESVs for the survival and growth of terrestrial invertebrates. |
| III. Survival, growth, and reproduction of terrestrial invertivorous small mammals and birds at the BBGR ranges. | III. Does the daily dose of COPECs received by terrestrial invertivorous small mammals or birds via consumption of tissues of prey species and from other media at the BBGR ranges exceed the toxicity reference values (TRVs) for survival, reproduction, or growth? | IIIA. Comparison of calculated daily doses of COPECs for terrestrial invertivorous small mammal (shorttail shrew) and invertivorous bird (American woodcock) to TRVs. |
| | | IIIB. Quantification of COPEC concentrations in tissues of earthworms exposed to soils from the BBGR ranges and earthworms exposed to soils from a reference location. |
| **Terrestrial Ecosystems :** | | |

## Table 3-1

## Assessment Endpoints, Risk Hypotheses, and Measurement Endpoints
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Assessment Endpoint | Risk Hypothesis | Measurement Endpoint |
|---|---|---|
| IV. Survival, growth, and reproduction of terrestrial omnivorous small mammals and birds at the BBGR ranges. | IV. Does the daily dose of COPECs received by terrestrial omnivorous small mammals or birds via consumption of tissues of prey species and from other media at the BBGR ranges exceed the toxicity reference values (TRVs) for survival, reproduction, or growth? | IVA. Comparison of calculated daily doses of COPECs for terrestrial omnvorous small mammal (white-footed mouse) and omnivorous bird (American robin) to TRVs. |
| | | IVB. Quantification of COPEC concentrations in tissues of earthworms exposed to soils from the BBGR ranges and earthworms exposed to soils from a reference location. |
| | | IVC. Quantification of COPEC concentrations in tissues of terrestrial plants from the BBGR ranges and terrestrial plants from a reference location. |

## Table 3-1

## Assessment Endpoints, Risk Hypotheses, and Measurement Endpoints
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Assessment Endpoint | Risk Hypothesis | Measurement Endpoint |
|---|---|---|
| **Aquatic Ecosystems :** | | |
| I. Survival, growth, and reproduction of aquatic benthic invertebrates in the South Branch of Cane Creek and Ingram Creek and their tributaries at the BBGR ranges. | IA. Is the survival and growth of aquatic benthic invertebrates exposed to sediment from the South Branch of Cane Creek and Ingram Creek and their tributaries at the BBGR ranges significantly lower than that for aquatic benthic invertebrates exposed to sediment from reference sites? | IA. Comparison of survival and growth of the benthic amphipod *Chironomus riparius* exposed to "on-site" sediment to survival and growth of *Chironomus riparius* exposed to sediment from a reference stream. |
| | IB. Is the benthic community structure significantly different in reaches of the South Branch of Cane Creek and Ingram Creek and their tributaries at the BBGR ranges compared to benthic communities in reference streams? | IB. Comparison of benthic community assemblage from the South Branch of Cane Creek and Ingram Creek and their tributaries at the BBGR ranges with the benthic community assemblage from a reference stream using RBPII methodology. |
| | IC. Are the concentrations of COPECs in sediment from the South Branch of Cane Creek and Ingram Creek and their tributaries at the BBGR ranges greater than ESVs for the survival, growth, and reproduction of aquatic benthic invertebrates? | IC. Comparison of COPEC concentrations in sediment from the South Branch of Cane Creek and Ingram Creek and their tributaries at the BBGR ranges to ESVs for the survival and growth of aquatic benthic invertebrates. |
| II. Survival, growth, and reproduction of riparian invertivorous small mammals and birds at the BBGR ranges. | II. Does the daily dose of COPECs received by riparian invertivorous small mammals or birds via consumption of tissues of prey species and from other media at the BBGR ranges exceed the toxicity reference values (TRVs) for survival, reproduction, or growth? | IIA. Comparison of calculated total daily doses of COPECs for riparian invertivorous mammal (little brown bat) and invertivorous bird (marsh wren) to TRVs. |
| | | IIB. Quantification of COPEC concentrations in tissues of chironomids exposed to sediment from the South Branch of Cane Creek and Ingram Creek and their tributaries at the BBGR ranges and from a reference location. |

## Table 5-1

### Surface Soil Sample Analytical Results
### Baby Bains Gap Road Ranges BERA
### Fort McClellan, Calhoun County, Alabama



| Sample Number | | | | SY0011 | | | | SY0002 | | | | SY0010 | | | | SY0001 | | | | SY0004 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | | | | BBGR-BERA-REF-SS | | | | BBGR-BERA-SS01 | | | | HR-118Q-DEP1 | | | | HR-74Q-GP52 | | | | HR-74Q-GP63200SE | | | |
| Sample Date | | | | 6-Oct-06 | | | | 10-Oct-06 | | | | 7-Oct-06 | | | | 6-Oct-06 | | | | 6-Oct-06 | | | |
| Sample Depth (Feet) | | | | 0 - 0.5 ft. | | | | 0 - 0.5 ft. | | | | 0 - 0.5 ft. | | | | 0 - 0.5 ft. | | | | 0 - 0.5 ft. | | | |
| Parameter | Units | BTV[a] | ESV[b] | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV |
| **PESTICIDES** | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | mg/kg | NA | 0.0025 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| 4,4'-DDT | mg/kg | NA | 0.0025 | ND | | | | ND | | | | 0.0064 | J | | YES | ND | | | | ND | | | |
| Dieldrin | mg/kg | NA | 0.0005 | ND | | | | ND | | | | 0.002 | J | | YES | ND | | | | ND | | | |
| Endosulfan sulfate | mg/kg | NA | 0.03578 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| Endrin | mg/kg | NA | 0.001 | ND | | | | ND | | | | 0.0019 | J | | YES | ND | | | | ND | | | |
| Methoxychlor | mg/kg | NA | 0.01988 | ND | | | | 0.0066 | J | | | ND | | | | ND | | | | ND | | | |
| alpha-BHC | mg/kg | NA | 0.0025 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| alpha-Chlordane | mg/kg | NA | 0.1 | ND | | | | ND | | | | 0.0012 | J | | | ND | | | | ND | | | |
| delta-BHC | mg/kg | NA | 9.94 | 0.0026 | J | | | ND | | | | ND | | | | ND | | | | ND | | | |
| gamma-Chlordane | mg/kg | NA | 0.1 | ND | | | | ND | | | | 0.0066 | | | | ND | | | | ND | | | |
| **METALS** | | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 16306 | 50 | 6100 | | | YES | 5550 | | | YES | 8490 | | | YES | 9690 | | | YES | 7330 | | | YES |
| Antimony | mg/kg | 1.99 | 3.5 | 2.94 | J | YES | | 4.92 | J | YES | YES | 1310 | J | YES | YES | 0.899 | J | | | 0.724 | J | | |
| Arsenic | mg/kg | 13.73 | 10 | 6.1 | | | | 4.28 | | | | 4.39 | | | | 3.76 | | | | 4.41 | | | |
| Barium | mg/kg | 123.94 | 165 | 73.3 | | | | 80.8 | | | | 178 | | YES | YES | 102 | | | | 117 | | | |
| Beryllium | mg/kg | 0.8 | 1.1 | 0.757 | | | | 0.444 | J | | | 1.67 | | YES | YES | 0.583 | | | | 1.02 | | YES | |
| Cadmium | mg/kg | 0.29 | 1.6 | 0.268 | J | | | 0.278 | J | | | 0.174 | J | | | 0.141 | J | | | 0.251 | J | | |
| Calcium | mg/kg | 1723 | | 2370 | | YES | | 514 | | | | 1210 | | | | 837 | | | | 788 | | | |
| Chromium | mg/kg | 37.04 | 0.4 | 12.4 | | | YES | 16 | | | YES | 10.9 | | | YES | 10.9 | | | YES | 8.49 | | | YES |
| Cobalt | mg/kg | 15.15 | 20 | 21 | | YES | YES | 2.94 | | | | 9.6 | | | | 12 | | | | 10.7 | | | |
| Copper | mg/kg | 12.71 | 40 | 35.1 | | YES | | 152 | | YES | YES | 563 | | YES | YES | 19.9 | | YES | | 16.5 | | YES | |
| Iron | mg/kg | 34154 | 200 | 23200 | J | | YES | 12800 | J | | YES | 16800 | J | | YES | 11900 | J | | YES | 12500 | J | | YES |
| Lead | mg/kg | 40.05 | 50 | 48.5 | | YES | | 526 | J | YES | YES | 146000 | | YES | YES | 102 | | YES | YES | 125 | | YES | YES |
| Magnesium | mg/kg | 1033 | 440000 | 1240 | | YES | | 174 | | | | 458 | | | | 308 | | | | 360 | | | |
| Manganese | mg/kg | 1579 | 100 | 707 | | | YES | 428 | | | YES | 3110 | | YES | YES | 1760 | | YES | YES | 1480 | | | YES |
| Mercury | mg/kg | 0.08 | 0.1 | ND | | | | ND | | | | 0.084 | J | YES | | ND | | | | ND | | | |
| Nickel | mg/kg | 10.33 | 30 | 7.48 | | | | 8.54 | | | | 15.2 | | YES | | 5.03 | | | | 5.94 | | | |
| Potassium | mg/kg | 799.76 | | 734 | | | | 365 | | | | 737 | | | | 275 | | | | 502 | | | |
| Selenium | mg/kg | 0.48 | 0.81 | 0.71 | | YES | | 0.293 | J | | | 0.549 | J | YES | | 0.523 | J | YES | | 0.502 | J | YES | |
| Silver | mg/kg | 0.36 | 2 | ND | | | | 0.243 | J | | | 1.61 | | YES | | ND | | | | ND | | | |
| Sodium | mg/kg | 634.28 | | 46.7 | B | | | 71.9 | B | | | 50.4 | B | | | 54.4 | B | | | 51.7 | B | | |
| Thallium | mg/kg | 3.43 | 1 | 0.134 | J | | | 0.347 | J | | | ND | | | | 0.173 | J | | | 0.125 | J | | |
| Vanadium | mg/kg | 58.84 | 2 | 25.6 | | | YES | 18.5 | | | YES | 21.2 | | | YES | 20.4 | | | YES | 16.5 | | | YES |
| Zinc | mg/kg | 40.64 | 50 | 37.3 | | | | 154 | | YES | YES | 113 | | YES | YES | 20.1 | | | | 25.4 | | | |
| pH | | | | 7.13 | | | | 5.36 | | | | 5.3 | | | | 5.59 | | | | 5.11 | | | |
| **SEMIVOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | | | | | | | | | | | | |
| Di-n-butyl phthalate | mg/kg | NA | 200 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| Fluoranthene | mg/kg | 2.031 | 0.1 | ND | | | | 0.2 | J | | YES | ND | | | | ND | | | | ND | | | |
| Pyrene | mg/kg | 1.626 | 0.1 | ND | | | | 0.24 | J | | YES | ND | | | | ND | | | | ND | | | |
| **TOTAL ORGANIC CARBON** | | | | | | | | | | | | | | | | | | | | | | | |
| Total Organic Carbon | mg/kg | NA | | 17900 | | | | 8290 | | | | 57700 | | | | 11800 | | | | 17100 | | | |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | | | | | | | | | | | | |
| 2-Butanone | mg/kg | NA | 89.6 | 0.021 | | | | 0.0099 | J | | | 0.039 | | | | 0.019 | | | | 0.024 | | | |
| Acetone | mg/kg | NA | 2.5 | 0.24 | J | | | 0.12 | J | | | 0.78 | J | | | 0.4 | J | | | 0.25 | J | | |

## Table 5-1

### Surface Soil Sample Analytical Results
### Baby Bains Gap Road Ranges BERA
### Fort McClellan, Calhoun County, Alabama



| Sample Number | | | | SY0009 | | | | SY0005 | | | | SY0008 | | | | SY0006 | | | | SY0007 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | | | | HR-74Q-GP66 | | | | HR-79Q-GP31 | | | | HR-79Q-SS06 | | | | HR-79Q-SS09 | | | | HR-84Q-GP29 | | | |
| Sample Date | | | | 6-Oct-06 | | | | 7-Oct-06 | | | | 10-Oct-06 | | | | 7-Oct-06 | | | | 10-Oct-06 | | | |
| Sample Depth (Feet) | | | | 0 - 0.5 ft. | | | | 0 - 0.5 ft. | | | | 0 - 0.5 ft. | | | | 0 - 0.5 ft. | | | | 0 - 0.5 ft. | | | |
| Parameter | Units | BTV[a] | ESV[b] | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV |
| **PESTICIDES** | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | mg/kg | NA | 0.0025 | ND | | | | ND | | | | 0.0091 | | | YES | ND | | | | ND | | | |
| 4,4'-DDT | mg/kg | NA | 0.0025 | 0.0089 | | | YES | ND | | | | ND | | | | ND | | | | ND | | | |
| Dieldrin | mg/kg | NA | 0.0005 | ND | | | | ND | | | | ND | | | | ND | | | | 0.0054 | J | | YES |
| Endosulfan sulfate | mg/kg | NA | 0.03578 | ND | | | | ND | | | | 0.0029 | J | | | ND | | | | ND | | | |
| Endrin | mg/kg | NA | 0.001 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| Methoxychlor | mg/kg | NA | 0.01988 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| alpha-BHC | mg/kg | NA | 0.0025 | ND | | | | 0.00077 | J | | | ND | | | | ND | | | | ND | | | |
| alpha-Chlordane | mg/kg | NA | 0.1 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| delta-BHC | mg/kg | NA | 9.94 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| gamma-Chlordane | mg/kg | NA | 0.1 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| **METALS** | | | | | | | | | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 16306 | 50 | 7470 | | | YES | 5630 | | | YES | 12000 | | | YES | 6910 | | | YES | 6350 | | | YES |
| Antimony | mg/kg | 1.99 | 3.5 | 5.29 | J | YES | YES | 2.79 | J | YES | | 7.35 | J | YES | YES | 2.11 | J | YES | | 2.77 | J | YES | |
| Arsenic | mg/kg | 13.73 | 10 | 4.75 | | | | 2.57 | | | | 14.8 | | YES | YES | 8.43 | | | | 3.83 | | | |
| Barium | mg/kg | 123.94 | 165 | 73.2 | | | | 94.9 | | | | 68.4 | | | | 73.4 | | | | 37.2 | | | |
| Beryllium | mg/kg | 0.8 | 1.1 | 0.685 | | | | 0.705 | | | | 0.624 | | | | 0.597 | | | | 0.156 | J | | |
| Cadmium | mg/kg | 0.29 | 1.6 | ND | | | | 0.157 | J | | | 0.163 | J | | | 0.132 | J | | | 0.151 | J | | |
| Calcium | mg/kg | 1723 | | 413 | | | | 812 | | | | 534 | | | | 625 | | | | 302 | | | |
| Chromium | mg/kg | 37.04 | 0.4 | 11.2 | | | YES | 8.13 | | | YES | 13.3 | | | YES | 17.4 | | | YES | 13.6 | | | YES |
| Cobalt | mg/kg | 15.15 | 20 | 6.47 | | | | 7.61 | | | | 9.61 | | | | 6.77 | | | | 2.24 | | | |
| Copper | mg/kg | 12.71 | 40 | 184 | | YES | YES | 28 | | YES | | 74.1 | | YES | YES | 36.5 | | YES | | 44.6 | | YES | YES |
| Iron | mg/kg | 34154 | 200 | 16000 | J | | YES | 6480 | J | | YES | 26000 | J | | YES | 17600 | J | | YES | 10700 | J | | YES |
| Lead | mg/kg | 40.05 | 50 | 919 | | YES | YES | 338 | | YES | YES | 1240 | | YES | YES | 471 | | YES | YES | 338 | | YES | YES |
| Magnesium | mg/kg | 1033 | 440000 | 277 | | | | 239 | | | | 389 | | | | 294 | | | | 169 | | | |
| Manganese | mg/kg | 1579 | 100 | 756 | | | YES | 1220 | | | YES | 1900 | | YES | YES | 709 | | | YES | 324 | | | YES |
| Mercury | mg/kg | 0.08 | 0.1 | ND | | | | ND | | | | 0.0451 | J | | | 0.0376 | J | | | ND | | | |
| Nickel | mg/kg | 10.33 | 30 | 5.45 | | | | 3.48 | | | | 6.97 | | | | 4.31 | | | | 5.83 | | | |
| Potassium | mg/kg | 799.76 | | 623 | | | | 271 | | | | 518 | | | | 592 | | | | 232 | | | |
| Selenium | mg/kg | 0.48 | 0.81 | 0.371 | J | | | 0.516 | J | YES | | 0.312 | J | | | 0.408 | J | | | 0.111 | J | | |
| Silver | mg/kg | 0.36 | 2 | ND | | | | ND | | | | 0.119 | J | | | ND | | | | ND | | | |
| Sodium | mg/kg | 634.28 | | 49.4 | B | | | 47.2 | B | | | 78.3 | B | | | 44.2 | B | | | 57.4 | B | | |
| Thallium | mg/kg | 3.43 | 1 | 0.166 | J | | | ND | | | | 0.262 | J | | | 0.338 | J | | | ND | | | |
| Vanadium | mg/kg | 58.84 | 2 | 20 | | | YES | 10.8 | | | YES | 33.3 | | | YES | 19.9 | | | YES | 19.8 | | | YES |
| Zinc | mg/kg | 40.64 | 50 | 53.5 | | YES | YES | 22.3 | | | | 27.4 | | | | 26 | | | | 33.5 | | | |
| pH | | | | 4.88 | | | | 5.14 | | | | 5.08 | | | | 4.94 | | | | 5.04 | | | |
| **SEMIVOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | | | | | | | | | | | | |
| Di-n-butyl phthalate | mg/kg | NA | 200 | ND | | | | ND | | | | ND | | | | ND | | | | 0.37 | | | |
| Fluoranthene | mg/kg | 2.031 | 0.1 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| Pyrene | mg/kg | 1.626 | 0.1 | ND | | | | ND | | | | ND | | | | ND | | | | ND | | | |
| **TOTAL ORGANIC CARBON** | | | | | | | | | | | | | | | | | | | | | | | |
| Total Organic Carbon | mg/kg | NA | | 10700 | | | | 29300 | | | | 8050 | | | | 19000 | | | | 4340 | | | |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | | | | | | | | | | | | |
| 2-Butanone | mg/kg | NA | 89.6 | 0.012 | | | | 0.022 | | | | 0.021 | | | | 0.013 | | | | 0.0071 | J | | |
| Acetone | mg/kg | NA | 2.5 | 0.15 | J | | | 0.45 | J | | | 0.37 | J | | | 0.17 | J | | | 0.093 | J | | |

[a] BTV - Background threshold value. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in SAIC, 1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.

[b] Ecological screening value (ESV) as given in IT, 2000, *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit.

J - Compound was positively identified; reported value is an estimated concentration.

mg/kg - Milligrams per kilogram.

NA - Not available.

ND - Not detected.

Qual - Data validation qualifier.

## Table 5-2

## Sediment Sample Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number<br>Sample Location<br>Sample Date<br>Sample Depth (Feet) | | | | SY1015<br>BBGR-BERA-REF-SED<br>8-Oct-06<br>0 - 0.5 ft. | | | | SY1014<br>BBGR-BERA-SD01<br>7-Oct-06<br>0 - 0.5 ft. | | | | SY1006<br>BBGR-BERA-SD02<br>6-Oct-06<br>0 - 0.5 ft. | | | | SY1007<br>BBGR-BERA-SD03<br>7-Oct-06<br>0 - 0.5 ft. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Units | BTV[a] | ESV[b] | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV |
| **PESTICIDES** | | | | | | | | | | | | | | | | | | | |
| alpha-BHC | mg/kg | NA | 0.006 | ND | | | | ND | | | | ND | | | | ND | | | |
| gamma-Chlordane | mg/kg | NA | 0.0017 | ND | | | | ND | | | | 0.0028 | J | | YES | ND | | | |
| **METALS** | | | | | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 8593 | | 2530 | J | | | 4270 | J | | | 6520 | J | | | 4320 | J | | |
| Antimony | mg/kg | 0.73 | 12 | 0.127 | J | | | 0.816 | J | YES | | 0.808 | J | YES | | 0.543 | J | | |
| Arsenic | mg/kg | 11.33 | 7.24 | 2.33 | | | | 4.05 | | | | 6.09 | | | | 4.44 | | | |
| Barium | mg/kg | 98.91 | | 31.9 | | | | 54 | | | | 340 | | YES | | 73.9 | | | |
| Beryllium | mg/kg | 0.97 | | 0.703 | | | | 0.781 | | | | 1.06 | | YES | | 1.15 | | YES | |
| Cadmium | mg/kg | 0.43 | 1 | ND | | | | 0.291 | J | | | 0.316 | J | | | 0.199 | J | | |
| Calcium | mg/kg | 1111.51 | | 190 | J | | | 3070 | J | YES | | 1940 | J | YES | | 2650 | J | YES | |
| Chromium | mg/kg | 31.15 | 52.3 | 6.64 | | | | 11.7 | | | | 16.1 | | | | 11.7 | | | |
| Cobalt | mg/kg | 11.01 | 50 | 2.74 | | | | 6.25 | | | | 13.7 | | YES | | 7.12 | | | |
| Copper | mg/kg | 17.12 | 18.7 | 2.69 | J | | | 10.1 | J | | | 21.9 | J | YES | YES | 17.2 | J | YES | |
| Iron | mg/kg | 35267 | | 16300 | | | | 14800 | | | | 29000 | | | | 16200 | | | |
| Lead | mg/kg | 37.82 | 30.2 | 5.39 | J | | | 26.2 | J | | | 99.7 | J | YES | YES | 34.2 | J | | YES |
| Magnesium | mg/kg | 905.94 | | 108 | J | | | 968 | | YES | | 1280 | | YES | | 328 | | | |
| Manganese | mg/kg | 712.31 | | 195 | | | | 127 | | | | 2870 | | YES | | 235 | | | |
| Nickel | mg/kg | 13.02 | 15.9 | 2.93 | | | | 7.18 | | | | 12.6 | | | | 5.25 | | | |
| Potassium | mg/kg | 1013.48 | | 818 | | | | 803 | | | | 1220 | | YES | | 511 | | | |
| Selenium | mg/kg | 0.72 | | 0.134 | J | | | 0.449 | J | | | 0.514 | J | | | 0.568 | J | | |
| Silver | mg/kg | 0.32 | 2 | ND | | | | 0.205 | J | | | ND | | | | ND | | | |
| Sodium | mg/kg | 692.29 | | ND | | | | 45.3 | J | | | 40.2 | J | | | 29.7 | J | | |
| Thallium | mg/kg | 0.13 | | ND | | | | 0.16 | J | YES | | 0.386 | J | YES | | ND | | | |
| Vanadium | mg/kg | 40.87 | | 11 | | | | 14.1 | | | | 20.4 | | | | 13.6 | | | |
| Zinc | mg/kg | 52.74 | 124 | 11.8 | J | | | 29.4 | J | | | 137 | J | YES | YES | 18.7 | J | | |
| pH | | | | 6.24 | | | | 6.5 | | | | 6.69 | | | | 6.95 | | | |
| **TOTAL ORGANIC CARBON** | | | | | | | | | | | | | | | | | | | |
| Total Organic Carbon | mg/kg | NA | | 1250 | | | | 9050 | | | | 9730 | | | | 11700 | | | |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | | | | | | | | |
| 2-Butanone | mg/kg | NA | 0.13696 | 0.0078 | J | | | 0.014 | J | | | 0.0065 | J | | | 0.025 | | | |
| Acetone | mg/kg | NA | 0.45337 | 0.11 | J | | | 0.19 | J | | | 0.089 | J | | | 0.57 | J | | YES |
| Carbon disulfide | mg/kg | NA | 0.13397 | ND | | | | 0.0033 | J | | | ND | | | | ND | | | |
| Chloroform | mg/kg | NA | 0.027 | ND | | | | ND | | | | ND | | | | ND | | | |

## Table 5-2

## Sediment Sample Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number<br>Sample Location<br>Sample Date<br>Sample Depth (Feet) | | | | SY1008<br>BBGR-BERA-SD04<br>8-Oct-06<br>0 - 0.5 ft. | | | | SY1011<br>BBGR-BERA-SD05<br>8-Oct-06<br>0 - 0.5 ft. | | | | SY1002<br>CWM-183-SW/SD02<br>6-Oct-06<br>0 - 0.5 ft. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Units | BTV[a] | ESV[b] | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV |
| **PESTICIDES** | | | | | | | | | | | | | | | |
| alpha-BHC | mg/kg | NA | 0.006 | ND | | | | 0.0044 | J | | | ND | | | |
| gamma-Chlordane | mg/kg | NA | 0.0017 | 0.003 | J | | YES | ND | | | | ND | | | |
| **METALS** | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 8593 | | 3950 | J | | | 5580 | J | | | 5090 | | | |
| Antimony | mg/kg | 0.73 | 12 | 0.486 | J | | | 0.479 | J | | | 0.679 | J | | |
| Arsenic | mg/kg | 11.33 | 7.24 | 6.19 | | | | 4.05 | | | | 5.62 | | | |
| Barium | mg/kg | 98.91 | | 55.4 | | | | 73.8 | | | | 135 | | YES | |
| Beryllium | mg/kg | 0.97 | | 0.718 | | | | 1.24 | | YES | | 1.33 | | YES | |
| Cadmium | mg/kg | 0.43 | 1 | 0.14 | J | | | ND | | | | 0.363 | J | | |
| Calcium | mg/kg | 1111.51 | | 2040 | J | YES | | 2010 | J | YES | | 1080 | | | |
| Chromium | mg/kg | 31.15 | 52.3 | 21.1 | | | | 14.7 | | | | 21.7 | | | |
| Cobalt | mg/kg | 11.01 | 50 | 7.4 | | | | 15.6 | | YES | | 8.95 | | | |
| Copper | mg/kg | 17.12 | 18.7 | 7.59 | J | | | 19.8 | J | YES | YES | 16.6 | | | |
| Iron | mg/kg | 35267 | | 20900 | | | | 27800 | | | | 33800 | J | | |
| Lead | mg/kg | 37.82 | 30.2 | 26.5 | J | | | 44.7 | J | YES | YES | 16.6 | | | |
| Magnesium | mg/kg | 905.94 | | 433 | | | | 314 | | | | 897 | | | |
| Manganese | mg/kg | 712.31 | | 614 | | | | 325 | | | | 1020 | | YES | |
| Nickel | mg/kg | 13.02 | 15.9 | 5.85 | | | | 10.2 | | | | 14.4 | | YES | |
| Potassium | mg/kg | 1013.48 | | 339 | | | | 438 | | | | 1400 | | YES | |
| Selenium | mg/kg | 0.72 | | 0.274 | J | | | 0.339 | J | | | 0.246 | J | | |
| Silver | mg/kg | 0.32 | 2 | ND | | | | ND | | | | ND | | | |
| Sodium | mg/kg | 692.29 | | ND | | | | ND | | | | 42.2 | B | | |
| Thallium | mg/kg | 0.13 | | ND | | | | ND | | | | ND | | | |
| Vanadium | mg/kg | 40.87 | | 19.5 | | | | 25.9 | | | | 18.4 | | | |
| Zinc | mg/kg | 52.74 | 124 | 25.6 | J | | | 19.5 | J | | | 84.3 | | YES | |
| pH | | | | 6.96 | | | | 6.9 | | | | 7.3 | | | |
| **TOTAL ORGANIC CARBON** | | | | | | | | | | | | | | | |
| Total Organic Carbon | mg/kg | NA | | 5520 | | | | 15500 | | | | ND | | | |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | | | | |
| 2-Butanone | mg/kg | NA | 0.13696 | ND | | | | 0.0072 | J | | | ND | | | |
| Acetone | mg/kg | NA | 0.45337 | 0.049 | J | | | 0.09 | J | | | ND | | | |
| Carbon disulfide | mg/kg | NA | 0.13397 | ND | | | | ND | | | | ND | | | |
| Chloroform | mg/kg | NA | 0.027 | ND | | | | ND | | | | ND | | | |

## Table 5-2

## Sediment Sample Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number<br>Sample Location<br>Sample Date<br>Sample Depth (Feet) | | | | SY1004<br>FTA-163-SW/SD02<br>6-Oct-06<br>0 - 0.5 ft. | | | | SY1001<br>HR-74Q-SW/SD01<br>6-Oct-06<br>0 - 0.5 ft. | | | | SY1009<br>HR-79Q-SW/SD01<br>7-Oct-06<br>0 - 0.5 ft. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Units | BTV[a] | ESV[b] | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV |
| **PESTICIDES** | | | | | | | | | | | | | | | |
| alpha-BHC | mg/kg | NA | 0.006 | ND | | | | 0.0011 | J | | | ND | | | |
| gamma-Chlordane | mg/kg | NA | 0.0017 | ND | | | | 0.0091 | | | YES | ND | | | |
| **METALS** | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 8593 | | 4470 | | | | 4550 | | | | 7550 | J | | |
| Antimony | mg/kg | 0.73 | 12 | 0.452 | J | | | 1.12 | J | YES | | 1.46 | J | YES | |
| Arsenic | mg/kg | 11.33 | 7.24 | 3.71 | | | | 3.94 | | | | 14.2 | | YES | YES |
| Barium | mg/kg | 98.91 | | 56.4 | | | | 41.9 | | | | 578 | | YES | |
| Beryllium | mg/kg | 0.97 | | 0.808 | | | | 0.586 | J | | | 2.97 | | YES | |
| Cadmium | mg/kg | 0.43 | 1 | 0.132 | J | | | 0.221 | J | | | 0.664 | | YES | |
| Calcium | mg/kg | 1111.51 | | 618 | | | | 1260 | | YES | | 2230 | J | YES | |
| Chromium | mg/kg | 31.15 | 52.3 | 12.8 | | | | 13.4 | | | | 100 | | YES | YES |
| Cobalt | mg/kg | 11.01 | 50 | 5.64 | | | | 5.76 | | | | 47 | | YES | |
| Copper | mg/kg | 17.12 | 18.7 | 10.3 | | | | 16.2 | | | | 22.5 | J | YES | YES |
| Iron | mg/kg | 35267 | | 22400 | J | | | 19000 | J | | | 71600 | | YES | |
| Lead | mg/kg | 37.82 | 30.2 | 11.2 | | | | 73.5 | | YES | YES | 111 | J | YES | YES |
| Magnesium | mg/kg | 905.94 | | 974 | | YES | | 944 | | YES | | 497 | | | |
| Manganese | mg/kg | 712.31 | | 408 | | | | 145 | | | | 6140 | | YES | |
| Nickel | mg/kg | 13.02 | 15.9 | 9.93 | | | | 9.79 | | | | 16.9 | | YES | YES |
| Potassium | mg/kg | 1013.48 | | 1470 | | YES | | 937 | | | | 493 | | | |
| Selenium | mg/kg | 0.72 | | 0.165 | J | | | 0.287 | J | | | 0.468 | J | | |
| Silver | mg/kg | 0.32 | 2 | ND | | | | ND | | | | ND | | | |
| Sodium | mg/kg | 692.29 | | 43.3 | B | | | 49.6 | B | | | ND | | | |
| Thallium | mg/kg | 0.13 | | ND | | | | ND | | | | 0.169 | J | YES | |
| Vanadium | mg/kg | 40.87 | | 13.5 | | | | 15.3 | | | | 60.3 | | YES | |
| Zinc | mg/kg | 52.74 | 124 | 84.9 | | YES | | 65.6 | | YES | | 60.4 | J | YES | |
| pH | | | | 7.57 | | | | 6.84 | | | | 6.88 | | | |
| **TOTAL ORGANIC CARBON** | | | | | | | | | | | | | | | |
| Total Organic Carbon | mg/kg | NA | | 623 | J | | | 8510 | | | | 1640 | | | |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | | | | |
| 2-Butanone | mg/kg | NA | 0.13696 | 0.0073 | J | | | ND | | | | ND | | | |
| Acetone | mg/kg | NA | 0.45337 | 0.07 | J | | | 0.088 | J | | | 0.073 | J | | |
| Carbon disulfide | mg/kg | NA | 0.13397 | ND | | | | ND | | | | ND | | | |
| Chloroform | mg/kg | NA | 0.027 | 0.0052 | J | | | ND | | | | ND | | | |

## Table 5-2

## Sediment Sample Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number<br>Sample Location<br>Sample Date<br>Sample Depth (Feet) | | | | SY1010<br>HR-79Q-SW/SD03<br>7-Oct-06<br>0 - 0.5 ft. | | | | SY1013<br>HR-79Q-SW/SD05<br>7-Oct-06<br>0 - 0.5 ft. | | | | SY1005<br>HR-83Q-SW/SD01<br>7-Oct-06<br>0 - 0.5 ft. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Units | BTV[a] | ESV[b] | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV | Result | Qual | >BTV | >ESV |
| **PESTICIDES** | | | | | | | | | | | | | | | |
| alpha-BHC | mg/kg | NA | 0.006 | 0.0012 | J | | | ND | | | | ND | | | |
| gamma-Chlordane | mg/kg | NA | 0.0017 | ND | | | | ND | | | | ND | | | |
| **METALS** | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 8593 | | 3210 | J | | | 3340 | J | | | 4290 | | | |
| Antimony | mg/kg | 0.73 | 12 | 0.831 | J | YES | | 0.383 | J | | | 0.694 | J | | |
| Arsenic | mg/kg | 11.33 | 7.24 | 3.38 | | | | 7.6 | | | YES | 7.15 | | | |
| Barium | mg/kg | 98.91 | | 43 | | | | 51.6 | | | | 101 | | YES | |
| Berylilium | mg/kg | 0.97 | | 0.713 | | | | 0.917 | | | | 0.971 | | YES | |
| Cadmium | mg/kg | 0.43 | 1 | ND | | | | 0.18 | J | | | 0.133 | J | | |
| Calcium | mg/kg | 1111.51 | | 966 | J | | | 1690 | J | YES | | 1340 | | YES | |
| Chromium | mg/kg | 31.15 | 52.3 | 18 | | | | 23.2 | | | | 51.3 | | YES | |
| Cobalt | mg/kg | 11.01 | 50 | 5.99 | | | | 6.08 | | | | 9.35 | | | |
| Copper | mg/kg | 17.12 | 18.7 | 16.5 | J | | | 7.32 | J | | | 9.04 | | | |
| Iron | mg/kg | 35267 | | 17300 | | | | 26600 | | | | 34200 | J | | |
| Lead | mg/kg | 37.82 | 30.2 | 112 | J | YES | YES | 14.8 | J | | | 23.5 | | | |
| Magnesium | mg/kg | 905.94 | | 171 | | | | 354 | | | | 471 | | | |
| Manganese | mg/kg | 712.31 | | 377 | | | | 450 | | | | 840 | | YES | |
| Nickel | mg/kg | 13.02 | 15.9 | 4.48 | | | | 7.58 | | | | 8.11 | | | |
| Potassium | mg/kg | 1013.48 | | 397 | | | | 251 | | | | 401 | | | |
| Selenium | mg/kg | 0.72 | | 0.208 | J | | | 0.259 | J | | | 0.208 | J | | |
| Silver | mg/kg | 0.32 | 2 | ND | | | | ND | | | | ND | | | |
| Sodium | mg/kg | 692.29 | | ND | | | | ND | | | | 38.6 | B | | |
| Thallium | mg/kg | 0.13 | | ND | | | | ND | | | | ND | | | |
| Vanadium | mg/kg | 40.87 | | 14.9 | | | | 14 | | | | 27.2 | | | |
| Zinc | mg/kg | 52.74 | 124 | 25.7 | J | | | 34 | J | | | 24.1 | | | |
| pH | | | | 6.97 | | | | 7.38 | | | | 7.11 | | | |
| **TOTAL ORGANIC CARBON** | | | | | | | | | | | | | | | |
| Total Organic Carbon | mg/kg | NA | | 5450 | | | | 8490 | | | | 2200 | | | |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | | | | | | | | | |
| 2-Butanone | mg/kg | NA | 0.13696 | ND | | | | ND | | | | 0.0091 | J | | |
| Acetone | mg/kg | NA | 0.45337 | 0.088 | J | | | 0.1 | J | | | 0.16 | J | | |
| Carbon disulfide | mg/kg | NA | 0.13397 | ND | | | | ND | | | | ND | | | |
| Chloroform | mg/kg | NA | 0.027 | ND | | | | ND | | | | ND | | | |

[a] BTV - Background threshold value. Concentration listed is two times (2x) the arithmetic mean of background metals given in SAIC, 1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.

[b] Ecological screening value (ESV) as given in IT, 2000, *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit.

J - Compound was positively identified; reported value is an estimated concentration.

mg/kg - Milligrams per kilogram.

NA - Not available.

ND - Not detected.

Qual - Data validation qualifier.

## Table 5-3

## Plant Tissue Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number<br>Sample Location<br>Sample Date | | SY0011W<br>BBGR-BERA-REF-SS<br>6-Oct-06 | | SY0002W<br>BBGR-BERA-SS01<br>10-Oct-06 | | SY0010W<br>HR-118Q-DEP1<br>7-Oct-06 | | SY0001W<br>HR-74Q-GP52<br>6-Oct-06 | | SY0004W<br>HR-74Q-GP63200SE<br>6-Oct-06 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Units | Result | Qual | Result | Qual | Result | Qual | Result | Qual | Result | Qual |
| METALS | | | | | | | | | | | |
| Aluminum | mg/kg | 21.9 | J | 33.7 | J | 81.8 | J | 61.8 | J | 22.8 | J |
| Antimony | mg/kg | ND | | ND | | 0.117 | J | 0.135 | J | ND | |
| Arsenic | mg/kg | ND | | ND | | ND | | 0.103 | J | ND | |
| Barium | mg/kg | 8.79 | | 18.2 | | 30.2 | | 90.2 | | 16.5 | |
| Beryllium | mg/kg | ND | | ND | | ND | | ND | | ND | |
| Cadmium | mg/kg | 0.112 | J | 0.35 | J | 0.111 | J | 0.154 | J | ND | |
| Calcium | mg/kg | 3190 | | 4510 | | 2240 | | 3180 | | 1800 | |
| Chromium | mg/kg | 0.235 | J | 0.126 | J | 0.255 | J | 0.172 | J | 0.189 | J |
| Cobalt | mg/kg | ND | | ND | | ND | | 0.129 | J | ND | |
| Copper | mg/kg | 2.38 | | 4.44 | | 5.38 | | 3.97 | | 9.76 | |
| Iron | mg/kg | 42.3 | J | 44.7 | J | 94.4 | J | 72.4 | J | 66 | J |
| Lead | mg/kg | 0.256 | B | 20.7 | | 23.2 | | 2.54 | | 0.709 | B |
| Magnesium | mg/kg | 2080 | | 2230 | | 1100 | | 850 | | 1080 | |
| Manganese | mg/kg | 16.1 | | 148 | | 220 | | 406 | | 155 | |
| Mercury | mg/kg | ND | | ND | | ND | | ND | | ND | |
| Nickel | mg/kg | 0.21 | J | 1.81 | | 1.17 | | 0.414 | J | 1.41 | |
| Potassium | mg/kg | 9260 | | 6380 | | 13200 | | 5160 | | 7150 | |
| Selenium | mg/kg | 0.144 | J | ND | | ND | | ND | | ND | |
| Silver | mg/kg | ND | | ND | | ND | | ND | | ND | |
| Sodium | mg/kg | 38.8 | J | 49.8 | J | 37.4 | J | 49.7 | J | 63.8 | J |
| Thallium | mg/kg | ND | | ND | | ND | | 0.256 | J | ND | |
| Vanadium | mg/kg | 0.247 | J | 0.244 | J | 0.336 | J | 0.211 | J | 0.397 | J |
| Zinc | mg/kg | 9.57 | | 43.1 | | 37 | | 25.9 | | 53.8 | |

## Table 5-3

## Plant Tissue Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number | | SY0009W | | SY0005W | | SY0008W | | SY0006W | | SY0007W | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | | HR-74Q-GP66 | | HR-79Q-GP31 | | HR-79Q-SS06 | | HR-79Q-SS09 | | HR-84Q-GP29 | |
| Sample Date | | 6-Oct-06 | | 7-Oct-06 | | 10-Oct-06 | | 7-Oct-06 | | 10-Oct-06 | |
| Parameter | Units | Result | Qual | Result | Qual | Result | Qual | Result | Qual | Result | Qual |
| **METALS** | | | | | | | | | | | |
| Aluminum | mg/kg | 37.8 | J | 134 | | 31.8 | J | ND | | ND | |
| Antimony | mg/kg | ND | | ND | | ND | | 0.342 | J | ND | |
| Arsenic | mg/kg | ND | | ND | | ND | | 0.104 | B | ND | |
| Barium | mg/kg | 11.5 | | 80.9 | | 30.6 | | 11.9 | | 22 | |
| Beryllium | mg/kg | ND | | ND | | ND | | ND | | ND | |
| Cadmium | mg/kg | 0.165 | J | ND | | 0.206 | J | 0.107 | J | 0.217 | J |
| Calcium | mg/kg | 1960 | | 3950 | | 4410 | | 4620 | | 4950 | |
| Chromium | mg/kg | 0.251 | J | 0.178 | J | 0.204 | J | 0.384 | J | 0.197 | J |
| Cobalt | mg/kg | ND | | 0.117 | J | ND | | ND | | 0.132 | J |
| Copper | mg/kg | 5.12 | | 3.96 | | 5.06 | | 4.26 | | 4.29 | |
| Iron | mg/kg | 55.9 | J | 122 | | 49.2 | J | 48.2 | J | 43.2 | J |
| Lead | mg/kg | 23.1 | | 43.3 | | 17 | | 7.42 | | 19.1 | |
| Magnesium | mg/kg | 1050 | | 1050 | | 1910 | | 2130 | | 2110 | |
| Manganese | mg/kg | 174 | | 444 | | 246 | | 321 | | 232 | |
| Mercury | mg/kg | ND | | ND | | ND | | ND | | ND | |
| Nickel | mg/kg | 0.421 | J | 0.39 | J | 0.543 | | 0.829 | | 1.6 | |
| Potassium | mg/kg | 5900 | | 6390 | | 8020 | | 9010 | | 6680 | |
| Selenium | mg/kg | ND | | ND | | ND | | 0.125 | J | ND | |
| Silver | mg/kg | ND | | ND | | ND | | ND | | ND | |
| Sodium | mg/kg | 35.7 | J | 38 | J | 99.7 | J | 37.2 | J | 23.3 | J |
| Thallium | mg/kg | ND | | ND | | ND | | 0.115 | J | ND | |
| Vanadium | mg/kg | 0.19 | J | 0.445 | J | 0.274 | J | 0.373 | J | 0.23 | J |
| Zinc | mg/kg | 48.5 | | 19.6 | | 50.9 | | 30.1 | | 63.4 | |

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit.
J - Compound was positively identified; reported value is an estimated concentration.
mg/kg - milligrams per kilogram.
ND - Not detected.
Qual - Data validation qualifier.

## Table 5-4

## Earthworm Tissue Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number<br>Sample Location<br>Sample Date | | SY0011<br>BBGR-BERA-REF-SS<br>6-Oct-06 | | SY0002<br>BBGR-BERA-SS01<br>10-Oct-06 | | SY0010<br>HR-118Q-DEP1<br>7-Oct-06 | | SY0001<br>HR-74Q-GP52<br>6-Oct-06 | | SY0004<br>HR-74Q-GP63200SE<br>6-Oct-06 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Parameter** | **Units** | **Result** | **Qual** | **Result** | **Qual** | **Result** | **Qual** | **Result** | **Qual** | **Result** | **Qual** |
| **METALS** | | | | | | | | | | | |
| Aluminum | mg/kg | 322 | | 585 | | 582 | | 456 | | 378 | |
| Antimony | mg/kg | ND | | 2.5 | | 1.74 | | ND | | ND | |
| Arsenic | mg/kg | 1.41 | | 2.99 | | 1.03 | | 0.827 | J | 1.02 | |
| Barium | mg/kg | 11.3 | | 29.4 | | 36.2 | | 19.8 | | 13.7 | |
| Cadmium | mg/kg | 1.46 | | 1.17 | | 0.508 | J | 1.88 | | 1.99 | |
| Calcium | mg/kg | 2760 | | 2480 | | 3370 | | 3200 | | 3140 | |
| Chromium | mg/kg | 0.754 | J | 1.54 | | 0.628 | J | ND | | 0.782 | J |
| Cobalt | mg/kg | 9.86 | | 3.45 | | 3.46 | | 5.79 | | 4.86 | |
| Copper | mg/kg | 13.6 | | 28.3 | | 89.4 | | 16.1 | | 19.3 | |
| Iron | mg/kg | 1340 | | 996 | | 869 | | 610 | | 787 | |
| Lead | mg/kg | 3.6 | | 377 | | 1140 | | 12.4 | | 126 | |
| Magnesium | mg/kg | 1070 | | 715 | | 740 | | 715 | | 692 | |
| Manganese | mg/kg | 38.3 | | 116 | | 318 | | 86.9 | | 85.2 | |
| Mercury | mg/kg | 0.128 | | 0.124 | | 0.18 | | 0.102 | | 0.117 | |
| Nickel | mg/kg | 0.801 | J | 1.71 | | 2.18 | | 0.723 | J | 1.32 | |
| Potassium | mg/kg | 8440 | | 7160 | | 8350 | | 8390 | | 7240 | |
| Selenium | mg/kg | 5.21 | | 4.58 | | 4.23 | | 6.36 | | 4.48 | |
| Sodium | mg/kg | 4320 | | 4220 | | 4840 | | 5170 | | 4860 | |
| Thallium | mg/kg | ND | | 0.853 | J | ND | | 1.17 | | ND | |
| Vanadium | mg/kg | 1.77 | | 1.99 | | 1.56 | | 1.15 | | 1.32 | |
| Zinc | mg/kg | 97.9 | | 108 | | 112 | | 101 | | 102 | |

## Table 5-4

## Earthworm Tissue Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number<br>Sample Location<br>Sample Date | | SY0009<br>HR-74Q-GP66<br>6-Oct-06 | | SY0005<br>HR-79Q-GP31<br>7-Oct-06 | | SY0008<br>HR-79Q-SS06<br>10-Oct-06 | | SY0006<br>HR-79Q-SS09<br>7-Oct-06 | | SY0007<br>HR-84Q-GP29<br>10-Oct-06 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Units | Result | Qual | Result | Qual | Result | Qual | Result | Qual | Result | Qual |
| METALS | | | | | | | | | | | |
| Aluminum | mg/kg | 210 | | 404 | | 175 | J | 476 | | 366 | |
| Antimony | mg/kg | ND | | 0.712 | J | ND | | 2.24 | | 1.73 | |
| Arsenic | mg/kg | 0.7 | J | 1.32 | | 2.32 | | 16.6 | | 1.73 | |
| Barium | mg/kg | 17.5 | | 18.8 | | 11 | | 27.3 | | 31.9 | |
| Cadmium | mg/kg | 0.752 | J | 1.76 | | 0.915 | J | 0.689 | J | 0.717 | J |
| Calcium | mg/kg | 2970 | | 3880 | | 3360 | | 2670 | | 2960 | |
| Chromium | mg/kg | ND | | 0.578 | J | ND | | 0.835 | J | 1.05 | |
| Cobalt | mg/kg | 3.53 | | 7.02 | | 3.8 | | 5.54 | | 3.58 | |
| Copper | mg/kg | 51.7 | | 16.9 | | 20.4 | | 17.4 | | 28.2 | |
| Iron | mg/kg | 570 | | 640 | | 546 | | 1260 | | 813 | |
| Lead | mg/kg | 473 | | 204 | | 277 | | 477 | | 351 | |
| Magnesium | mg/kg | 660 | | 819 | | 710 | | 672 | | 699 | |
| Manganese | mg/kg | 72.3 | | 112 | | 42.8 | | 128 | | 77.3 | |
| Mercury | mg/kg | 0.154 | | 0.17 | | 0.0668 | J | 0.111 | | 0.0422 | J |
| Nickel | mg/kg | 1.5 | | 0.691 | J | 0.515 | J | 0.821 | J | 1.59 | |
| Potassium | mg/kg | 6920 | | 9460 | | 7460 | | 7900 | | 7880 | |
| Selenium | mg/kg | 3.45 | | 7.87 | | 3.89 | | 5.43 | | 2.58 | |
| Sodium | mg/kg | 4040 | | 5850 | | 4200 | | 4770 | | 4560 | |
| Thallium | mg/kg | ND | | ND | | ND | | ND | | ND | |
| Vanadium | mg/kg | 0.943 | J | 1.41 | | 0.893 | J | 1.62 | | 1.54 | |
| Zinc | mg/kg | 99.8 | | 128 | | 101 | | 101 | | 106 | |

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit.
J - Compound was positively identified; reported value is an estimated concentration.
mg/kg - milligrams per kilogram.
ND - Not detected.
Qual - Data validation qualifier.

## Table 5-5

## Chironomid Tissue Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number | | SY1015 | | SY1014 | | SY1006 | | SY1007 | | SY1008 | | SY1011 | | SY1002 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | | BBGR-BERA-REF-SED | | BBGR-BERA-SD01 | | BBGR-BERA-SD02 | | BBGR-BERA-SD03 | | BBGR-BERA-SD04 | | BBGR-BERA-SD05 | | CWM-183-SW/SD02 | |
| Sample Date | | 8-Oct-06 | | 7-Oct-06 | | 6-Oct-06 | | 7-Oct-06 | | 8-Oct-06 | | 8-Oct-06 | | 6-Oct-06 | |
| Parameter | Units | Result | Qual | Result | Qual | Result | Qual | Result | Qual | Result | Qual | Result | Qual | Result | Qual |
| **PESTICIDES** | | | | | | | | | | | | | | | |
| 4,4'-DDE | mg/kg | ND | | 0.01 | J | 0.0088 | | 0.0024 | J | 0.0048 | J | 0.0026 | J | 0.0094 | |
| 4,4'-DDT | mg/kg | ND | | ND | | ND | | ND | | ND | | ND | | 0.0065 | B |
| Aldrin | mg/kg | ND | | 0.006 | J | 0.024 | | 0.026 | | 0.0062 | J | 0.011 | | 0.0059 | J |
| Endosulfan I | mg/kg | ND | | ND | | ND | | 0.011 | J | ND | | 0.0079 | J | ND | |
| Endrin | mg/kg | ND | | ND | | 0.016 | J | ND | | ND | | 0.0047 | J | ND | |
| Endrin ketone | mg/kg | 0.0024 | J | ND | | ND | | ND | | ND | | ND | | ND | |
| Heptachlor | mg/kg | ND | | ND | | ND | | ND | | ND | | ND | | ND | |
| Heptachlor epoxide | mg/kg | 0.0041 | B | 0.0046 | B | 0.021 | | 0.012 | J | 0.014 | J | 0.011 | J | 0.0065 | B |
| alpha-BHC | mg/kg | 0.0018 | J | 0.0018 | J | ND | | ND | | ND | | ND | | ND | |
| alpha-Chlordane | mg/kg | ND | | ND | | ND | | ND | | ND | | ND | | ND | |
| beta-BHC | mg/kg | 0.0089 | | 0.0077 | | ND | | 0.0028 | J | 0.0091 | J | ND | | 0.0076 | J |
| delta-BHC | mg/kg | ND | | 0.0029 | J | ND | | ND | | ND | | ND | | ND | |
| gamma-BHC (Lindane) | mg/kg | 0.0027 | | ND | | ND | | ND | | ND | | 0.0038 | J | ND | |
| gamma-Chlordane | mg/kg | ND | | ND | | ND | | ND | | ND | | ND | | ND | |
| **METALS** | | | | | | | | | | | | | | | |
| Aluminum | mg/kg | 1360 | | 1550 | | 1830 | | 1240 | | 1660 | | 1660 | | 1580 | |
| Arsenic | mg/kg | 1.03 | | 1.54 | | 1.77 | | 1.71 | | 2.27 | | 2.1 | | 2.26 | |
| Barium | mg/kg | 29.4 | | 29.1 | | 20.2 | | 22.1 | | 30.7 | | 30.8 | | 26.5 | |
| Cadmium | mg/kg | 2.5 | | 2.37 | | 2.55 | | 4.05 | | 3.48 | | 3.2 | | 5.84 | |
| Calcium | mg/kg | 2130 | | 2340 | | 1760 | | 1790 | | 1920 | | 2610 | | 1670 | |
| Chromium | mg/kg | 2.04 | | 2.89 | | 3.2 | | 2.53 | | 3.14 | | 3.43 | | 3.32 | |
| Cobalt | mg/kg | 2.53 | | 2.39 | | 2.65 | | 1.59 | | 2.01 | | 1.9 | | 2.81 | |
| Copper | mg/kg | 44.2 | | 72.4 | | 148 | | 196 | | 74.3 | | 127 | | 132 | |
| Iron | mg/kg | 4340 | | 4250 | | 5560 | | 3420 | | 4800 | | 4590 | | 6040 | |
| Lead | mg/kg | 4.25 | | 13.2 | | 61.1 | | 12.7 | | 14.1 | | 18.1 | | 9.17 | |
| Magnesium | mg/kg | 1450 | | 1350 | | 1620 | | 1150 | | 1330 | | 1190 | | 1340 | |
| Manganese | mg/kg | 214 | | 83 | | 60.7 | | 67.9 | | 229 | | 185 | | 222 | |
| Nickel | mg/kg | 4.77 | | 3.58 | | 5.4 | | 2.54 | | 3.16 | | 2.78 | | 7.33 | |
| Potassium | mg/kg | 7730 | | 6960 | | 6870 | | 6340 | | 7990 | | 6410 | | 6520 | |
| Selenium | mg/kg | 1.99 | | 2.6 | | 2.85 | | 2.02 | | 1.69 | | 2.49 | | 2.33 | |
| Sodium | mg/kg | 12500 | | 10900 | | 10400 | | 9280 | | 11000 | | 10100 | | 8600 | |
| Vanadium | mg/kg | 3.76 | | 4.3 | | 5.62 | | 3.85 | | 5.1 | | 4.66 | | 5.12 | |
| Zinc | mg/kg | 799 | | 327 | | 446 | | 293 | | 292 | | 233 | | 437 | |

## Table 5-5

## Chironomid Tissue Analytical Results
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Sample Number | | SY1004 | | SY1001 | | SY1009 | | SY1010 | | SY1013 | | SY1005 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Location | | FTA-163-SW/SD02 | | HR-74Q-SW/SD01 | | HR-79Q-SW/SD01 | | HR-79Q-SW/SD03 | | HR-79Q-SW/SD05 | | HR-83Q-SW/SD01 | |
| Sample Date | | 6-Oct-06 | | 6-Oct-06 | | 7-Oct-06 | | 7-Oct-06 | | 7-Oct-06 | | 7-Oct-06 | |
| Parameter | Units | Result | Qual | Result | Qual | Result | Qual | Result | Qual | Result | Qual | Result | Qual |
| **PESTICIDES** | | | | | | | | | | | | | |
| 4,4'-DDE | mg/kg | ND | | ND | | 0.0025 | J | 0.004 | | ND | | 0.015 | J |
| 4,4'-DDT | mg/kg | ND | | ND | | ND | | ND | | ND | | ND | |
| Aldrin | mg/kg | 0.0051 | J | 0.0088 | J | 0.0085 | | 0.0096 | J | 0.0064 | | 0.018 | |
| Endosulfan I | mg/kg | ND | | ND | | ND | | ND | | ND | | ND | |
| Endrin | mg/kg | ND | | ND | | 0.0036 | J | 0.0034 | J | 0.012 | | ND | |
| Endrin ketone | mg/kg | ND | | ND | | 0.0041 | J | ND | | ND | | ND | |
| Heptachlor | mg/kg | ND | | ND | | 0.0042 | J | ND | | ND | | ND | |
| Heptachlor epoxide | mg/kg | 0.0062 | B | 0.0074 | B | 0.0066 | B | 0.0095 | | 0.0062 | B | 0.025 | |
| alpha-BHC | mg/kg | ND | | ND | | ND | | ND | | 0.0019 | J | ND | |
| alpha-Chlordane | mg/kg | ND | | 0.0031 | | 0.0031 | J | ND | | ND | | ND | |
| beta-BHC | mg/kg | 0.0065 | J | 0.006 | J | 0.033 | J | 0.0086 | J | ND | | ND | |
| delta-BHC | mg/kg | ND | | ND | | ND | | ND | | ND | | ND | |
| gamma-BHC (Lindane) | mg/kg | ND | | ND | | ND | | ND | | ND | | ND | |
| gamma-Chlordane | mg/kg | ND | | ND | | 0.0023 | | ND | | ND | | ND | |
| **METALS** | | | | | | | | | | | | | |
| Aluminum | mg/kg | 1410 | | 975 | | 1300 | | 1250 | | 1650 | | 1870 | |
| Arsenic | mg/kg | 1.96 | | 0.941 | J | 2.37 | | 1.61 | | 2.58 | | 2.33 | |
| Barium | mg/kg | 22.6 | | 12.3 | | 39.6 | | 25.3 | | 29.8 | | 26 | |
| Cadmium | mg/kg | 3.92 | | 4.09 | | 6.01 | | 3.37 | | 5.89 | | 3.27 | |
| Calcium | mg/kg | 1490 | | 1200 | | 2000 | | 1400 | | 2080 | | 2090 | |
| Chromium | mg/kg | 2.49 | | 1.83 | | 3.16 | | 2.45 | | 3.44 | | 3.8 | |
| Cobalt | mg/kg | 2.07 | | 1.36 | | 2.53 | | 2.11 | | 2.55 | | 2.65 | |
| Copper | mg/kg | 159 | | 325 | | 101 | | 361 | | 107 | | 101 | |
| Iron | mg/kg | 4890 | | 2930 | | 5170 | | 4170 | | 6190 | | 5840 | |
| Lead | mg/kg | 8.07 | | 50.6 | | 31.4 | | 84.5 | | 25 | | 18 | |
| Magnesium | mg/kg | 1170 | | 1130 | | 1380 | | 1180 | | 1400 | | 1350 | |
| Manganese | mg/kg | 112 | | 35.1 | | 691 | | 184 | | 261 | | 204 | |
| Nickel | mg/kg | 6.7 | | 3.07 | | 3.03 | | 2.57 | | 3.72 | | 3.49 | |
| Potassium | mg/kg | 6280 | | 7420 | | 9040 | | 7510 | | 7400 | | 5650 | |
| Selenium | mg/kg | 1.48 | | 2.65 | | 1.64 | | 2.32 | | 2.32 | | 1.69 | |
| Sodium | mg/kg | 8690 | | 11100 | | 11900 | | 11000 | | 15200 | | 7640 | |
| Vanadium | mg/kg | 4.04 | | 2.99 | | 5.14 | | 4 | | 4.99 | | 6.3 | |
| Zinc | mg/kg | 546 | | 390 | | 356 | | 288 | | 349 | | 418 | |

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit.
J - Compound was positively identified; reported value is an estimated concentration.
mg/kg - milligrams per kilogram.
ND - Not detected.
Qual - Data validation qualifier.

## Table 5-6

### COPEC Concentrations
### In Soil and Terrestrial Plant Tissues
### Baby Bains Gap Road Ranges BERA
### Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample ID | Antimony Conc. in Surface Soil (mg/kg - dry wt.) | Antimony Conc. in Plant Tissue (mg/kg - dry wt.) | | Sample-Specific Plant Antimony BAF | Beryllium Conc. in Surface Soil (mg/kg - dry wt.) | Beryllium Conc. in Plant Tissue (mg/kg - dry wt.) | | Sample-Specific Plant Beryllium BAF | Copper Conc. in Surface Soil (mg/kg - dry wt.) | Copper Conc. in Plant Tissue (mg/kg - dry wt.) | Sample-Specific Plant Copper BAF | Lead Conc. in Surface Soil (mg/kg - dry wt.) | Lead Conc. in Plant Tissue (mg/kg - dry wt.) | Sample-Specific Plant Lead BAF | Zinc Conc. in Surface Soil (mg/kg - dry wt.) | Zinc Conc. in Plant Tissue (mg/kg - dry wt.) | Sample-Specific Plant Zinc BAF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory Control | Control | | | | | | | | | | | | | | | | | |
| HR-74Q-GP52 | SY0001 | 0.899 | 0.135 | | 0.15 | 0.583 | 0.50 | U | NA | 19.9 | 3.97 | 0.20 | 102 | 2.54 | 0.02 | 20.1 | 25.9 | 1.29 |
| BBGR-BERA-SS01 | SY0002 | 4.92 | 0.5 | U | NA | 0.444 | 0.50 | U | NA | 152 | 4.44 | 0.03 | 526 | 20.7 | 0.04 | 154 | 43.1 | 0.28 |
| HR-74Q-GP63+200SE | SY0004 | 0.724 | 0.5 | U | NA | 1.02 | 0.50 | U | NA | 16.5 | 9.76 | 0.59 | 125 | 0.709 | 0.01 | 25.4 | 53.8 | 2.12 |
| HR-79Q-GP31 | SY0005 | 2.79 | 0.5 | U | NA | 0.705 | 0.50 | U | NA | 28 | 3.96 | 0.14 | 338 | 43.3 | 0.13 | 22.3 | 19.6 | 0.88 |
| HR-79Q-SS09 | SY0006 | 2.11 | 0.342 | | 0.16 | 0.597 | 0.50 | U | NA | 36.5 | 4.26 | 0.12 | 471 | 7.42 | 0.02 | 26 | 30.1 | 1.16 |
| HR-84Q-GP29 | SY0007 | 2.77 | 0.5 | U | NA | 0.156 | 0.50 | U | NA | 44.6 | 4.29 | 0.10 | 338 | 19.1 | 0.06 | 33.5 | 63.4 | 1.89 |
| HR-79Q-SS06 | SY0008 | 7.35 | 0.5 | U | NA | 0.624 | 0.50 | U | NA | 74.1 | 5.06 | 0.07 | 1240 | 17 | 0.01 | 27.4 | 50.9 | 1.86 |
| HR-74Q-GP66 | SY0009 | 5.29 | 0.5 | U | NA | 0.685 | 0.50 | U | NA | 184 | 5.12 | 0.03 | 919 | 23.1 | 0.03 | 53.5 | 48.5 | 0.91 |
| HR-118Q-DEP01 | SY0010 | 1310 | 0.117 | | 0.00009 | 1.67 | 0.50 | U | NA | 563 | 5.38 | 0.01 | 146000 | 23.2 | 0.00 | 113 | 37 | 0.33 |
| BBGR-BERA-REF-SS | SY0011 | 2.94 | 0.5 | U | NA | 0.757 | 0.50 | U | NA | 35.1 | 2.38 | 0.07 | 48.5 | 0.256 | 0.01 | 37.3 | 9.57 | 0.26 |
| **Mean Site-Specific BAFs :** | | | | | ND | | | | ND | | | 0.13 | | | 0.03 | | | 1.10 |

Note:
NA - Constituent not detected in vegetation sample; therefore, BAF was not calculated.
ND - Due to infrequency of detection in plant tissue, average BAF could not be calculated.

## Table 5-7

## Surface Soil COPEC Concentrations and Perennial Rye Grass Toxicity
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample ID | Antimony Conc. In Surface Soil (mg/kg - dry wt.) | Beryllium Conc. In Surface Soil (mg/kg - dry wt.) | Copper Conc. In Surface Soil (mg/kg - dry wt.) | Lead Conc. In Surface Soil (mg/kg - dry wt.) | Zinc Conc. In Surface Soil (mg/kg - dry wt.) | Perennial Rye Grass Toxicity Test Endpoints: 15-day Rye Grass Germination (percent) | 15-day Rye Grass Shoot Length (mm) | 15-day Rye Grass Root Length (mm) | 15-day Rye Grass Dry Weight (mg) |
|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory Control | Control | | | | | | 94 | 90 | 108 | 8.77 |
| HR-74Q-GP52 | SY0001 | 0.899 | 0.583 | 19.9 | 102 | 20.1 | 90 | 101 | 59 | 6.53 |
| BBGR-BERA-SS01 | SY0002 | 4.92 | 0.444 | 152 | 526 | 154 | 86 | 78 | 51* | 4.76 |
| HR-74Q-GP63+200SE | SY0004 | 0.724 | 1.02 | 16.5 | 125 | 25.4 | 80 | 95 | 46* | 4.76* |
| HR-79Q-GP31 | SY0005 | 2.79 | 0.705 | 28 | 338 | 22.3 | 88 | 98 | 82 | 7.76 |
| HR-79Q-SS09 | SY0006 | 2.11 | 0.597 | 36.5 | 471 | 26 | 92 | 93 | 64 | 5.36* |
| HR-84Q-GP29 | SY0007 | 2.77 | 0.156 | 44.6 | 338 | 33.5 | 88 | 78 | 48 | 6.36 |
| HR-79Q-SS06 | SY0008 | 7.35 | 0.624 | 74.1 | 1240 | 27.4 | 94 | 83 | 64 | 7.29 |
| HR-74Q-GP66 | SY0009 | 5.29 | 0.685 | 184 | 919 | 53.5 | 82 | 64* | 2.9* | 3.02* |
| HR-118Q-DEP01 | SY0010 | 1310 | 1.67 | 563 | 146000 | 113 | 92 | 90 | 36* | 4.56* |
| BBGR-BERA-REF-SS | SY0011 | 2.94 | 0.757 | 35.1 | 48.5 | 37.3 | 90 | 87 | 64 | 6.75 |

Note:
Shading and asterisk indicate a statistically significant difference compared to the reference sample.

## Table 5-8

## Surface Soil COPEC Concentrations and Earthworm Toxicity
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample ID | Antimony Conc. In Surface Soil (mg/kg - dry wt.) | Beryllium Conc. In Surface Soil (mg/kg - dry wt.) | Copper Conc. In Surface Soil (mg/kg - dry wt.) | Lead Conc. In Surface Soil (mg/kg - dry wt.) | Zinc Conc. In Surface Soil (mg/kg - dry wt.) | Earthworm Toxicity Test Endpoints | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 14-day Earthworm Survival (percent) | 28-day Earthworm Survival (percent) | Earthworm Growth (% wt. Change) |
| Laboratory Control | Control | | | | | | 100 | 94 | 76 |
| HR-74Q-GP52 | SY0001 | 0.899 | 0.583 | 19.9 | 102 | 20.1 | 98 | 98 | 75 |
| BBGR-BERA-SS01 | SY0002 | 4.92 | 0.444 | 152 | 526 | 154 | 100 | 95 | 75 |
| HR-74Q-GP63+200SE | SY0004 | 0.724 | 1.02 | 16.5 | 125 | 25.4 | 98 | 96 | 79 |
| HR-79Q-GP31 | SY0005 | 2.79 | 0.705 | 28 | 338 | 22.3 | 98 | 96 | 82 |
| HR-79Q-SS09 | SY0006 | 2.11 | 0.597 | 36.5 | 471 | 26 | 100 | 95 | 78 |
| HR-84Q-GP29 | SY0007 | 2.77 | 0.156 | 44.6 | 338 | 33.5 | 100 | 96 | 69 |
| HR-79Q-SS06 | SY0008 | 7.35 | 0.624 | 74.1 | 1240 | 27.4 | 100 | 98 | 66 |
| HR-74Q-GP66 | SY0009 | 5.29 | 0.685 | 184 | 919 | 53.5 | 98 | 93 | 68 |
| HR-118Q-DEP01 | SY0010 | 1310 | 1.67 | 563 | 146000 | 113 | 100 | 95 | 73 |
| BBGR-BERA-REF-SS | SY0011 | 2.94 | 0.757 | 35.1 | 48.5 | 37.3 | 100 | 96 | 76 |

Note:
None of the samples exhibited statistically significant reduction in survival or growth compared to the reference site.

## Table 5-9

### COPEC Concentrations in Soil and Earthworm Tissues
### Baby Bains Gap Road Ranges BERA
### Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample ID | Antimony Conc. in Surface Soil (mg/kg - dry wt.) | Antimony Conc. in Earthworm Tissue (mg/kg - dry wt.) | | Sample-Specific Antimony BAF | Beryllium Conc. in Surface Soil (mg/kg - dry wt.) | Beryllium Conc. in Earthworm Tissue (mg/kg - dry wt.) | | Sample-Specific Beryllium BAF | Copper Conc. in Surface Soil (mg/kg - dry wt.) | Copper Conc. in Earthworm Tissue (mg/kg - dry wt.) | Sample-Specific Copper BAF | Lead Conc. in Surface Soil (mg/kg - dry wt.) | Lead Conc. in Earthworm Tissue (mg/kg - dry wt.) | Sample-Specific Lead BAF | Zinc Conc. in Surface Soil (mg/kg - dry wt.) | Zinc Conc. in Earthworm Tissue (mg/kg - dry wt.) | Sample-Specific Zinc BAF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory Control | Control | | | | | | | | | | | | | | | | | |
| HR-74Q-GP52 | SY0001 | 0.899 | 1 | U | NA | 0.583 | 1.0 | U | NA | 19.9 | 16.1 | 0.81 | 102 | 12.4 | 0.12 | 20.1 | 101 | 5.02 |
| BBGR-BERA-SS01 | SY0002 | 4.92 | 2.5 | | 0.51 | 0.444 | 1.0 | U | NA | 152 | 28.3 | 0.19 | 526 | 377 | 0.72 | 154 | 108 | 0.70 |
| HR-74Q-GP63+200SE | SY0004 | 0.724 | 1 | U | NA | 1.02 | 1.0 | U | NA | 16.5 | 19.3 | 1.17 | 125 | 126 | 1.01 | 25.4 | 102 | 4.02 |
| HR-79Q-GP31 | SY0005 | 2.79 | 0.712 | | 0.26 | 0.705 | 1.0 | U | NA | 28 | 16.9 | 0.60 | 338 | 204 | 0.60 | 22.3 | 128 | 5.74 |
| HR-79Q-SS09 | SY0006 | 2.11 | 2.24 | | 1.06 | 0.597 | 1.0 | U | NA | 36.5 | 17.4 | 0.48 | 471 | 477 | 1.01 | 26 | 101 | 3.88 |
| HR-84Q-GP29 | SY0007 | 2.77 | 1.73 | | 0.62 | 0.156 | 1.0 | U | NA | 44.6 | 28.2 | 0.63 | 338 | 351 | 1.04 | 33.5 | 106 | 3.16 |
| HR-79Q-SS06 | SY0008 | 7.35 | 1 | U | NA | 0.624 | 1.0 | U | NA | 74.1 | 20.4 | 0.28 | 1240 | 277 | 0.22 | 27.4 | 101 | 3.69 |
| HR-74Q-GP66 | SY0009 | 5.29 | 1 | U | NA | 0.685 | 1.0 | U | NA | 184 | 51.7 | 0.28 | 919 | 473 | 0.51 | 53.5 | 99.8 | 1.87 |
| HR-118Q-DEP01 | SY0010 | 1310 | 1.74 | | 0.0013 | 1.67 | 1.0 | U | NA | 563 | 89.4 | 0.16 | 146000 | 1140 | 0.0078 | 113 | 112 | 0.99 |
| BBGR-BERA-REF-SS | SY0011 | 2.94 | 1 | U | NA | 0.757 | 1.0 | U | NA | 35.1 | 13.6 | 0.39 | 48.5 | 3.6 | 0.07 | 37.3 | 97.9 | 2.62 |
| **Mean Site-Specific BAFs :** | | | | | ND | | | | ND | | | 0.50 | | | 0.53 | | | 3.17 |

Notes:
NA - Constituent not detected in earthworm tissue sample; therefore, BAF was not calculated.
ND - Due to infrequency of detection in earthworm tissue, average BAF could not be calculated.

## Table 5-10

## Sediment COPEC Concentrations and Chironomid Toxicity
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample ID | Copper Conc. In Sediment (mg/kg - dry wt.) | Lead Conc. In Sediment (mg/kg - dry wt.) | gamma-Chlordane Conc. In Sediment (mg/kg - dry wt.) | | Toxicity Test Endpoints: 10-Day Chironomid Survival (percent) | Toxicity Test Endpoints: Chironomid Ash-Free Dry Weight (mg/organism) |
|---|---|---|---|---|---|---|---|
| Laboratory Control | Control | | | | | 92 | 1.45 |
| HR-74Q-SW/SD01 | SY1001 | 16.2 | 73.5 | 0.0091 | | 92 | 1.64 |
| CWM-183-SW/SD02 | SY1002 | 16.6 | 16.6 | 0.0025 | U | 92 | 1.5 * |
| FTA-163-SW/SD02 | SY1004 | 10.3 | 11.2 | 0.0025 | U | 86 | 1.29 |
| HR-83Q-SW/SD01 | SY1005 | 9.04 | 23.5 | 0.0024 | U | 84 | 1.43 * |
| BBGR-BERA-SD02 | SY1006 | 21.9 | 99.7 | 0.0028 | J | 90 | 1.55 |
| BBGR-BERA-SD03 | SY1007 | 17.2 | 34.2 | 0.0028 | U | 84 | 1.62 |
| BBGR-BERA-SD04 | SY1008 | 7.59 | 26.5 | 0.003 | J | 86 | 1.62 |
| HR-79Q-SW/SD01 | SY1009 | 22.5 | 111 | 0.0024 | U | 80 | 1.66 |
| HR-79Q-SW/SD03 | SY1010 | 16.5 | 112 | 0.0024 | U | 90 | 1.65 |
| BBGR-BERA-SD05 | SY1011 | 19.8 | 44.7 | 0.0026 | U | 88 | 1.65 |
| HR-79Q-SW/SD05 | SY1013 | 7.32 | 14.8 | 0.0026 | U | 96 | 1.59 |
| BBGR-BERA-SD01 | SY1014 | 10.1 | 26.2 | 0.0029 | U | 94 | 1.67 |
| BBGR-BERA-REF-SED | SY1015 | 2.69 | 5.39 | 0.0025 | U | 80 | 1.69 |

Note:
Shading and asterisk indicate a statistically significant difference compared to the reference sample.

## Table 5-11

## COPEC Concentrations in Sediment and Chironomid Tissues Baby Bains Gap Road Ranges BERA Fort McClellan, Calhoun County, Alabama

| Sample Location | Sample ID | Copper Conc. In Sediment (mg/kg - dry wt.) | Copper Conc. In Chironomid Tissue (mg/kg - dry wt.) | Sample-Specific Copper BAF | Lead Conc. In Sediment (mg/kg - dry wt.) | Lead Conc. In Chironomid Tissue (mg/kg - dry wt.) | Sample-Specific Lead BAF | gamma-Chlordane Conc. In Sediment (mg/kg - dry wt.) | | gamma-Chlordane Conc. In Chironomid Tissue (mg/kg - dry wt.) | | Sample-Specific gamma-Chlordane BAF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Laboratory Control | Control | | | | | | | | | | | |
| HR-74Q-SW/SD01 | SY1001 | 16.2 | 325 | 20.06 | 73.5 | 50.6 | 0.69 | 0.0091 | | 0.0024 | U | NA |
| CWM-183-SW/SD02 | SY1002 | 16.6 | 132 | 7.95 | 16.6 | 9.17 | 0.55 | 0.0025 | U | 0.0024 | U | NA |
| FTA-163-SW/SD02 | SY1004 | 10.3 | 159 | 15.44 | 11.2 | 8.07 | 0.72 | 0.0025 | U | 0.0024 | U | NA |
| HR-83Q-SW/SD01 | SY1005 | 9.04 | 101 | 11.17 | 23.5 | 18 | 0.77 | 0.0024 | U | 0.0019 | U | NA |
| BBGR-BERA-SD02 | SY1006 | 21.9 | 148 | 6.76 | 99.7 | 61.1 | 0.61 | 0.0028 | J | 0.002 | U | NA |
| BBGR-BERA-SD03 | SY1007 | 17.2 | 196 | 11.40 | 34.2 | 12.7 | 0.37 | 0.0028 | U | 0.002 | U | NA |
| BBGR-BERA-SD04 | SY1008 | 7.59 | 74.3 | 9.79 | 26.5 | 14.1 | 0.53 | 0.003 | J | 0.002 | U | NA |
| HR-79Q-SW/SD01 | SY1009 | 22.5 | 101 | 4.49 | 111 | 31.4 | 0.28 | 0.0024 | U | 0.0023 | | NA |
| HR-79Q-SW/SD03 | SY1010 | 16.5 | 361 | 21.88 | 112 | 84.5 | 0.75 | 0.0024 | U | 0.002 | U | NA |
| BBGR-BERA-SD05 | SY1011 | 19.8 | 127 | 6.41 | 44.7 | 18.1 | 0.40 | 0.0026 | U | 0.002 | U | NA |
| HR-79Q-SW/SD05 | SY1013 | 7.32 | 107 | 14.62 | 14.8 | 25 | 1.69 | 0.0026 | U | 0.0024 | U | NA |
| BBGR-BERA-SD01 | SY1014 | 10.1 | 72.4 | 7.17 | 26.2 | 13.2 | 0.50 | 0.0029 | U | 0.0024 | U | NA |
| BBGR-BERA-REF-SED | SY1015 | 2.69 | 44.2 | 16.43 | 5.39 | 4.25 | 0.79 | 0.0025 | U | 0.002 | U | NA |
| **Mean Site-Specific BAFs :** | | | | 11.81 | | | 0.67 | | | | | NA |

## Table 5-12

### Benthic Invertebrate Habitat Assessment
### Baby Bains Gap Road Ranges BERA
### Fort McClellan, Calhoun County, Alabama

| Sample Number | Sample Location | Habitat Parameter | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Epifaunal Substrate / Available Cover | Embeddedness | Velocity / Depth Regime | Sediment Deposition | Channel Flow Status | Channel Alteration | Frequency Of Riffles or Bends | Bank Stability [a] | Vegetative Protection [a] | Riparian Vegetative Zone Width [a] | AVERAGE SAMPLE LOCATION SCORE |
| SY1001 | HR-74Q-SD01 | 13 | 17 | 12 | 19 | 20 | 16 | 18 | 20 | 12 | 20 | **16.7** (Optimal) |
| SY1002 | CWM-183-SD02 | 13 | 18 | 15 | 18 | 18 | 20 | 18 | 14 | 14 | 20 | **16.8** (Optimal) |
| SY1004 | FTA-163-SD02 | 11 | 15 | 7 | 16 | 17 | 15 | 10 | 8 | 16 | 18 | **13.3** (Sub-Optimal) |
| SY1005 | HR-83Q-SD01 | 9 | 16 | 6 | 19 | 5 | 18 | 2 | 13 | 16 | 11 | **11.5** (Sub-Optimal) |
| SY1006 | BBGR-BERA-SD02 | 11 | 12 | 10 | 19 | 19 | 20 | 17 | 18 | 16 | 20 | **16.2** (Optimal) |
| SY1007 | BBGR-BERA-SD03 | 11 | 15 | 7 | 10 | 10 | 17 | 8 | 14 | 18 | 20 | **13** (Sub-Optimal) |
| SY1008 | BBGR-BERA-SD04 | 16 | 17 | 15 | 13 | 14 | 18 | 17 | 14 | 10 | 20 | **15.4** (Sub-Optimal) |
| SY1009 | HR-79Q-SD01 | 12 | 18 | 10 | 17 | 14 | 18 | 7 | 18 | 14 | 16 | **14.4** (Sub-Optimal) |
| SY1010 | HR-79Q-SD03 | 9 | 12 | 2 | 16 | 17 | 13 | 4 | 14 | 18 | 18 | **12.3** (Sub-Optimal) |
| SY1011 | BBGR-BERA-SD05 | 14 | 15 | 13 | 17 | 16 | 17 | 8 | 12 | 14 | 20 | **14.6** (Sub-Optimal) |
| SY1013 | HR-79Q-SD05 | 7 | 9 | 7 | 15 | 11 | 20 | 10 | 12 | 20 | 20 | **13.1** (Sub-Optimal) |
| SY1014 | BBGR-BERA-SD01 | 14 | 14 | 13 | 18 | 15 | 20 | 13 | 16 | 16 | 20 | **15.9** (Sub-Optimal) |
| SY1015 | BBGR-BERA-REF-SED | 18 | 15 | 14 | 20 | 13 | 20 | 19 | 19 | 16 | 17 | **17.1** (Optimal) |
| AVERAGE HABITAT SCORE : | | **11.7** | **14.8** | **9.8** | **16.4** | **14.7** | **17.7** | **11.0** | **14.4** | **15.3** | **18.6** | |

Notes :

[a] - Total score for both stream banks.

Habitat Condition Score:

20 - 16 = Optimal

15 - 11 = Sub-Optimal

10 - 6 = Marginal

5 - 0 = Poor

## Table 5-13

### Benthic Invertebrate Identification Summary
### Baby Bains Gap Road Ranges BERA
### Fort McClellan, Calhoun County, Alabama



| Biological Stre Ibany, New York. | Order | Family | Common Name | Pollution Tolerance Value[a, b] | Life Stage | Functional Feeding Group[a, b] | BBGR BERA SD01 | | BBGR BERA SD02 | | BBGR BERA SD03 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | riffle/run | CPOM | riffle/run | CPOM | riffle/run | CPOM |
| Turbellaria | | | Flatworms | 6 | adult | gatherer/collector | | | | | | |
| Gastropoda | Pleuroceridae | | Pleurocerid Snails | 6 | adult | scraper | 11 | 125 | 3 | 5 | | |
| | Physidae | | Physid Snails | 8 | adult | gatherer/collector | | | 16 | 23 | | |
| Oligochaeta | Tubificida | Tubificidae | tubifex worm | 10 | adult | gatherer/collector | | | 2 | | | |
| | Lumbriculida | Lumbriculidae | Aquatic earthworm | 5 | adult | gatherer/collector | | | | | 1 | |
| Insecta | Collembola | Isotomidae | Springtails | 5 | adult | gatherer/collector | | | | | | |
| | Ephemeroptera | | Mayflies | 4[c] | nymph | NA | | | | | | |
| | | Heptageniidae | Flatheaded Mayflies | 3 | nymph | scraper | 13 | | | | 2 | |
| | | Ephemeridae | Common Burrower Mayflies | 4[d] | nymph | gatherer/collector | | | | | | |
| | Plecoptera | Perlidae | Common Stoneflies | 3 | nymph | predator | | | | | 1 | |
| | | Chloroperlidae | Green Stoneflies | 0 | nymph | predator | | | | | | |
| | | Peltoperlidae | Roachlike Stoneflies | 0 | nymph | shredder | | | | | | |
| | | Leuctridae | Rolled -winged Stoneflies | 0 | nymph | shredder | | | | | | |
| | Trichoptera | | Caddisflies | 2[c] | larva | NA | | | | | | |
| | | Glossosomatidae | Saddlecase-maker Caddisflies | 1 | larva | scraper | | | | | | |
| | | Hydropsychidae | Common Netspinner Caddisflies | 5 | larva | filterer/collector | 2 | | 3 | 2 | 2 | |
| | | Lepidostomatidae | Lepidostomatid Case-maker Caddisflies | 1 | larva | shredder | | | | | | |
| | | Odontoceratidae | Strong case-maker Caddisflies | 0 | larva | scraper | | | | | 9 | |
| | | Philopotamidae | Fingernet Caddisflies | 4 | larva | filterer/collector | | | | 1 | | |
| | | Polycentropodidae | Trumpetnet/Tubemaker Caddisflies | 6 | larva | filterer/collector | | | | | | 14 |
| | | Psychomyiidae | Caddisflies | 2 | larva | gatherer/collector | | | | | | |
| | | Rhyacophilidae | Freeliving Caddisflies | 1 | larva | predator | | | | | | |
| | | Calamoceratidae | Caddisflies | 3[f] | larva | shredder[e] | | | | | 17 | |
| | Odonata | Coenagrionidae | Narrow-winged Damselflies | 8 | nymph | predator | | | | | | |
| | | Cordulegastridae | Biddies | 3 | nymph | predator | | | | | | |
| | | Calopterygidae | Broad-winged Damselflies | 6 | nymph | predator | | | | | 2 | |
| | | Gomphidae | Club-tail Dragonflies | 4 | nymph | predator | 3 | | | | | |
| | | Libellulidae | Skimmer Dragonflies | 2 | nymph | predator | | | | | 1 | 1 |
| | Coleoptera | | Beetles | 4[c] | | NA | | | | | 1 | |
| | | Dytiscidae | Predaceous Diving Beetles | 5 | larva | predator | | | | | 1 | |
| | | Psephenidae | Water Pennies | 4 | adult | scraper | | | | | | |
| | | Elmidae | Riffle Beetles | 5 | larva/adult | scraper | 2 | | | | | |
| | Lepidoptera | | Moths | 5 | larva | shredder | | | | | | |
| | Megaloptera | Corydalidae | Dobsonflies | 4 | larva | predator | 4 | | 1 | | | |
| | | Sialidae | Alderflies | 4 | larva | predator | 2 | | | | 1 | |
| | Diptera | Culicidae | Mosquitoes | 8 | larva | filterer/collector | | | | | | |
| | | Dixidae | Dixa Midges | 1 | larva | filterer/collector | | | | | 3 | |
| | | Simulidae | Blackflies | 6[d] | larva | filterer/collector | | | | | | |
| | | Tipulidae | Craneflies | 4 | larva | shredder | 2 | | | 1 | 3 | 6 |
| | | Ceratopogonidae | Biting Midges | 6 | larva | predator | | | | | | |
| | | Chironomidae | Non-biting Midges | 7[c] | larva | NA | | | | | | 1 |
| | | Chironomidae | Chironomini Midges | 6 | larva | gatherer/collector | | 2 | 9 | | 16 | 11 |
| | | Chironomidae | Tanytarsini Midges | 6 | larva | filterer/collector | | | | 10 | 9 | 8 |
| | | Chironomidae | Orthocladinae Midges | 5 | larva | gatherer/collector | | | 1 | | | |
| | | Chironomidae | Tanypodinae Midges | 7 | larva | predator | 3 | | | | 21 | 3 |
| Arachnida | Acariformes | Hydrachnidae | Water Mites | 6 | adult | predator | | | | | | |
| Malacostraca | Decapoda | Cambaridae | Crayfish | 6 | juvenile | gatherer/collector | | 1 | 6 | | 16 | |
| | Isopoda | Asellidae | Aquatic Sow Bugs | 8 | juvenile | gatherer/collector | | 1 | 9 | 16 | 3 | |
| | Amphipoda | Crangonyctidae | Scuds | 6 | juvenile | gatherer/collector | | | | | 5 | |
| | | | | | | TOTAL INDIVIDUALS | 42 | 129 | 50 | 58 | 114 | 44 |

Table 5-13

**Benthic Invertebrate Identification Summary**
**Baby Bains Gap Road Ranges BERA**
**Fort McClellan, Calhoun County, Alabama**



| Biological Stre<br>lbany, New York. | Order | Family | Common Name | Pollution Tolerance Value[a, b] | Life Stage | Functional Feeding Group[a, b] | BBGR BERA SD04 | | BBGR BERA SD05 | | CWM 183 SD02 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | riffle/run | CPOM | riffle/run | CPOM | riffle/run | CPOM |
| Turbellaria | | | Flatworms | 6 | adult | gatherer/collector | | | | | | 1 |
| Gastropoda | Pleuroceridae | | Pleurocerid Snails | 6 | adult | scraper | 66 | 34 | 13 | 99 | 36 | 80 |
| | Physidae | | Physid Snails | 8 | adult | gatherer/collector | | | | | | |
| Oligochaeta | Tubificida | Tubificidae | tubifex worm | 10 | adult | gatherer/collector | | | 2 | | | |
| | Lumbriculida | Lumbriculidae | Aquatic earthworm | 5 | adult | gatherer/collector | | | | | 7 | |
| Insecta | Collembola | Isotomidae | Springtails | 5 | adult | gatherer/collector | | | | 1 | | |
| | Ephemeroptera | | Mayflies | 4[c] | nymph | NA | 1 | | | | 1 | |
| | | Heptageniidae | Flatheaded Mayflies | 3 | nymph | scraper | 1 | | 5 | | | |
| | | Ephemeridae | Common Burrower Mayflies | 4[d] | nymph | gatherer/collector | | | | | | |
| | Plecoptera | Perlidae | Common Stoneflies | 3 | nymph | predator | | | | | 1 | 5 |
| | | Chloroperlidae | Green Stoneflies | 0 | nymph | predator | | | | | 2 | |
| | | Peltoperlidae | Roachlike Stoneflies | 0 | nymph | shredder | | | | | | |
| | | Leuctridae | Rolled -winged Stoneflies | 0 | nymph | shredder | | | | | | |
| | Trichoptera | | Caddisflies | 2[c] | larva | NA | 3 | | 1 | | | |
| | | Glossosomatidae | Saddlecase-maker Caddisflies | 1 | larva | scraper | | | | | 1 | |
| | | Hydropsychidae | Common Netspinner Caddisflies | 5 | larva | filterer/collector | 1 | | | 1 | 113 | 8 |
| | | Lepidostomatidae | Lepidostomatid Case-maker Caddisflies | 1 | larva | shredder | | | | | | |
| | | Odontoceratidae | Strong case-maker Caddisflies | 0 | larva | scraper | | | | | | |
| | | Philopotamidae | Fingernet Caddisflies | 4 | larva | filterer/collector | 1 | | 1 | 1 | 53 | 26 |
| | | Polycentropodidae | Trumpetnet/Tubemaker Caddisflies | 6 | larva | filterer/collector | 4 | 5 | 11 | 19 | | |
| | | Psychomyiidae | Caddisflies | 2 | larva | gatherer/collector | | | | | | |
| | | Rhyacophilidae | Freeliving Caddisflies | 1 | larva | predator | | | | | 1 | |
| | | Calamoceratidae | Caddisflies | 3[f] | larva | shredder[e] | | | | | | 1 |
| | Odonata | Coenagrionidae | Narrow-winged Damselflies | 8 | nymph | predator | | | | | 1 | |
| | | Cordulegastridae | Biddies | 3 | nymph | predator | 1 | | | | | |
| | | Calopterygidae | Broad-winged Damselflies | 6 | nymph | predator | | | | | | |
| | | Gomphidae | Club-tail Dragonflies | 4 | nymph | predator | 3 | | | 6 | | |
| | | Libellulidae | Skimmer Dragonflies | 2 | nymph | predator | | | | | | |
| | Coleoptera | | Beetles | 4[c] | | NA | | | | | | |
| | | Dytiscidae | Predaceous Diving Beetles | 5 | larva | predator | | | | | | |
| | | Psephenidae | Water Pennies | 4 | adult | scraper | 2 | | 4 | | 20 | |
| | | Elmidae | Riffle Beetles | 5 | larva/adult | scraper | | | | | 5 | |
| | Lepidoptera | | Moths | 5 | larva | shredder | | | | | | |
| | Megaloptera | Corydalidae | Dobsonflies | 4 | larva | predator | 1 | | | | 8 | 1 |
| | | Sialidae | Alderflies | 4 | larva | predator | | | 2 | | | |
| | Diptera | Culicidae | Mosquitoes | 8 | larva | filterer/collector | | | | | | |
| | | Dixidae | Dixa Midges | 1 | larva | filterer/collector | | | | | | |
| | | Simulidae | Blackflies | 6[d] | larva | filterer/collector | | | | | 2 | 1 |
| | | Tipulidae | Craneflies | 4 | larva | shredder | 1 | | 1 | | 73 | 14 |
| | | Ceratopogonidae | Biting Midges | 6 | larva | predator | | | | 1 | | |
| | | Chironomidae | Non-biting Midges | 7[c] | larva | NA | | | 20 | 6 | | 21 |
| | | Chironomidae | Chironomini Midges | 6 | larva | gatherer/collector | 55 | | 8 | | 10 | 53 |
| | | Chironomidae | Tanytarsini Midges | 6 | larva | filterer/collector | | | | | 1 | 9 |
| | | Chironomidae | Orthocladinae Midges | 5 | larva | gatherer/collector | | | | | 1 | 6 |
| | | Chironomidae | Tanypodinae Midges | 7 | larva | predator | 2 | | | | 7 | 15 |
| Arachnida | Acariformes | Hydrachnidae | Water Mites | 6 | adult | predator | | | | | | 1 |
| Malacostraca | Decapoda | Cambaridae | Crayfish | 6 | juvenile | gatherer/collector | 6 | 1 | 9 | | 2 | |
| | Isopoda | Asellidae | Aquatic Sow Bugs | 8 | juvenile | gatherer/collector | 1 | | | | | |
| | Amphipoda | Crangonyctidae | Scuds | 6 | juvenile | gatherer/collector | | | | | | |
| | | | | | | TOTAL INDIVIDUALS | 149 | 40 | 77 | 134 | 345 | 242 |

## Table 5-13

### Benthic Invertebrate Identification Summary
### Baby Bains Gap Road Ranges BERA
### Fort McClellan, Calhoun County, Alabama



| Biological Stre<br>lbany, New York. | Order | Family | Common Name | Pollution Tolerance Value[a, b] | Life Stage | Functional Feeding Group[a, b] | FTA 163 SD02 | | HR74Q SD01 | | HR79Q SD01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | riffle/run | CPOM | riffle/run | CPOM | riffle/run | CPOM |
| Turbellaria | | | Flatworms | 6 | adult | gatherer/collector | | | | | | |
| Gastropoda | Pleuroceridae | | Pleurocerid Snails | 6 | adult | scraper | | | 21 | 227 | 32 | 28 |
| | Physidae | | Physid Snails | 8 | adult | gatherer/collector | | | 2 | 9 | | |
| Oligochaeta | Tubificida | Tubificidae | tubifex worm | 10 | adult | gatherer/collector | | | | | | |
| | Lumbriculida | Lumbriculidae | Aquatic earthworm | 5 | adult | gatherer/collector | 16 | 5 | 6 | | | |
| Insecta | Collembola | Isotomidae | Springtails | 5 | adult | gatherer/collector | | | | | | |
| | Ephemeroptera | | Mayflies | 4[c] | nymph | NA | | | | | | |
| | | Heptageniidae | Flatheaded Mayflies | 3 | nymph | scraper | | | 1 | | | |
| | | Ephemeridae | Common Burrower Mayflies | 4[d] | nymph | gatherer/collector | | | | | | |
| | Plecoptera | Perlidae | Common Stoneflies | 3 | nymph | predator | | | | | | |
| | | Chloroperlidae | Green Stoneflies | 0 | nymph | predator | | | | | | |
| | | Peltoperlidae | Roachlike Stoneflies | 0 | nymph | shredder | | | | | | |
| | | Leuctridae | Rolled -winged Stoneflies | 0 | nymph | shredder | | | | | | |
| | Trichoptera | | Caddisflies | 2[c] | larva | NA | | | | | | |
| | | Glossosomatidae | Saddlecase-maker Caddisflies | 1 | larva | scraper | | | | | | |
| | | Hydropsychidae | Common Netspinner Caddisflies | 5 | larva | filterer/collector | | | 34 | 2 | | |
| | | Lepidostomatidae | Lepidostomatid Case-maker Caddisflies | 1 | larva | shredder | | | | | | |
| | | Odontoceratidae | Strong case-maker Caddisflies | 0 | larva | scraper | | | | | | |
| | | Philopotamidae | Fingernet Caddisflies | 4 | larva | filterer/collector | | | 3 | | | |
| | | Polycentropodidae | Trumpetnet/Tubemaker Caddisflies | 6 | larva | filterer/collector | | | | | | |
| | | Psychomyiidae | Caddisflies | 2 | larva | gatherer/collector | | | | | | |
| | | Rhyacophilidae | Freeliving Caddisflies | 1 | larva | predator | | | | | | |
| | | Calamoceratidae | Caddisflies | 3[f] | larva | shredder[e] | | | 1 | 5 | 15 | 15 |
| | Odonata | Coenagrionidae | Narrow-winged Damselflies | 8 | nymph | predator | | | | | | |
| | | Cordulegastridae | Biddies | 3 | nymph | predator | | | 1 | | | |
| | | Calopterygidae | Broad-winged Damselflies | 6 | nymph | predator | | | | | | |
| | | Gomphidae | Club-tail Dragonflies | 4 | nymph | predator | | | | | | |
| | | Libellulidae | Skimmer Dragonflies | 2 | nymph | predator | | | 1 | | | 1 |
| | Coleoptera | | Beetles | 4[c] | | NA | | | | | | |
| | | Dytiscidae | Predaceous Diving Beetles | 5 | larva | predator | | | | | | |
| | | Psephenidae | Water Pennies | 4 | adult | scraper | | | 1 | | | |
| | | Elmidae | Riffle Beetles | 5 | larva/adult | scraper | | | | | | |
| | Lepidoptera | | Moths | 5 | larva | shredder | 1 | | | | | |
| | Megaloptera | Corydalidae | Dobsonflies | 4 | larva | predator | | | | | 1 | |
| | | Sialidae | Alderflies | 4 | larva | predator | | | | | | |
| | Diptera | Culicidae | Mosquitoes | 8 | larva | filterer/collector | | | | | | |
| | | Dixidae | Dixa Midges | 1 | larva | filterer/collector | | | | | | |
| | | Simulidae | Blackflies | 6[d] | larva | filterer/collector | | | 2 | | | |
| | | Tipulidae | Craneflies | 4 | larva | shredder | | 1 | | | | |
| | | Ceratopogonidae | Biting Midges | 6 | larva | predator | | 7 | | | | |
| | | Chironomidae | Non-biting Midges | 7[c] | larva | NA | | | | | | |
| | | Chironomidae | Chironomini Midges | 6 | larva | gatherer/collector | 4 | 3 | | 7 | 1 | 6 |
| | | Chironomidae | Tanytarsini Midges | 6 | larva | filterer/collector | | | | | | |
| | | Chironomidae | Orthocladinae Midges | 5 | larva | gatherer/collector | | | | | | |
| | | Chironomidae | Tanypodinae Midges | 7 | larva | predator | | | | 1 | | |
| Arachnida | Acariformes | Hydrachnidae | Water Mites | 6 | adult | predator | | | | | | |
| Malacostraca | Decapoda | Cambaridae | Crayfish | 6 | juvenile | gatherer/collector | | 1 | 3 | 2 | 4 | 3 |
| | Isopoda | Asellidae | Aquatic Sow Bugs | 8 | juvenile | gatherer/collector | | | 18 | 2 | | |
| | Amphipoda | Crangonyctidae | Scuds | 6 | juvenile | gatherer/collector | | | | | | |
| | | | | | | TOTAL INDIVIDUALS | 21 | 17 | 94 | 255 | 53 | 53 |

## Table 5-13

### Benthic Invertebrate Identification Summary
### Baby Bains Gap Road Ranges BERA
### Fort McClellan, Calhoun County, Alabama



| Biological Stre<br>lbany, New York. | Order | Family | Common Name | Pollution Tolerance Value[a, b] | Life Stage | Functional Feeding Group[a, b] | HR79Q SD03 | | HR79Q SD05 | | HR83Q SD01 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | riffle/run | CPOM | riffle/run | CPOM | riffle/run | CPOM |
| Turbellaria | | | Flatworms | 6 | adult | gatherer/collector | | | | | | |
| Gastropoda | Pleuroceridae | | Pleurocerid Snails | 6 | adult | scraper | | | 33 | 104 | | |
| | Physidae | | Physid Snails | 8 | adult | gatherer/collector | | | | | | |
| Oligochaeta | Tubificida | Tubificidae | tubifex worm | 10 | adult | gatherer/collector | 3 | 1 | | 1 | | |
| | Lumbriculida | Lumbriculidae | Aquatic earthworm | 5 | adult | gatherer/collector | | | | | 9 | |
| Insecta | Collembola | Isotomidae | Springtails | 5 | adult | gatherer/collector | | | | | | |
| | Ephemeroptera | | Mayflies | 4[c] | nymph | NA | | | | | | |
| | | Heptageniidae | Flatheaded Mayflies | 3 | nymph | scraper | 1 | 1 | | 1 | 1 | |
| | | Ephemeridae | Common Burrower Mayflies | 4[d] | nymph | gatherer/collector | | | | 1 | | |
| | Plecoptera | Perlidae | Common Stoneflies | 3 | nymph | predator | | | 1 | 3 | | |
| | | Chloroperlidae | Green Stoneflies | 0 | nymph | predator | | | | | | |
| | | Peltoperlidae | Roachlike Stoneflies | 0 | nymph | shredder | | | | 1 | | |
| | | Leuctridae | Rolled -winged Stoneflies | 0 | nymph | shredder | | | | | | |
| | Trichoptera | | Caddisflies | 2[c] | larva | NA | | | | | | |
| | | Glossosomatidae | Saddlecase-maker Caddisflies | 1 | larva | scraper | | | 1 | | | |
| | | Hydropsychidae | Common Netspinner Caddisflies | 5 | larva | filterer/collector | | | 1 | | | |
| | | Lepidostomatidae | Lepidostomatid Case-maker Caddisflies | 1 | larva | shredder | | | | | | |
| | | Odontoceratidae | Strong case-maker Caddisflies | 0 | larva | scraper | | | 3 | 11 | | |
| | | Philopotamidae | Fingernet Caddisflies | 4 | larva | filterer/collector | | | 1 | | | |
| | | Polycentropodidae | Trumpetnet/Tubemaker Caddisflies | 6 | larva | filterer/collector | | | | | | |
| | | Psychomyiidae | Caddisflies | 2 | larva | gatherer/collector | | | | 1 | | |
| | | Rhyacophilidae | Freeliving Caddisflies | 1 | larva | predator | | | | | | |
| | | Calamoceratidae | Caddisflies | 3[f] | larva | shredder[e] | 1 | | 4 | 21 | | |
| | Odonata | Coenagrionidae | Narrow-winged Damselflies | 8 | nymph | predator | | | | | | |
| | | Cordulegastridae | Biddies | 3 | nymph | predator | | | 1 | 1 | 1 | |
| | | Calopterygidae | Broad-winged Damselflies | 6 | nymph | predator | | | | | | |
| | | Gomphidae | Club-tail Dragonflies | 4 | nymph | predator | 1 | | 3 | 1 | | |
| | | Libellulidae | Skimmer Dragonflies | 2 | nymph | predator | | | | | | |
| | Coleoptera | | Beetles | 4[c] | | NA | | | 1 | | | |
| | | Dytiscidae | Predaceous Diving Beetles | 5 | larva | predator | | | | | | |
| | | Psephenidae | Water Pennies | 4 | adult | scraper | | | | | | |
| | | Elmidae | Riffle Beetles | 5 | larva/adult | scraper | 1 | | 2 | 5 | | |
| | Lepidoptera | | Moths | 5 | larva | shredder | | | | | | |
| | Megaloptera | Corydalidae | Dobsonflies | 4 | larva | predator | | | 1 | 4 | | |
| | | Sialidae | Alderflies | 4 | larva | predator | | | | | 1 | |
| | Diptera | Culicidae | Mosquitoes | 8 | larva | filterer/collector | 3 | | | | 3 | |
| | | Dixidae | Dixa Midges | 1 | larva | filterer/collector | | | | | | |
| | | Simulidae | Blackflies | 6[d] | larva | filterer/collector | | | | | | |
| | | Tipulidae | Craneflies | 4 | larva | shredder | | | 1 | | | |
| | | Ceratopogonidae | Biting Midges | 6 | larva | predator | | | | | | |
| | | Chironomidae | Non-biting Midges | 7[c] | larva | NA | | | | 3 | 2 | |
| | | Chironomidae | Chironomini Midges | 6 | larva | gatherer/collector | 65 | 25 | 2 | | | 2 |
| | | Chironomidae | Tanytarsini Midges | 6 | larva | filterer/collector | 1 | | 1 | | | 1 |
| | | Chironomidae | Orthocladinae Midges | 5 | larva | gatherer/collector | | | | | | |
| | | Chironomidae | Tanypodinae Midges | 7 | larva | predator | 4 | 1 | | | | |
| Arachnida | Acariformes | Hydrachnidae | Water Mites | 6 | adult | predator | | | | | | |
| Malacostraca | Decapoda | Cambaridae | Crayfish | 6 | juvenile | gatherer/collector | 14 | | | 3 | 41 | 2 |
| | Isopoda | Asellidae | Aquatic Sow Bugs | 8 | juvenile | gatherer/collector | | | | | | |
| | Amphipoda | Crangonyctidae | Scuds | 6 | juvenile | gatherer/collector | 1 | | | 5 | | |
| | | | | | | TOTAL INDIVIDUALS | 95 | 28 | 56 | 166 | 58 | 5 |

## Table 5-13

### Benthic Invertebrate Identification Summary
### Baby Bains Gap Road Ranges BERA
### Fort McClellan, Calhoun County, Alabama



| Biological Stre<br>lbany, New York. | Order | Family | Common Name | Pollution Tolerance Value[a, b] | Life Stage | Functional Feeding Group[a, b] | BBGR BERA SED REF | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | riffle/run | CPOM |
| Turbellaria | | | Flatworms | 6 | adult | gatherer/collector | | |
| Gastropoda | Pleuroceridae | | Pleurocerid Snails | 6 | adult | scraper | | |
| | Physidae | | Physid Snails | 8 | adult | gatherer/collector | | |
| Oligochaeta | Tubificida | Tubificidae | tubifex worm | 10 | adult | gatherer/collector | | |
| | Lumbriculida | Lumbriculidae | Aquatic earthworm | 5 | adult | gatherer/collector | | |
| Insecta | Collembola | Isotomidae | Springtails | 5 | adult | gatherer/collector | | |
| | Ephemeroptera | | Mayflies | 4[c] | nymph | NA | 1 | |
| | | Heptageniidae | Flatheaded Mayflies | 3 | nymph | scraper | 1 | |
| | | Ephemeridae | Common Burrower Mayflies | 4[d] | nymph | gatherer/collector | | |
| | Plecoptera | Perlidae | Common Stoneflies | 3 | nymph | predator | 19 | 1 |
| | | Chloroperlidae | Green Stoneflies | 0 | nymph | predator | | |
| | | Peltoperlidae | Roachlike Stoneflies | 0 | nymph | shredder | 7 | 17 |
| | | Leuctridae | Rolled -winged Stoneflies | 0 | nymph | shredder | 5 | |
| | Trichoptera | | Caddisflies | 2[c] | larva | NA | | |
| | | Glossosomatidae | Saddlecase-maker Caddisflies | 1 | larva | scraper | | |
| | | Hydropsychidae | Common Netspinner Caddisflies | 5 | larva | filterer/collector | 46 | |
| | | Lepidostomatidae | Lepidostomatid Case-maker Caddisflies | 1 | larva | shredder | 1 | |
| | | Odontoceratidae | Strong case-maker Caddisflies | 0 | larva | scraper | | |
| | | Philopotamidae | Fingernet Caddisflies | 4 | larva | filterer/collector | 12 | |
| | | Polycentropodidae | Trumpetnet/Tubemaker Caddisflies | 6 | larva | filterer/collector | | |
| | | Psychomyiidae | Caddisflies | 2 | larva | gatherer/collector | | 22 |
| | | Rhyacophilidae | Freeliving Caddisflies | 1 | larva | predator | | |
| | | Calamoceratidae | Caddisflies | 3[f] | larva | shredder[e] | | 7 |
| | Odonata | Coenagrionidae | Narrow-winged Damselflies | 8 | nymph | predator | | |
| | | Cordulegastridae | Biddies | 3 | nymph | predator | 2 | |
| | | Calopterygidae | Broad-winged Damselflies | 6 | nymph | predator | | |
| | | Gomphidae | Club-tail Dragonflies | 4 | nymph | predator | | |
| | | Libellulidae | Skimmer Dragonflies | 2 | nymph | predator | | |
| | Coleoptera | | Beetles | 4[c] | | NA | | |
| | | Dytiscidae | Predaceous Diving Beetles | 5 | larva | predator | | |
| | | Psephenidae | Water Pennies | 4 | adult | scraper | 27 | |
| | | Elmidae | Riffle Beetles | 5 | larva/adult | scraper | 2 | 1 |
| | Lepidoptera | | Moths | 5 | larva | shredder | | |
| | Megaloptera | Corydalidae | Dobsonflies | 4 | larva | predator | 1 | |
| | | Sialidae | Alderflies | 4 | larva | predator | | |
| | Diptera | Culicidae | Mosquitoes | 8 | larva | filterer/collector | | |
| | | Dixidae | Dixa Midges | 1 | larva | filterer/collector | 1 | |
| | | Simulidae | Blackflies | 6[d] | larva | filterer/collector | | 1 |
| | | Tipulidae | Craneflies | 4 | larva | shredder | 10 | |
| | | Ceratopogonidae | Biting Midges | 6 | larva | predator | 2 | |
| | | Chironomidae | Non-biting Midges | 7[c] | larva | NA | | |
| | | Chironomidae | Chironomini Midges | 6 | larva | gatherer/collector | 4 | 6 |
| | | Chironomidae | Tanytarsini Midges | 6 | larva | filterer/collector | | 1 |
| | | Chironomidae | Orthocladinae Midges | 5 | larva | gatherer/collector | | 6 |
| | | Chironomidae | Tanypodinae Midges | 7 | larva | predator | 1 | |
| Arachnida | Acariformes | Hydrachnidae | Water Mites | 6 | adult | predator | | |
| Malacostraca | Decapoda | Cambaridae | Crayfish | 6 | juvenile | gatherer/collector | 2 | |
| | Isopoda | Asellidae | Aquatic Sow Bugs | 8 | juvenile | gatherer/collector | 9 | |
| | Amphipoda | Crangonyctidae | Scuds | 6 | juvenile | gatherer/collector | | |
| | | | | | | TOTAL INDIVIDUALS | 153 | 62 |

**Table 5-13**

**Benthic Invertebrate Identification Summary**
**Baby Bains Gap Road Ranges BERA**
**Fort McClellan, Calhoun County, Alabama**



[a] Unless otherwise noted, tolerance values and functional feeding group designations from Bode, et al, 2002.
[b] Bode, R.W., Novak, M.A., and Abele, L.E., 2002. Quality Assurance Workplan for Biological Stream Monitoring in New York State. NYS Department of Environmental Conservation, Albany, New York.
[c] Average of tolerance values for Families in taxon.
[d] Hilsenhoff, W.L., 1988. Rapid Field Assessment of Organic Pollution with a Family Level Biotic Index. *Journal of the North American Benthological Society*, Vol. 7(1): 65-68
[e] Merritt, R.W. and K.W. Cummins (eds.), 1984. *An Introduction to the Aquatic Insects of North America, 2nd ed*. Kendall/Hunt Publishing Company, Dubuque, IA.
[f] Hauer, F.R., and Lamberti, G.A. (eds.) 1996. Methods in Stream Ecology, Academic Press. ISBN: 0-12-332906-X. 696pp.
NA - not applicable - more than one feeding group in taxon.

## Table 5-14

### Rapid Bioassessment Metric Results
### Baby Bains Gap Road Ranges BERA
**Fort McClellan, Calhoun County, Alabama**

| Sample Location | Metric | | | | | | | | Total Score[h] | Percent Comparison to Reference Site | Biological Condition[a] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Taxa Richness[b] | Modified Family Biotic Index[c] | Ratio of Scrapers and Filt. Coll.[b] | Ratio of EPT and Chironomidae[b] | Percent Contribution of Dominant Taxon[d] | EPT Index[b] | Community Loss Index[e] | Ratio of Shredders and Total Organisms[b] | | | |
| BBGR BERA SDO1 | 9 | 4.524 | 13 | 5 | 31 | 2 | 1.222 | 0 | | | |
| % COMPARISON TO REFERENCE | 53 | 92 | 2557 | 27 | | 29 | | 0 | | | moderately |
| score [a] | 3 | 6 | 6 | 3 | 3 | 0 | 3 | 0 | 24 | 53 | impaired |
| BBGR BERA SD02 | 8 | 7.04 | 1 | 0.3 | 32 | 1 | 1.5 | 0.018 | | | |
| % COMPARISON TO REFERENCE | 47 | 59 | 197 | 2 | | 14 | | 3 | | | moderately |
| score [a] | 3 | 3 | 6 | 0 | 3 | 0 | 3 | 0 | 18 | 40 | impaired |
| BBGR BERA SD03 | 17 | 4.947 | 0.786 | 0.674 | 18 | 5 | 0.529 | 0.162 | | | |
| % COMPARISON TO REFERENCE | 100 | 84 | 155 | 4 | | 71 | | 26 | | | moderately |
| score [a] | 6 | 3 | 6 | 0 | 6 | 3 | 3 | 3 | 30 | 67 | impaired |
| BBGR BERA SD04 | 13 | 5.779 | 11.5 | 0.193 | 44 | 4 | 0.538 | 0 | | | |
| % COMPARISON TO REFERENCE | 76 | 72 | 2262 | 1 | | 57 | | 0 | | | moderately |
| score [a] | 3 | 3 | 6 | 0 | 3 | 0 | 3 | 0 | 18 | 40 | impaired |
| BBGR BERA SD05 | 10 | 5.909 | 1.833 | 0.643 | 26 | 3 | 1.1 | 0 | | | |
| % COMPARISON TO REFERENCE | 59 | 71 | 361 | 3 | | 43 | | 0 | | | moderately |
| score [a] | 3 | 3 | 6 | 0 | 6 | 0 | 3 | 0 | 21 | 47 | impaired |
| CWM 183 SD02 | 17 | 4.69 | 0.367 | 9.052 | 33 | 7 | 0.412 | 0.073 | | | |
| % COMPARISON TO REFERENCE | 100 | 89 | 72 | 49 | | 100 | | 12 | | | |
| score [a] | 6 | 6 | 6 | 3 | 3 | 6 | 6 | 0 | 36 | 80 | non-impaired |
| FTA 163 SD02 | 3 | 5.19 | (f) | 0 | 76 | 0 | 5.333 | 0.063 | | | |
| % COMPARISON TO REFERENCE | 18 | 80 | (f) | 0 | | 0 | | 10 | | | severely |
| score [a] | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 9 | 20 | impaired |
| HR74Q SD01 | 13 | 5.777 | 0.59 | (g) | 36 | 3 | 0.769 | 0.02 | | | |
| % COMPARISON TO REFERENCE | 76 | 72 | 116 | (g) | | 43 | | 3 | | | moderately |
| score [a] | 3 | 3 | 6 | 6 | 3 | 0 | 3 | 0 | 24 | 53 | impaired |
| HR79Q SD01 | 5 | 5.113 | (f) | 15 | 60 | 1 | 2.8 | 0.395 | | | |
| % COMPARISON TO REFERENCE | 29 | 82 | (f) | 82 | | 14 | | 63 | | | moderately |
| score [a] | 0 | 3 | 6 | 6 | 0 | 0 | 3 | 6 | 24 | 53 | impaired |
| HR79Q SD03 | 9 | 6.137 | 0.5 | 0.029 | 68 | 2 | 1.444 | 0 | | | |
| % COMPARISON TO REFERENCE | 53 | 68 | 98 | 0 | | 29 | | 0 | | | moderately |
| score [a] | 3 | 3 | 6 | 0 | 0 | 0 | 3 | 0 | 15 | 33 | impaired |
| HR79Q SD05 | 13 | 4.964 | 13 | 3.667 | 59 | 6 | 0.692 | 0.157 | | | |
| % COMPARISON TO REFERENCE | 76 | 84 | 2557 | 20 | | 86 | | 25 | | | moderately |
| score [a] | 3 | 3 | 6 | 0 | 0 | 3 | 3 | 0 | 18 | 40 | impaired |
| HR83Q SD01 | 7 | 5.845 | 0.333 | 0.5 | 71 | 1 | 1.857 | 0 | | | |
| % COMPARISON TO REFERENCE | 41 | 71 | 66 | 3 | | 14 | | 0 | | | moderately |
| score [a] | 3 | 3 | 6 | 0 | 0 | 0 | 3 | 0 | 15 | 33 | impaired |
| BBGR BERA SED REF | 17 | 4.176 | 0.508 | 18.4 | 30 | 7 | 0 | 0.632 | | | |
| score [a] | 6 | 6 | 6 | 6 | 3 | 6 | 6 | 6 | 45 | 100 | NA |

[a] Obtained from Figure 6.2.3 (Barbour, et al., 1989).
[b] Score is a ratio of study site to reference site x 100.
[c] Score is a ratio of reference site to study site x 100.
[d] Scoring criteria evaluate actual percent contribution, not percent comparability to reference station.
[e] Range of values obtained. The comparison to reference is incorporated into this calculation.
[f] Index not calculable, no filtering collectors in sample.
[g] Index not calculable, no Chironomidae in sample.
[h] Sum of all metrics.
NA. Not applicable

## Table 5-15

## Benthic Invertebrate Community Bioassessment Results and Sediment COPEC Concentrations
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama

| Sample Location | Rapid Bioassessment | | Sediment Concentrations (mg/kg) | | |
|---|---|---|---|---|---|
| | Score | Biological Condition | Copper | Lead | gamma-Chlordane |
| BERA-BBGR-BERA-REF | 45 | NA | 2.69 | 5.39 | 0 |
| BERA-BBGR-BERA-SD01 | 24 | moderately impaired | 10.1 | 26.2 | 0 |
| BERA-BBGR-BERA-SD02 | 18 | moderately impaired | 21.9* | 99.7* | 0.0028 |
| BERA-BBGR-BERA-SD03 | 27 | moderately impaired | 17.2* | 34.2* | 0 |
| BERA-BBGR-BERA-SD04 | 18 | moderately impaired | 7.59 | 26.5 | 0.003 |
| BERA-BBGR-BERA-SD05 | 21 | moderately impaired | 19.8* | 44.7* | 0 |
| BERA-CWM-183-SD02 | 36 | non-impaired | 16.6 | 16.6 | 0 |
| BERA-FTA-163-SD02 | 9 | severely impaired | 10.3 | 11.2 | 0 |
| BERA-HR-74Q-SD01 | 24 | moderately impaired | 16.2 | 73.5* | 0.0091* |
| BERA-HR-79Q-SD01 | 24 | moderately impaired | 22.5* | 111* | 0 |
| BERA-HR-79Q-SD03 | 15 | moderately impaired | 16.5 | 112* | 0 |
| BERA-HR-79Q-SD05 | 21 | moderately impaired | 7.32 | 14.8 | 0 |
| BERA-HR-83Q-SD01 | 15 | moderately impaired | 9.04 | 23.5 | 0 |

Notes:
Values shown with shading and an asterisk exceed the ESV and/or the background threshold value
Ecological screening values: lead 30.2 mg/kg, copper 18.7 mg/kg, gamma-chlordane .00324 mg/kg
Calculated background threshold values: copper 17.1 mg/kg, lead 37.8 mg/kg

## Table 6-1

## Site-Specific Soil Toxicity Values
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama

| Soil COPEC | Apparent Effects Threshold (AET) (mg/kg) | No Observable Effect Concentration (NOEC) (mg/kg) | Lowest Observable Effect Concentration (LOEC) (mg/kg) | Uncertainty Range (mg/kg) | Relative Predictability - AET | | Relative Predictability - LOEC | |
|---|---|---|---|---|---|---|---|---|
| | | | | | False Positives | False Negatives | False Positives | False Negatives |
| **28-Day Earthworm Survival and Weight Change** | | | | | | | | |
| Antimony | >1,310 | 1,310 | >1,310 | | | | | |
| Beryllium | >1.67 | 1.67 | >1.67 | | | | | |
| Copper | >563 | 563 | >563 | | | | | |
| Lead | >146,000 | 146,000 | >146,000 | | | | | |
| Zinc | >154 | 154 | >154 | | | | | |
| **15-Day Rye Grass Germination** | | | | | | | | |
| Antimony | >1,310 | 1,310 | >1,310 | | | | | |
| Beryllium | >1.67 | 1.67 | >1.67 | | | | | |
| Copper | >563 | 563 | >563 | | | | | |
| Lead | >146,000 | 146,000 | >146,000 | | | | | |
| Zinc | >154 | 154 | >154 | | | | | |
| **15-Day Rye Grass Shoot Length** | | | | | | | | |
| Antimony | 1,310 | 4.92 | 5.29 | 5.29 - 1,310 | 0 | 1 | 2 | 0 |
| Beryllium | 1.67 | 0.624 | 0.685 | 0.685 - 1.67 | 0 | 1 | 4 | 0 |
| Copper | 563 | 152 | 184 | 184 - 563 | 0 | 1 | 1 | 0 |
| Lead | 146,000 | 526 | 919 | 919 - 146,000 | 0 | 1 | 2 | 0 |
| Zinc | 154 | 37.3 | 53.5 | 53.5 - 154 | 0 | 1 | 2 | 0 |
| **15-Day Rye Grass Root Length** | | | | | | | | |
| Antimony | 1,310 | <0.724 | 0.724 | 0.724 - 7.35 | 0 | 3 | 6 | 0 |
| Beryllium | 1.02 | 0.156 | 0.444 | 0.444 - 0.757 | 0 | 2 | 5 | 0 |
| Copper | 152 | <16.5 | 16.5 | 16.5 - 74.1 | 0 | 1 | 6 | 0 |
| Lead | 146,000 | 102 | 125 | 125 - 1,240 | 0 | 4 | 4 | 0 |
| Zinc | 53.5 | 22.3 | 25.4 | 25.4 - 37.3 | 0 | 1 | 4 | 0 |
| **15-Day Rye Grass Weight** | | | | | | | | |
| Antimony | 1,310 | <0.724 | 0.724 | 0.724 - 7.35 | 0 | 3 | 6 | 0 |
| Beryllium | 1.02 | 0.583 | 0.597 | 0.597 - 0.757 | 0 | 2 | 3 | 0 |
| Copper | 184 | <16.5 | 16.5 | 16.5 - 152 | 0 | 2 | 6 | 0 |
| Lead | 146,000 | 102 | 125 | 125 - 1,240 | 0 | 3 | 4 | 0 |
| Zinc | >154 | 22.3 | 25.4 | 25.4 - 154 | 0 | 4 | 3 | 0 |

Table 6-2

**Terrestrial Foodweb Indicator Species Life History Parameters**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Common Name | Scientific Name | Feeding Guild | Foraging Area (acres) | Body Weight (kg) | Water Ingestion Rate (L/kg/day) | Food Ingestion Rate (kg/kg/day) | Soil / Sediment Ingestion Rate (kg/kg/day) | Dietary Fraction | Dietary Component |
|---|---|---|---|---|---|---|---|---|---|
| White-Footed Mouse | *Peromyscus leucopus* | Omnivorous Mammal | 1 (b) | 0.0225 (b) | 0.218 (a) | 0.1193 (a) | 0.0012 (c) | 0.254<br>0.746 | Terrestrial Invertebrates<br>Terrestrial Vegetation |
| American Robin | *Turdus migratorius* | Omnivorous Bird | 0.61 (a) | 0.081 (a) | 0.14 (a) | 0.1816 (a) | 0.00363 (d) | 0.375<br>0.625 | Terrestrial Invertebrates<br>Terrestrial Vegetation |
| Short-Tailed Shrew | *Blarina brevicauda* | Invertivorous Mammal | 0.964 (a) | 0.0168 (a) | 0.223 (a) | 0.0886 (a) | 0.00845 (e) | 0.887<br>0.113 | Terrestrial Invertebrates<br>Terrestrial Vegetation |
| American Woodcock | *Scolopax minor* | Invertivorous Bird | 74.7 (a) | 0.17 (a) | 0.1 (a) | 0.1485 (a) | 0.0158 (a) | 0.950<br>0.050 | Terrestrial Invertebrates<br>Terrestrial Vegetation |

Notes:

All of the values presented in this table represent arithmetic mean values if more than one value was presented in the referenced source.

a USEPA, 1993. *Wildlife Exposure Factors Handbook*. EPA/600/R-93/187a

b Burt, W.H. and R.P. Grossenheider. *Mammals, Peterson Field Guide*.

c Talmage and Walton, 1993. *Food Chain Transfer and Potential Renal Toxicity of Mercury to Small Mammals at a Contaminated Terrestrial Field Site*. Ecotoxicology 2: 243-256.

d Assumed value based on soil ingestion values for other birds presented in USEPA (1993).

e Sample, B.E., M.S. Alpin, R.A. Efroymson, G.W. Suter, and C.J.E. Welsh, 1997. *Methods and Tools for Estimation of the Exposure of Terrestrial Wildlife to Contaminants*.

f Soil ingestion rates (dry weight) were calculated using the following relationship: IRsoil = IRfood x Dietsoil x (1 - Dietmoist)

where:

IRsoil = ingestion rate of soil (kg/kg/day, dry weight);
IRfood = food ingestion rate (kg/kg/day, wet weight);
Dietsoil = percentage of diet that is soil (percent); and
Dietmoist = weighted average moisture content of diet (percent).

## Table 6-3

## Biological Fate and Transport Properties for the Constituents of Potential Ecological Concern in the Terrestrial Foodweb
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Constituents of Potential Ecological Concern | CAS Number | Molecular Weight | Henry's Law Constant ($atm/m^3$-$mole^{-1}$) | Octanol-Water Partition Coefficient (log $K_{ow}$) ($M_{oct}/M_{water}$) | Organic Carbon Partition Coefficient (log $K_{oc}$) (L/kg) | Soil to Plant BAF (unitless) | | Soil to Invertebrate BAF (unitless) | |
|---|---|---|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | | | | |
| Antimony | 7440-36-0 | 121.75 | 0.00E+00 | NA | NA | 0.2 | 1 | 0.22 | 1 |
| Beryllium | 7440-41-7 | 9.01 | 0.00E+00 | NA | NA | 0.01 | 1 | 0.22 | 1 |
| Copper | 7440-50-8 | 63.55 | 0.00E+00 | NA | NA | 0.4 | 1 | 0.5 | 2 |
| Lead | 7439-92-1 | 207.2 | 0.00E+00 | NA | NA | 0.03 | 2 | 0.53 | 2 |
| Zinc | 7440-66-6 | 65.39 | 0.00E+00 | NA | NA | 1.2E-12 | 1 | 0.56 | 1 |

NOTES :

1) USEPA, 1999. *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities .*

2) Calculated using site-specific soil and earthworm tissue data.

## Table 6-4

### Exposure Point Concentrations for the Constituents of Potential Ecological Concern in the Terrestrial Foodweb

Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituents Of Potential Ecological Concern | Constituent Concentration | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Surface Water | | Surface Soil | | Seeds, Grass, & Fruit | | Fruit | | Roots & Young Grass | | Seeds | | Terrestrial Invertebrates | |
| | Max. Conc. (mg/L) | Mean Conc. (mg/L) | Max. Conc. (mg/kg) | Mean Conc. (mg/kg) | Max. Conc. (mg/kg) | Mean Conc. (mg/kg) | Max. Conc. (mg/kg) | Mean Conc. (mg/kg) | Max. Conc. (mg/kg) | Mean Conc. (mg/kg) | Max. Conc. (mg/kg) | Mean Conc. (mg/kg) | Max. Conc. (mg/kg) | Mean Conc. (mg/kg) |
| **Inorganic Constituents :** | | | | | | | | | | | | | | |
| Antimony | ND | ND | 8.64E+01 | 8.38E+00 | 1.73E+01 | 1.68E+00 | 1.73E+01 | 1.68E+00 | 1.73E+01 | 1.68E+00 | 1.73E+01 | 1.68E+00 | 1.90E+01 | 1.84E+00 |
| Beryllium | ND | ND | 5.95E+00 | 9.44E-01 | 5.95E-02 | 9.44E-03 | 5.95E-02 | 9.44E-03 | 5.95E-02 | 9.44E-03 | 5.95E-02 | 9.44E-03 | 1.31E+00 | 2.08E-01 |
| Copper | ND | ND | 1.50E+04 | 2.64E+02 | 6.00E+03 | 1.06E+02 | 6.00E+03 | 1.06E+02 | 6.00E+03 | 1.06E+02 | 6.00E+03 | 1.06E+02 | 7.50E+03 | 1.32E+02 |
| Lead | 3.97E-03 | 3.97E-03 | 2.33E+04 | 9.71E+02 | 6.99E+02 | 2.91E+01 | 6.99E+02 | 2.91E+01 | 6.99E+02 | 2.91E+01 | 6.99E+02 | 2.91E+01 | 1.23E+04 | 5.14E+02 |
| Zinc | ND | ND | 1.25E+03 | 5.39E+01 | 6.88E+00 | 2.96E-01 | 6.88E+00 | 2.96E-01 | 6.88E+00 | 2.96E-01 | 6.88E+00 | 2.96E-01 | 2.75E+02 | 1.19E+01 |

Table 6-5

**Maximum Constituent Exposures**
**for White-Footed Mouse**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituent Of Potential Ecological Concern | MAXIMUM EXPOSURE POINT CONCENTRATIONS | | | | MAXIMUM CONSTITUENT DOSES | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Soil (mg/kg) | Surface Water (mg/L) | Terrestrial Invertebrates (mg/kg) | Terrestrial Vegetation (mg/kg) | Soil (mg/kg-day) | Surface Water (mg/kg - day) | Terrestrial Invertebrates (mg/kg-day) | Terrestrial Vegetation (mg/kg - day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | | | |
| Antimony | 8.64E+01 | ND | 1.90E+01 | 1.73E+01 | 6.22E-02 | NA | 5.76E-01 | 1.54E+00 | 2.18E+00 |
| Beryllium | 5.95E+00 | ND | 1.31E+00 | 5.95E-02 | 4.28E-03 | NA | 3.97E-02 | 5.30E-03 | 4.92E-02 |
| Copper | 1.50E+04 | ND | 7.50E+03 | 6.00E+03 | 1.08E+01 | NA | 2.27E+02 | 5.34E+02 | 7.72E+02 |
| Lead | 2.33E+04 | 3.97E-03 | 1.23E+04 | 6.99E+02 | 1.68E+01 | 8.65E-04 | 3.74E+02 | 6.22E+01 | 4.53E+02 |
| Zinc | 1.25E+03 | ND | 2.75E+02 | 6.88E+00 | 9.00E-01 | NA | 8.33E+00 | 6.12E-01 | 9.84E+00 |

Table 6-6

**Maximum Constituent Exposures**
**for American Robin**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituent Of Potential Ecological Concern | MAXIMUM EXPOSURE POINT CONCENTRATIONS | | | | MAXIMUM CONSTITUENT DOSES | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Soil (mg/kg) | Surface Water (mg/L) | Terrestrial Invertebrates (mg/kg) | Terrestrial Vegetation (mg/kg) | Soil (mg/kg-day) | Surface Water (mg/kg-day) | Terrestrial Invertebrates (mg/kg-day) | Terrestrial Vegetation (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | | | |
| Antimony | 8.64E+01 | ND | 1.90E+01 | 1.73E+01 | 1.88E-01 | NA | 1.29E+00 | 1.96E+00 | 3.44E+00 |
| Beryllium | 5.95E+00 | ND | 1.31E+00 | 5.95E-02 | 1.30E-02 | NA | 8.91E-02 | 6.75E-03 | 1.09E-01 |
| Copper | 1.50E+04 | ND | 7.50E+03 | 6.00E+03 | 3.27E+01 | NA | 5.11E+02 | 6.81E+02 | 1.22E+03 |
| Lead | 2.33E+04 | 3.97E-03 | 1.23E+04 | 6.99E+02 | 5.07E+01 | 5.56E-04 | 8.41E+02 | 7.93E+01 | 9.71E+02 |
| Zinc | 1.25E+03 | ND | 2.75E+02 | 6.88E+00 | 2.72E+00 | NA | 1.87E+01 | 7.80E-01 | 2.22E+01 |

Table 6-7

**Maximum Constituent Exposures**
**for Short-Tailed Shrew**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituent Of Potential Ecological Concern | MAXIMUM EXPOSURE POINT CONCENTRATIONS | | | | MAXIMUM CONSTITUENT DOSES | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Soil (mg/kg) | Surface Water (mg/L) | Terrestrial Invertebrates (mg/kg) | Terrestrial Vegetation (mg/kg) | Soil (mg/kg - day) | Surface Water (mg/kg - day) | Terrestrial Invertebrates (mg/kg - day) | Terrestrial Vegetation (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | | | |
| Antimony | 8.64E+01 | ND | 1.90E+01 | 1.73E+01 | 4.38E-01 | NA | 1.49E+00 | 1.73E-01 | 2.10E+00 |
| Beryllium | 5.95E+00 | ND | 1.31E+00 | 5.95E-02 | 3.02E-02 | NA | 1.03E-01 | 5.96E-04 | 1.34E-01 |
| Copper | 1.50E+04 | ND | 7.50E+03 | 6.00E+03 | 7.61E+01 | NA | 5.89E+02 | 6.01E+01 | 7.26E+02 |
| Lead | 2.33E+04 | 3.97E-03 | 1.23E+04 | 6.99E+02 | 1.18E+02 | 8.85E-04 | 9.70E+02 | 7.00E+00 | 1.10E+03 |
| Zinc | 1.25E+03 | ND | 2.75E+02 | 6.88E+00 | 6.34E+00 | NA | 2.16E+01 | 6.88E-02 | 2.80E+01 |

Table 6-8

**Maximum Constituent Exposures**
**for American Woodcock**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituent Of Potential Ecological Concern | MAXIMUM EXPOSURE POINT CONCENTRATIONS | | | | MAXIMUM CONSTITUENT DOSES | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Soil (mg/kg) | Surface Water (mg/L) | Terrestrial Invertebrates (mg/kg) | Terrestrial Vegetation (mg/kg) | Soil (mg/kg - day) | Surface Water (mg/kg - day) | Terrestrial Invertebrates (mg/kg - day) | Terrestrial Vegetation (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | | | |
| Antimony | 8.64E+01 | ND | 1.90E+01 | 1.73E+01 | 8.19E-01 | NA | 2.68E+00 | 1.28E-01 | 3.63E+00 |
| Beryllium | 5.95E+00 | ND | 1.31E+00 | 5.95E-02 | 5.64E-02 | NA | 1.85E-01 | 4.42E-04 | 2.42E-01 |
| Copper | 1.50E+04 | ND | 7.50E+03 | 6.00E+03 | 1.42E+02 | NA | 1.06E+03 | 4.46E+01 | 1.24E+03 |
| Lead | 2.33E+04 | 3.97E-03 | 1.23E+04 | 6.99E+02 | 2.21E+02 | 3.97E-04 | 1.74E+03 | 5.19E+00 | 1.97E+03 |
| Zinc | 1.25E+03 | ND | 2.75E+02 | 6.88E+00 | 1.19E+01 | NA | 3.88E+01 | 5.10E-02 | 5.07E+01 |

## Table 6-9

### Mean Constituent Exposures
### for White-Footed Mouse
### Baby Bains Gap Road Ranges
### Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | MEAN EXPOSURE POINT CONCENTRATIONS | | | | MEAN CONSTITUENT DOSES | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Soil (mg/kg) | Surface Water (mg/L) | Terrestrial Invertebrates (mg/kg) | Terrestrial Vegetation (mg/kg) | Soil (mg/kg-day) | Surface Water (mg/kg - day) | Terrestrial Invertebrates (mg/kg-day) | Terrestrial Vegetation (mg/kg - day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | | | |
| Antimony | 8.38E+00 | ND | 1.84E+00 | 1.68E+00 | 6.03E-03 | NA | 5.59E-02 | 1.49E-01 | 2.11E-01 |
| Beryllium | 9.44E-01 | ND | 2.08E-01 | 9.44E-03 | 6.80E-04 | NA | 6.29E-03 | 8.40E-04 | 7.81E-03 |
| Copper | 2.64E+02 | ND | 1.32E+02 | 1.06E+02 | 1.90E-01 | NA | 4.00E+00 | 9.39E+00 | 1.36E+01 |
| Lead | 9.71E+02 | 3.97E-03 | 5.14E+02 | 2.91E+01 | 6.99E-01 | 8.65E-04 | 1.56E+01 | 2.59E+00 | 1.89E+01 |
| Zinc | 5.39E+01 | ND | 1.19E+01 | 2.96E-01 | 3.88E-02 | NA | 3.59E-01 | 2.64E-02 | 4.25E-01 |

## Table 6-10

### Mean Constituent Exposures
### for American Robin
### Baby Bains Gap Road Ranges
### Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | MEAN EXPOSURE POINT CONCENTRATIONS | | | | MEAN CONSTITUENT DOSES | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Soil (mg/kg) | Surface Water (mg/L) | Terrestrial Invertebrates (mg/kg) | Terrestrial Vegetation (mg/kg) | Soil (mg/kg-day) | Surface Water (mg/kg-day) | Terrestrial Invertebrates (mg/kg-day) | Terrestrial Vegetation (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | | | |
| Antimony | 8.38E+00 | ND | 1.84E+00 | 1.68E+00 | 1.83E-02 | NA | 1.26E-01 | 1.90E-01 | 3.34E-01 |
| Beryllium | 9.44E-01 | ND | 2.08E-01 | 9.44E-03 | 2.06E-03 | NA | 1.41E-02 | 1.07E-03 | 1.73E-02 |
| Copper | 2.64E+02 | ND | 1.32E+02 | 1.06E+02 | 5.75E-01 | NA | 8.99E+00 | 1.20E+01 | 2.15E+01 |
| Lead | 9.71E+02 | 3.97E-03 | 5.14E+02 | 2.91E+01 | 2.11E+00 | 5.56E-04 | 3.50E+01 | 3.30E+00 | 4.04E+01 |
| Zinc | 5.39E+01 | ND | 1.19E+01 | 2.96E-01 | 1.17E-01 | NA | 8.08E-01 | 3.36E-02 | 9.59E-01 |

## Table 6-11

**Mean Constituent Exposures**
**for Short-Tailed Shrew**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituent Of Potential Ecological Concern | MEAN EXPOSURE POINT CONCENTRATIONS | | | | MEAN CONSTITUENT DOSES | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Soil (mg/kg) | Surface Water (mg/L) | Terrestrial Invertebrates (mg/kg) | Terrestrial Vegetation (mg/kg) | Soil (mg/kg - day) | Surface Water (mg/kg - day) | Terrestrial Invertebrates (mg/kg - day) | Terrestrial Vegetation (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | | | |
| Antimony | 8.38E+00 | ND | 1.84E+00 | 1.68E+00 | 4.25E-02 | NA | 1.45E-01 | 1.68E-02 | 2.04E-01 |
| Beryllium | 9.44E-01 | ND | 2.08E-01 | 9.44E-03 | 4.79E-03 | NA | 1.63E-02 | 9.45E-05 | 2.12E-02 |
| Copper | 2.64E+02 | ND | 1.32E+02 | 1.06E+02 | 1.34E+00 | NA | 1.04E+01 | 1.06E+00 | 1.28E+01 |
| Lead | 9.71E+02 | 3.97E-03 | 5.14E+02 | 2.91E+01 | 4.92E+00 | 8.85E-04 | 4.04E+01 | 2.91E-01 | 4.56E+01 |
| Zinc | 5.39E+01 | ND | 1.19E+01 | 2.96E-01 | 2.73E-01 | NA | 9.32E-01 | 2.97E-03 | 1.21E+00 |

Table 6-12

**Mean Constituent Exposures**
**for American Woodcock**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituent Of Potential Ecological Concern | MEAN EXPOSURE POINT CONCENTRATIONS | | | | MEAN CONSTITUENT DOSES | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Soil (mg/kg) | Surface Water (mg/L) | Terrestrial Invertebrates (mg/kg) | Terrestrial Vegetation (mg/kg) | Soil (mg/kg - day) | Surface Water (mg/kg - day) | Terrestrial Invertebrates (mg/kg - day) | Terrestrial Vegetation (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | | | |
| Antimony | 8.38E+00 | ND | 1.84E+00 | 1.68E+00 | 7.94E-02 | NA | 2.60E-01 | 1.24E-02 | 3.52E-01 |
| Beryllium | 9.44E-01 | ND | 2.08E-01 | 9.44E-03 | 8.95E-03 | NA | 2.93E-02 | 7.01E-05 | 3.83E-02 |
| Copper | 2.64E+02 | ND | 1.32E+02 | 1.06E+02 | 2.50E+00 | NA | 1.86E+01 | 7.84E-01 | 2.19E+01 |
| Lead | 9.71E+02 | 3.97E-03 | 5.14E+02 | 2.91E+01 | 9.20E+00 | 3.97E-04 | 7.26E+01 | 2.16E-01 | 8.20E+01 |
| Zinc | 5.39E+01 | ND | 1.19E+01 | 2.96E-01 | 5.11E-01 | NA | 1.67E+00 | 2.20E-03 | 2.19E+00 |

Table 6-13

**Avian Toxicity Reference Values**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituent Of Potential Ecological Concern | Toxicity Test Receptor | Toxicity Test Endpoint | NOAEL-Based Toxicity Reference Values | | | | LOAEL-Based Toxicity Reference Values | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dose (mg/kg/day) | Uncertainty Factor | TRV (mg/kg/day) | Ref. | Dose (mg/kg/day) | Uncertainty Factor | TRV (mg/kg/day) | Ref. |
| **Inorganic Constituents :** | | | | | | | | | | |
| Antimony | Red-winged Blackbird | Mortality | 100 | 900 | 0.111 | 3 | 100 | 180 | 0.556 | 3 |
| Beryllium | | | | | NA | | | | NA | |
| Copper | 1-Day old chicks | Growth & Mortality | 46.97 | 1 | 46.97 | 2 | 61.72 | 1 | 61.72 | 2 |
| Lead | American Kestrel & Japanese Quail | Reproduction | 3.85 | 1 | 3.85 | 5 | 11.3 | 1 | 11.30 | 1 |
| Zinc | Leghorn hen | Reproduction | 130.9 | 1 | 130.9 | 4 | 130.9 | 0.1 | 1310 | 4 |

NOTES :


1) Edens, F., W.E. Benton, S.J. Bursian, and G.W. Morgan, 1976. "Effect of Dietary Lead on Reproductive Performance in Japanese Quail, Coturnix coturnix japonica." *Toxicol. Appl. Pharmacol*., 38: 307-314.

2) Mehring, A.L., J.H. Brumbaugh, A.J. Sutherland, and H.W. Titus, 1960. "The Tolerance of Growing Chickens for Dietary Copper." Poultry Science, Vol. 39, pp. 713-719.

3) Schafer, E.W., W.A. Bowles, and J. Hurlbut, 1983. The Acute Oral Toxicity, Repellency, and Hazard Potential of 998 Chemicals to One or More Species of Wild and Domestic Birds. *Arch. Environ Contam. Toxicol*. 12(3): 355-382. As cited in: Hazardous Substances Databank. January 1995.

4) Stahl, J.L., J.L. Greger, and M.E. Cook, 1990. "Breeding-Hen and Progeny Performance When Hens are Fed Excessive Dietary Zinc." Poultry Science, Vol. 69, pp. 259-263.

5) Pattee, O.H., 1984. "Eggshell Thickness and Reproduction in American Kestrels Exposed to Chronic Dietary Lead." *Arch. Environ. Contam. Toxico*l., 13: 213-218.

## Table 6-14

### Mammalian Toxicity Reference Values
### Baby Bains Gap Road Ranges
### Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Toxicity Test Receptor | Toxicity Test Endpoint | NOAEL-Based Toxicity Reference Values | | | | LOAEL-Based Toxicity Reference Values | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dose (mg/kg/day) | Uncertainty Factor | TRV (mg/kg/day) | Ref. | Dose (mg/kg/day) | Uncertainty Factor | TRV (mg/kg/day) | Ref. |
| **Inorganic Constituents :** | | | | | | | | | | |
| Antimony | Mouse | Longevity | 1.25 | 10 | 0.125 | 5 | 1.25 | 1 | 1.25 | 5 |
| Beryllium | Rat | Longevity | 0.66 | 1 | 0.66 | 6 | 0.66 | 1 | 6.6 | 6 |
| Copper | Mink | Reproduction | 12 | 1 | 12 | 1 | 15.4 | 1 | 15.4 | 1 |
| Lead | Rat | Reproduction | 8 | 1 | 8 | 2 | 80 | 1 | 80 | 2 |
| Zinc | Mouse & Rat | Growth & Reproduction | 104 | 10 | 10.4 | 3 | 320 | 1 | 320 | 4 |

NOTES :


1) Aulerich, R.J., R.K. Ringer, M.R. Bleavins, and A. Napolitano, 1982. "Effects of Supplemental Dietary Copper on Growth, Reproductive Performance, and Kit Survival of Standard Dark Mink and the Acute To of Copper to Mink." Journal of Animal Science, Vol. 55, pp. 337-343.
2) Azar, A. H.J. Trochimowicz, and M.E. Maxwell, 1973. "Review of Lead Studies in Animals Carried Out at Haskell Laboratory: Two-Year Feeding Study and Response to Hemorrhage Study." *In: Environmenta Health Aspects of Lead: Proceedings, International Symposium*. D. Barth, et al., eds. Commission of Europen Communities, pp. 199-210.
3) Maita, K., M. Hirano, K. Mitsumori, K. Takabashi, and Y. Shirasu, 1981. "Subacute Toxicity Studies with Zinc Sulfate in Mice and Rats. " *Journal of Pesticide Science*, Vol. 6, pp. 327-336.
4) Schlicker, S.A. and D.H. Cox, 1968. "Maternal Dietary Zinc, and Development and Zinc, Iron, and Copper Content of the Rat Fetus." *J. Nutr.*, 95:: 287-294.
5) Schroeder, H.A., M. Mitchener, J.J. Balassa, M. Kanisawa, and A.P. Nason, 1968. "Zirconium, Niobium, Antimony, and Fluorine, in Mice: Effects on Growth, Survival, and Tissue Levels." *J. Nutr.*, 95: 95-10

## Table 6-15

### Comparison of Maximum Constituent Exposures
### With Toxicity Reference Values for White-Footed Mouse
### Baby Bains Gap Road Ranges
### Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Maximum Constituent Exposure (mg/kg-day) | Mammalian NOAEL (mg/kg-day) | Mammalian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Antimony | 2.18E+00 | 1.25E-01 | 1.25E+00 | 1.74E+01 | 1.74E+00 | **YES** |
| Beryllium | 4.92E-02 | 6.60E-01 | 6.60E+00 | 7.46E-02 | 7.46E-03 | No |
| Copper | 7.72E+02 | 1.20E+01 | 1.54E+01 | 6.43E+01 | 5.01E+01 | **YES** |
| Lead | 4.53E+02 | 8.00E+00 | 8.00E+01 | 5.66E+01 | 5.66E+00 | **YES** |
| Zinc | 9.84E+00 | 1.04E+01 | 3.20E+02 | 9.47E-01 | 3.08E-02 | No |

NA - Not Available
ND - Not Determined

## Table 6-16

### Comparison of Maximum Constituent Exposures
### With Toxicity Reference Values for American Robin
### Baby Bains Gap Road Ranges
### Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Maximum Constituent Exposure (mg/kg-day) | Avian NOAEL (mg/kg-day) | Avian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Antimony | 3.44E+00 | 1.11E-01 | 5.56E-01 | 3.10E+01 | 6.20E+00 | **YES** |
| Beryllium | 1.09E-01 | NA | NA | ND | ND | ND |
| Copper | 1.22E+03 | 4.70E+01 | 6.17E+01 | 2.61E+01 | 1.98E+01 | **YES** |
| Lead | 9.71E+02 | 3.85E+00 | 1.13E+01 | 2.52E+02 | 8.59E+01 | **YES** |
| | 2.22E+01 | 1.31E+02 | 1.31E+03 | 1.70E-01 | 1.70E-02 | No |

NA - Not Available

ND - Not Determined

## Table 6-17

## Comparison of Maximum Constituent Exposures
## With Toxicity Reference Values for Short-Tailed Shrew
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Maximum Constituent Exposure (mg/kg-day) | Mammalian NOAEL (mg/kg-day) | Mammalian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Antimony | 2.10E+00 | 1.25E-01 | 1.25E+00 | 1.68E+01 | 1.68E+00 | **YES** |
| Beryllium | 1.34E-01 | 6.60E-01 | 6.60E+00 | 2.02E-01 | 2.02E-02 | No |
| Copper | 7.26E+02 | 1.20E+01 | 1.54E+01 | 6.05E+01 | 4.71E+01 | **YES** |
| Lead | 1.10E+03 | 8.00E+00 | 8.00E+01 | 1.37E+02 | 1.37E+01 | **YES** |
| Zinc | 2.80E+01 | 1.04E+01 | 3.20E+02 | 2.69E+00 | 8.76E-02 | **YES** |

NA - Not Available
ND - Not Determined

## Table 6-18

## Comparison of Maximum Constituent Exposures
## With Toxicity Reference Values for American Woodcock
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Maximum Constituent Exposure (mg/kg-day) | Avian NOAEL (mg/kg-day) | Avian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Antimony | 3.63E+00 | 1.11E-01 | 5.56E-01 | 3.27E+01 | 6.53E+00 | **YES** |
| Beryllium | 2.42E-01 | NA | NA | ND | ND | ND |
| Copper | 1.24E+03 | 4.70E+01 | 6.17E+01 | 2.65E+01 | 2.02E+01 | **YES** |
| Lead | 1.97E+03 | 3.85E+00 | 1.13E+01 | 5.11E+02 | 1.74E+02 | **YES** |
| Zinc | 5.07E+01 | 1.31E+02 | 1.31E+03 | 3.87E-01 | 3.87E-02 | No |

NA - Not Available
ND - Not Determined

## Table 6-19

## Comparison of Mean Constituent Exposures
## With Toxicity Reference Values for White-Footed Mouse
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Mean Constituent Exposure (mg/kg-day) | Mammalian NOAEL (mg/kg-day) | Mammalian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Antimony | 2.11E-01 | 1.25E-01 | 1.25E+00 | 1.69E+00 | 1.69E-01 | **YES** |
| Beryllium | 7.81E-03 | 6.60E-01 | 6.60E+00 | 1.18E-02 | 1.18E-03 | No |
| Copper | 1.36E+01 | 1.20E+01 | 1.54E+01 | 1.13E+00 | 8.82E-01 | YES |
| Lead | 1.89E+01 | 8.00E+00 | 8.00E+01 | 2.36E+00 | 2.36E-01 | **YES** |
| Zinc | 4.25E-01 | 1.04E+01 | 3.20E+02 | 4.08E-02 | 1.33E-03 | No |

NA - Not Available

ND - Not Determined

## Table 6-20

## Comparison of Mean Constituent Exposures
## With Toxicity Reference Values for American Robin
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Mean Constituent Exposure (mg/kg-day) | Avian NOAEL (mg/kg-day) | Avian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Antimony | 3.34E-01 | 1.11E-01 | 5.56E-01 | 3.01E+00 | 6.01E-01 | **YES** |
| Beryllium | 1.73E-02 | NA | NA | ND | ND | ND |
| Copper | 2.15E+01 | 4.70E+01 | 6.17E+01 | 4.59E-01 | 3.49E-01 | No |
| Lead | 4.04E+01 | 3.85E+00 | 1.13E+01 | 1.05E+01 | 3.58E+00 | **YES** |
| Zinc | 9.59E-01 | 1.31E+02 | 1.31E+03 | 7.32E-03 | 7.32E-04 | No |

NA - Not Available

ND - Not Determined

## Table 6-21

## Comparison of Mean Constituent Exposures
## With Toxicity Reference Values for Short-Tailed Shrew
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Mean Constituent Exposure (mg/kg-day) | Mammalian NOAEL (mg/kg-day) | Mammalian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Antimony | 2.04E-01 | 1.25E-01 | 1.25E+00 | 1.63E+00 | 1.63E-01 | **YES** |
| Beryllium | 2.12E-02 | 6.60E-01 | 6.60E+00 | 3.21E-02 | 3.21E-03 | No |
| Copper | 1.28E+01 | 1.20E+01 | 1.54E+01 | 1.06E+00 | 8.29E-01 | **YES** |
| Lead | 4.56E+01 | 8.00E+00 | 8.00E+01 | 5.70E+00 | 5.70E-01 | **YES** |
| Zinc | 1.21E+00 | 1.04E+01 | 3.20E+02 | 1.16E-01 | 3.78E-03 | No |

NA - Not Available
ND - Not Determined

## Table 6-22

## Comparison of Mean Constituent Exposures
## With Toxicity Reference Values for American Woodcock
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Mean Constituent Exposure (mg/kg-day) | Avian NOAEL (mg/kg-day) | Avian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Antimony | 3.52E-01 | 1.11E-01 | 5.56E-01 | 3.17E+00 | 6.34E-01 | YES |
| Beryllium | 3.83E-02 | NA | NA | ND | ND | ND |
| Copper | 2.19E+01 | 4.70E+01 | 6.17E+01 | 4.66E-01 | 3.55E-01 | No |
| Lead | 8.20E+01 | 3.85E+00 | 1.13E+01 | 2.13E+01 | 7.25E+00 | **YES** |
| Zinc | 2.19E+00 | 1.31E+02 | 1.31E+03 | 1.67E-02 | 1.67E-03 | No |

NA - Not Available
ND - Not Determined

## Table 6-23

## Summary of Terrestrial Food Web Hazard Quotients
## Assuming Maximum Exposure Point Concentrations
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Maximum White-Footed Mouse HQs | | Maximum American Robin HQs | | Maximum Short-Tail Shrew HQs | | Maximum American Woodcock HQs | |
|---|---|---|---|---|---|---|---|---|
| | NOAEL-Hazard Quotients | LOAEL Hazard Quotients | NOAEL Hazard Quotients | LOAEL Hazard Quotients | NOAEL Hazard Quotients | LOAEL Hazard Quotients | NOAEL Hazard Quotients | LOAEL Hazard Quotients |
| **Inorganic Constituents :** | | | | | | | | |
| Antimony | 1.74E+01 | 1.74E+00 | 3.10E+01 | 6.20E+00 | 1.68E+01 | 1.68E+00 | 3.27E+01 | 6.53E+00 |
| Beryllium | 7.46E-02 | 7.46E-03 | ND | ND | 2.02E-01 | 2.02E-02 | ND | ND |
| Copper | 6.43E+01 | 5.01E+01 | 2.61E+01 | 1.98E+01 | 6.05E+01 | 4.71E+01 | 2.65E+01 | 2.02E+01 |
| Lead | 5.66E+01 | 5.66E+00 | 2.52E+02 | 8.59E+01 | 1.37E+02 | 1.37E+01 | 5.11E+02 | 1.74E+02 |
| Zinc | 9.47E-01 | 3.08E-02 | 1.70E-01 | 1.70E-02 | 2.69E+00 | 8.76E-02 | 3.87E-01 | 3.87E-02 |

- Indicates a HQ value greater than 1.0.

## Table 6-24

## Summary of Terrestrial Food Web Hazard Quotients
## Assuming Mean Exposure Point Concentrations
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Mean White-Footed Mouse HQs | | Mean American Robin HQs | | Mean Short-Tail Shrew HQs | | Mean American Woodcock HQs | |
|---|---|---|---|---|---|---|---|---|
| | NOAEL-Hazard Quotients | LOAEL Hazard Quotients | NOAEL Hazard Quotients | LOAEL Hazard Quotients | NOAEL Hazard Quotients | LOAEL Hazard Quotients | NOAEL Hazard Quotients | LOAEL Hazard Quotients |
| **Inorganic Constituents :** | | | | | | | | |
| Antimony | 1.69E+00 | 1.69E-01 | 3.01E+00 | 6.01E-01 | 1.63E+00 | 1.63E-01 | 3.17E+00 | 6.34E-01 |
| Beryllium | 1.18E-02 | 1.18E-03 | ND | ND | 3.21E-02 | 3.21E-02 | ND | ND |
| Copper | 1.13E+00 | 8.82E-01 | 4.59E-01 | 3.49E-01 | 1.06E+00 | 8.29E-01 | 4.66E-01 | 3.55E-01 |
| Lead | 2.36E+00 | 2.36E-01 | 1.05E+01 | 3.58E+00 | 5.70E+00 | 5.70E-01 | 2.13E+01 | 7.25E+00 |
| Zinc | 4.08E-02 | 1.33E-03 | 7.32E-03 | 7.32E-04 | 1.16E-01 | 3.78E-03 | 1.67E-02 | 1.67E-03 |

- Indicates a HQ value greater than 1.0.

## Table 6-25

## Risk-Based Remedial Goals for Terrestrial Food Web Exposures
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Receptor | Surface Soil COPECs | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Antimony | | Beryllium | | Copper | | Lead | | Zinc | |
| | Acceptable Soil Conc Based on NOAEL TRV (mg/kg) | Acceptable Soil Conc Based on LOAEL TRV (mg/kg) | Acceptable Soil Conc Based on NOAEL TRV (mg/kg) | Acceptable Soil Conc Based on LOAEL TRV (mg/kg) | Acceptable Soil Conc Based on NOAEL TRV (mg/kg) | Acceptable Soil Conc Based on LOAEL TRV (mg/kg) | Acceptable Soil Conc Based on NOAEL TRV (mg/kg) | Acceptable Soil Conc Based on LOAEL TRV (mg/kg) | Acceptable Soil Conc Based on NOAEL TRV (mg/kg) | Acceptable Soil Conc Based on LOAEL TRV (mg/kg) |
| White-footed Mouse | 4.98 | 49.8 | 80 | 800 | 234 | 300 | 413 | 4,131 | 1,327 | 40,800 |
| American Robin | 2.8 | 14 | NA | NA | 578 | 757 | 92.5 | 272 | 7,390 | 73,900 |
| Short-tailed Shrew | 5.15 | 51.5 | 29.5 | 295 | 249 | 319 | 171 | 1,705 | 465 | 14,300 |
| American Woodcock | 2.65 | 13.25 | NA | NA | 567 | 747 | 45.7 | 134 | 3,230 | 32,400 |

Notes :
Risk-based remedial goals were calculated based on a HQ = 1.0.
NA - Constituent does not pose unacceptable risk (HQ > 1.0) to feeding guild at any concentration.

## Table 6-26

## Site-Specific Sediment Toxicity Values
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama

| Sediment COPEC | Apparent Effects Threshold (AET) (mg/kg) | No Observable Effect Concentration (NOEC) (mg/kg) | Lowest Observable Effect Concentration (LOEC) (mg/kg) | Uncertainty Range (mg/kg) | Relative Predictability - AET | | Relative Predictability - LOEC | |
|---|---|---|---|---|---|---|---|---|
| | | | | | False Positives | False Negatives | False Positives | False Negatives |
| **10-Day Chironomid Survival and Growth** | | | | | | | | |
| Copper | >22.5 | 22.5 | >22.5 | | | | | |
| Lead | >112 | 112 | >112 | | | | | |
| gamma-Chlordane | >0.0091 | 0.0091 | >0.0091 | | | | | |

## Table 6-27

## Riparian Foodweb Indicator Species Life History Parameters
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Common Name | Scientific Name | Feeding Guild | Foraging Area (acres) | Area Use Factor (unitless) | Body Weight (kg) | Water Ingestion Rate (L/kg/day) | Food Ingestion Rate (kg/kg/day) | Soil / Sediment Ingestion Rate (kg/kg/day) | Dietary Fraction | Dietary Component |
|---|---|---|---|---|---|---|---|---|---|---|
| Little Brown Bat | *Myotis lucifugus* | Invertivorous Mammal | 12 km (c) | 0.4 | 0.0080 (b) | 0.168 (e) | 0.0848 (d) | NA | 1.0 | Aquatic Emergent Invertebrates |
| Marsh Wren | *Cistothorus palustris* | Invertivorous Bird | 0.13 (a) | 1.0 | 0.0106 (a) | 0.27 (a) | 0.1072 (a) | NA | 1.0 | Aquatic Emergent Invertebrates |

Notes:

All of the values presented in this table represent arithmetic mean values if more than one value was presented in the referenced source.

a USEPA, 1993. *Wildlife Exposure Factors Handbook*. EPA/600/R-93/187a

b Burt, W.H. and R.P. Grossenheider. *Mammals, Peterson Field Guide*.

c LaVal, et al., 1977. Foraging Behavior and Nocturnal Activity Patterns of Missouri Bats, with Emphasis on the Endangered Species *Myotis grisescens* and *Myotis sodalis*.

d Anthony and Kunz, 1977. Feeding Strategies of the Little Brown bat, *Myotis lucifugus*, in Southern New Hampshire.

e Sample, et al., 1997. Methods and Tools for Estimation of the Exposure of Terrestrial Wildlife to Contaminants.

## Table 6-28

## Biological Fate and Transport Properties for the Constituents of Potential Ecological Concern in the Riparian Foodweb Baby Bains Gap Road Ranges Fort McClellan, Calhoun County, Alabama

| Constituents of Potential Ecological Concern | CAS Number | Molecular Weight | Henry's Law Constant ($atm/m^3$-$mole^{-1}$) | Octanol-Water Partition Coefficient (log $K_{ow}$) ($M_{oct}/M_{water}$) | Organic Carbon Partition Coefficient (log $K_{oc}$) (L/kg) | Sediment to Plant BAF (unitless) | Sediment to Invertebrate BAF (unitless) |
|---|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | | |
| Copper | 7440-50-8 | 63.55 | 0.00E+00 | NA | NA | 4.00E-01 1 | 3.00E-01 1 |
| Lead | 7439-92-1 | 207.2 | 0.00E+00 | NA | NA | 4.50E-02 1 | 6.30E-01 1 |
| **Pesticides:** | | | | | | | |
| gamma -Chlordane | 5102-74-2 | 409.8 | 2.64E-05 | 5.94 | 4.71 | 4.89E-02 4 | 1.67E+00 4 |

NOTES :
1) USEPA, 1999. *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*.
2) Baes, C.F., R.D. Sharp, A.L. Sjoreen, and R.W. Shor, 1984. "A Review and Analysis of Parameters for Assessing Transport of Environmentally Released Radionuclides Through Agriculture." U.S. Department of Energy, Oak Ridge National Laboratory, Oak Ridge TN. ORNL-5786.
3) Calculated using site-specific sediment and chironomid tissue data.
4) BAF for heptachlor used as a surrogate. USEPA, 1999. *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*.

Table 6-29

**Exposure Point Concentrations for the**
**Constituents of Potential Ecological Concern in the Riparian Foodweb**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituents Of Potential Ecological Concern | Constituent Concentration | | | | | |
|---|---|---|---|---|---|---|
| | Surface Water | | Sediment | | Aquatic Invertebrates | |
| | Max. Conc. (mg/L) | Mean Conc. (mg/L) | Max. Conc. (mg/kg) | Mean Conc. (mg/kg) | Max. Conc. (mg/kg) | Mean Conc. (mg/kg) |
| **Inorganic Constituents :** | | | | | | |
| Copper | ND | ND | 2.20E+02 | 3.01E+01 | 6.60E+01 | 9.03E+00 |
| Lead | 3.97E-03 | 3.97E-03 | 5.33E+02 | 1.03E+02 | 3.36E+02 | 6.47E+01 |
| **Pesticides:** | | | | | | |
| gamma-Chlordane | ND | ND | 8.90E-02 | 1.14E-02 | 1.49E-01 | 1.90E-02 |

Table 6-30

Maximum Constituent Exposures
for Little Brown Bat
Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | MAXIMUM EXPOSURE POINT CONCENTRATIONS | | | MAXIMUM CONSTITUENT DOSES | | | |
|---|---|---|---|---|---|---|---|
| | Sediment (mg/kg) | Surface Water (mg/L) | Aquatic Invertebrates (mg/kg) | Sediment (mg/kg-day) | Surface Water (mg/kg - day) | Aquatic Invertebrates (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | |
| Copper | 2.20E+02 | ND | 6.60E+01 | NA | NA | 2.24E+00 | 2.24E+00 |
| Lead | 5.33E+02 | 3.97E-03 | 3.36E+02 | NA | 2.67E-04 | 1.14E+01 | 1.14E+01 |
| **Pesticides:** | | | | | | | |
| gamma-Chlordane | 8.90E-02 | ND | 1.49E-01 | NA | NA | 5.04E-03 | 5.04E-03 |

NA - Not Applicable. It is assumed that the little brown bats' diet consists entirely of emergent aquatic invertebrates and the potential for exposure to sediment is minimal.

Table 6-31

**Maximum Constituent Exposures**
**for Marsh Wren**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituent Of Potential Ecological Concern | MAXIMUM EXPOSURE POINT CONCENTRATIONS | | | MAXIMUM CONSTITUENT DOSES | | | |
|---|---|---|---|---|---|---|---|
| | Sediment (mg/kg) | Surface Water (mg/L) | Aquatic Invertebrates (mg/kg) | Sediment (mg/kg-day) | Surface Water (mg/kg-day) | Aquatic Invertebrates (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | |
| Copper | 2.20E+02 | ND | 6.60E+01 | NA | NA | 7.08E+00 | 7.08E+00 |
| Lead | 5.33E+02 | 3.97E-03 | 3.36E+02 | NA | 1.07E-03 | 3.60E+01 | 3.60E+01 |
| **Pesticides:** | | | | | | | |
| gamma-Chlordane | 8.90E-02 | ND | 1.49E-01 | NA | NA | 1.59E-02 | 1.59E-02 |

NA - Not Applicable. It is assumed that the marsh wrens' diet consists entirely of emergent aquatic invertebrates and the potential for exposure to sediment is minimal.

Table 6-32

Mean Constituent Exposures
for Little Brown Bat
Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | MEAN EXPOSURE POINT CONCENTRATIONS | | | MEAN CONSTITUENT DOSES | | | |
|---|---|---|---|---|---|---|---|
| | Sediment (mg/kg) | Surface Water (mg/L) | Aquatic Invertebrates (mg/kg) | Sediment (mg/kg-day) | Surface Water (mg/kg - day) | Aquatic Invertebrates (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | |
| Copper | 3.01E+01 | ND | 9.03E+00 | NA | NA | 3.06E-01 | 3.06E-01 |
| Lead | 1.03E+02 | 3.97E-03 | 6.47E+01 | NA | 2.67E-04 | 2.19E+00 | 2.19E+00 |
| **Pesticides:** | | | | | | | |
| gamma-Chlordane | 1.14E-02 | ND | 1.90E-02 | NA | NA | 6.46E-04 | 6.46E-04 |

NA - Not Applicable. It is assumed that the little brown bats' diet consists entirely of emergent aquatic invertebrates and the potential for exposure to sediment is minimal.

Table 6-33

Mean Constituent Exposures
for Marsh Wren
Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | MEAN EXPOSURE POINT CONCENTRATIONS | | | MEAN CONSTITUENT DOSES | | | |
|---|---|---|---|---|---|---|---|
| | Sediment (mg/kg) | Surface Water (mg/L) | Aquatic Invertebrates (mg/kg) | Sediment (mg/kg-day) | Surface Water (mg/kg-day) | Aquatic Invertebrates (mg/kg-day) | TOTAL (mg/kg - day) |
| **Inorganic Constituents :** | | | | | | | |
| Copper | 3.01E+01 | ND | 9.03E+00 | NA | NA | 9.68E-01 | 9.68E-01 |
| Lead | 1.03E+02 | 3.97E-03 | 6.47E+01 | NA | 1.07E-03 | 6.94E+00 | 6.94E+00 |
| **Pesticides:** | | | | | | | |
| gamma-Chlordane | 1.14E-02 | ND | 1.90E-02 | NA | NA | 2.04E-03 | 2.04E-03 |

NA - Not Applicable. It is assumed that the marsh wrens' diet consists entirely of emergent aquatic invertebrates and the potential for exposure to sediment is minimal.

Table 6-34

**Avian Toxicity Reference Values for Riparian Food Web**
**Baby Bains Gap Road Ranges**
**Fort McClellan, Calhoun County, Alabama**

| Constituent Of Potential Ecological Concern | Toxicity Test Receptor | Toxicity Test Endpoint | NOAEL-Based Toxicity Reference Values | | | | LOAEL-Based Toxicity Reference Values | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dose (mg/kg/day) | Uncertainty Factor | TRV (mg/kg/day) | Ref. | Dose (mg/kg/day) | Uncertainty Factor | TRV (mg/kg/day) | Ref. |
| **Inorganic Constituents :** | | | | | | | | | | |
| Copper | 1-Day old chicks | Growth & Mortality | 46.97 | 1 | 46.97 | 2 | 61.72 | 1 | 61.72 | 2 |
| Lead | American Kestrel & Japanese Quail | Reproduction | 3.85 | 1 | 3.85 | 7 | 11.3 | 1 | 11.30 | 1 |
| **Pesticides:** | | | | | | | | | | |
| gamma-Chlordane | Red-Winged Blackbird | Mortality | 2.14 | 1 | 2.14 | 8 | 10.7 | 1 | 10.70 | 8 |

NOTES :


1) Edens, F., W.E. Benton, S.J. Bursian, and G.W. Morgan, 1976. "Effect of Dietary Lead on Reproductive Performance in Japanese Quail, Coturnix coturnix japonica." *Toxicol. Appl. Pharmacol*., 38: 307-314.
2) Mehring, A.L., J.H. Brumbaugh, A.J. Sutherland, and H.W. Titus, 1960. "The Tolerance of Growing Chickens for Dietary Copper." Poultry Science, Vol. 39, pp. 713-719.
3) Johnson, D., A.L. Mehring, and H.W. Titus, 1960. "Tolerance of Chickens for Barium." *Proc. Soc. Exp. Biol. Med.*, 104: 436-438.
4) Laskey, J.W. and F.W. Edens, 1985. "Effects of Chronic High-Level Manganese Exposure on Male Behavior in Japanese Quail (*Coturnix coturnix japonica*)." *Poultry Sci*., 64: 579-584.
5) Schafer, E.W., 1972. "The Acute Oral Toxicity of 369 Pesticidal, Pharmaceutical, and Other Chemicals to Wild Birds." *Toxicological and Applied Pharmacology*, Vol. 21, pp. 315-330.
6) U.S. Fish and Wildlife Service, 1969. Bureau of Sport Fisheries and Wildlife. Publication 74, pp. 56-57.
7) Pattee, O.H., 1984. "Eggshell Thickness and Reproduction in American Kestrels Exposed to Chronic Dietary Lead." *Arch. Environ. Contam. Toxico*l., 13: 213-218.
8) Stickel, L.F., W.H. Stickel, R.A. Dyrland, and D.L. Hughs, 1983. "Oxychlordane, HCS-3260, and Nonachlor in Birds: Lethal residues and Loss Rates." *J. Toxicol. Environ. Health* 12: 611-622.

## Table 6-35

### Mammalian Toxicity Reference Values for Riparian Food Web
### Baby Bains Gap Road Ranges
### Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Toxicity Test Receptor | Toxicity Test Endpoint | NOAEL-Based Toxicity Reference Values | | | | LOAEL-Based Toxicity Reference Values | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dose (mg/kg/day) | Uncertainty Factor | TRV (mg/kg/day) | Ref. | Dose (mg/kg/day) | Uncertainty Factor | TRV (mg/kg/day) | Ref. |
| **Inorganic Constituents :** | | | | | | | | | | |
| Copper | Mink | Reproduction | 12 | 1 | 12 | 1 | 15.4 | 1 | 15.4 | 1 |
| Lead | Rat | Reproduction | 8 | 1 | 8 | 2 | 80 | 1 | 80 | 2 |
| **Pesticides:** | | | | | | | | | | |
| gamma-Chlordane | Mouse | Reproduction | 4.6 | 1 | 4.6 | 7 | 9.2 | 1 | 9.2 | 7 |

NOTES :


1) Aulerich, R.J., R.K. Ringer, M.R. Bleavins, and A. Napolitano, 1982. "Effects of Supplemental Dietary Copper on Growth, Reproductive Performance, and Kit Survival of Standard Dark Mink and the . of Copper to Mink." Journal of Animal Science, Vol. 55, pp. 337-343.

2) Azar, A. H.J. Trochimowicz, and M.E. Maxwell, 1973. "Review of Lead Studies in Animals Carried Out at Haskell Laboratory: Two-Year Feeding Study and Response to Hemorrhage Study." *In: Env Health Aspects of Lead: Proceedings, International Symposium*. D. Barth, et al., eds. Commission of Europen Communities, pp. 199-210.

3) Perry, H.M., E.F. Perry, M.N. Erlanger, and S.J. Kopp, 1983. "Cardiovascular Effects of Chronic Barium Ingestion." *In: Proc. 17th Annual Conf. Trace Substances in Environ. Heallth*, Vol. 17, University of Missouri Press, Columbia, MO.

4) Laskey, J.W., G.L. Rehnberg, J.F. Hein, and S.D. Carter, 1982. "Effects of Chronic Manganese ($Mn_3O_4$) Exposure on Selected Reproductive Parameters in Rats." *J. Toxicol. Environ. Health*, 9: 677

5) Formigli, L., R. Scelsi, P. Poggi, C. Gregotti, A. DiNucci, E. Sabbioni, L. Gottardi, and L. Manzo, 1986. "Thallium-Induced Testicular Toxicity in the Rat." *Environ. Res*., 40: 531-539.

6) Byron, W.R., G.W. Bierbower, J.B. Brouwer, and W.H. Hansen, 1967. "Pathological Changes in Rats and Dogs from Two-Year Feeding of Sodium Arsenite or Sodium Arsenate." *Toxicology and Applied Pharmacology*, Vol. 10, pp. 132-147.

7) Keplinger, M.L., W.B. Deichman, and F. Sala, 1968. "Effects of Pesticides on Reproduction in Mice." *Ind. Med. Surg*. 37: 525.

Table 6-36

Comparison of Maximum Constituent Exposures
With Toxicity Reference Values for Little Brown Bat
Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Maximum Constituent Exposure (mg/kg-day) | Mammalian NOAEL (mg/kg-day) | Mammalian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Copper | 2.24E+00 | 1.20E+01 | 1.54E+01 | 1.87E-01 | 1.45E-01 | No |
| Lead | 1.14E+01 | 8.00E+00 | 8.00E+01 | 1.42E+00 | 1.42E-01 | YES |
| **Pesticides:** | | | | | | |
| gamma-Chlordane | 5.04E-03 | 4.60E+00 | 9.20E+00 | 1.10E-03 | 5.48E-04 | No |

Table 6-37

Comparison of Maximum Constituent Exposures
With Toxicity Reference Values for Marsh Wren
Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Maximum Constituent Exposure (mg/kg-day) | Avian NOAEL (mg/kg-day) | Avian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Copper | 7.08E+00 | 4.70E+01 | 6.17E+01 | 1.51E-01 | 1.15E-01 | **No** |
| Lead | 3.60E+01 | 3.85E+00 | 1.13E+01 | 9.35E+00 | 3.19E+00 | **YES** |
| **Pesticides:** | | | | | | |
| gamma-Chlordane | 1.59E-02 | 2.14E+00 | 1.07E+01 | 7.45E-03 | 1.49E-03 | No |

Table 6-38

Comparison of Mean Constituent Exposures
With Toxicity Reference Values for Little Brown Bat
Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Mean Constituent Exposure (mg/kg-day) | Mammalian NOAEL (mg/kg-day) | Mammalian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Copper | 3.06E-01 | 1.20E+01 | 1.54E+01 | 2.55E-02 | 1.99E-02 | No |
| Lead | 2.19E+00 | 8.00E+00 | 8.00E+01 | 2.74E-01 | 2.74E-02 | No |
| **Pesticides:** | | | | | | |
| gamma-Chlordane | 6.46E-04 | 4.60E+00 | 9.20E+00 | 1.40E-04 | 7.02E-05 | No |

Table 6-39

Comparison of Mean Constituent Exposures
With Toxicity Reference Values for Marsh Wren
Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Mean Constituent Exposure (mg/kg-day) | Avian NOAEL (mg/kg-day) | Avian LOAEL (mg/kg-day) | NOAEL Hazard Quotient | LOAEL Hazard Quotient | Constituent Of Ecological Concern ? |
|---|---|---|---|---|---|---|
| **Inorganic Constituents :** | | | | | | |
| Copper | 9.68E-01 | 4.70E+01 | 6.17E+01 | 2.06E-02 | 1.57E-02 | No |
| Lead | 6.94E+00 | 3.85E+00 | 1.13E+01 | 1.80E+00 | 6.14E-01 | YES |
| **Pesticides:** | | | | | | |
| gamma-Chlordane | 2.04E-03 | 2.14E+00 | 1.07E+01 | 9.54E-04 | 1.91E-04 | No |

Table 6-40

Summary of Riparian Food Web Hazard Quotients
Assuming Maximum Exposure Point Concentrations
Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Maximum Little Brown Bat Hazard Quotients | | Maximum Marsh Wren Hazard Quotients | |
|---|---|---|---|---|
| | NOAEL Hazard Quotients | LOAEL Hazard Quotients | NOAEL Hazard Quotients | LOAEL Hazard Quotients |
| **Inorganic Constituents :** | | | | |
| Copper | 1.87E-01 | 1.45E-01 | 1.51E-01 | 1.15E-01 |
| Lead | 1.42E+00 | 1.42E-01 | 9.35E+00 | 3.19E+00 |
| **Pesticides:** | | | | |
| gamma-Chlordane | 1.10E-03 | 5.48E-04 | 7.45E-03 | 1.49E-03 |

- Indicates a HQ value greater than 1.0.

Table 6-41

Summary of Riparian Food Web Hazard Quotients
Assuming Mean Exposure Point Concentrations
Baby Bains Gap Road Ranges
Fort McClellan, Calhoun County, Alabama

| Constituent Of Potential Ecological Concern | Mean Little Brown Bat Hazard Quotients | | Mean Marsh Wren Hazard Quotients | |
|---|---|---|---|---|
| | NOAEL Hazard Quotients | LOAEL Hazard Quotients | NOAEL Hazard Quotients | LOAEL Hazard Quotients |
| **Inorganic Constituents :** | | | | |
| Copper | 2.55E-02 | 1.99E-02 | 2.06E-02 | 1.57E-02 |
| Lead | 2.74E-01 | 2.74E-02 | 1.80E+00 | 6.14E-01 |
| **Pesticides:** | | | | |
| gamma-Chlordane | 1.40E-04 | 7.02E-05 | 9.54E-04 | 1.91E-04 |

- Indicates a HQ value greater than 1.0.

## Table 6-42

## Risk-Based Remedial Goals for Riparian Food Web Exposures
## Baby Bains Gap Road Ranges
## Fort McClellan, Calhoun County, Alabama

| Receptor | Sediment COPECs | | | | | |
|---|---|---|---|---|---|---|
| | Copper | | Lead | | gamma-Chlordane | |
| | Acceptable Sediment Conc Based on NOAEL TRV (mg/kg) | Acceptable Sediment Conc Based on LOAEL TRV (mg/kg) | Acceptable Sediment Conc Based on NOAEL TRV (mg/kg) | Acceptable Sediment Conc Based on LOAEL TRV (mg/kg) | Acceptable Sediment Conc Based on NOAEL TRV (mg/kg) | Acceptable Sediment Conc Based on LOAEL TRV (mg/kg) |
| Little Brown Bat | 1,180 | 1,520 | 375 | 3,750 | 81.5 | 163 |
| Marsh Wren | 1,465 | 1,925 | 57 | 168 | 12 | 60 |

Notes :

Risk-based remedial goals were calculated based on a HQ = 1.0.

## Table 8-1

## Summary of Potential Ecological Risk-Based Remedial Goals
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Measurement Endpoints | Soil COPECs | | | | |
|---|---|---|---|---|---|
| | Antimony (mg/kg) | Beryllium (mg/kg) | Copper (mg/kg) | Lead (mg/kg) | Zinc (mg/kg) |
| **Terrestrial Invertebrate Survival and Growth :** | | | | | |
| Earthworm Survival NOEC | 1,310 | 1.67 | 563 | 146,000 | 154 |
| Earthworm Survival LOEC | >1,310 | >1.67 | >563 | >146,000 | >154 |
| Earthworm Survival AET | >1,310 | >1.67 | >563 | >146,000 | >154 |
| Earthworm Growth NOEC | 1,310 | 1.67 | 563 | 146,000 | 154 |
| Earthworm Growth LOEC | >1,310 | >1.67 | >563 | >146,000 | >154 |
| Earthworm Growth AET | >1,310 | >1.67 | >563 | >146,000 | >154 |
| **Terrestrial Plant Germination and Growth :** | | | | | |
| Perennial Rye Grass Germination NOEC | 1,310 | 1.67 | 563 | 146,000 | 154 |
| Perennial Rye Grass Germination LOEC | >1,310 | >1.67 | >563 | >146,000 | >154 |
| Perennial Rye Grass Germination AET | >1,310 | >1.67 | >563 | >146,000 | >154 |
| Perennial Rye Grass Shoot Length NOEC | 4.92 | 0.624 | 152 | 526 | 37.3 |
| Perennial Rye Grass Shoot Length LOEC | 5.29 | 0.685 | 184 | 919 | 53.5 |
| Perennial Rye Grass Shoot Length AET | 1,310 | 1.67 | 563 | 146,000 | 154 |
| Perennial Rye Grass Root Length NOEC | <0.724 | 0.156 | <16.5 | 102 | 22.3 |
| Perennial Rye Grass Root Length LOEC | 0.724 | 0.444 | 16.5 | 125 | 25.4 |
| Perennial Rye Grass Root Length AET | 1,310 | 1.02 | 152 | 146,000 | 53.5 |
| Perennial Rye Grass Total Weight NOEC | <0.724 | 0.583 | <16.5 | 102 | 22.3 |
| Perennial Rye Grass Total Weight LOEC | 0.724 | 0.597 | 16.5 | 125 | 25.4 |
| Perennial Rye Grass Total Weight AET | 1,310 | 1.02 | 184 | 146,000 | >154 |
| **Terrestrial Food Web Exposures :** | | | | | |
| White-Footed Mouse NOAEL | 4.98 | NA | 234 | 413 | 1,327 |
| White-Footed Mouse LOAEL | 49.8 | NA | 300 | 4,131 | 40,800 |
| American Robin NOAEL | 2.8 | NA | 578 | 92.5 | 7,390 |
| American Robin LOAEL | 14 | NA | 757 | 272 | 73,900 |
| Short-Tailed Shrew NOAEL | 5.15 | NA | 249 | 171 | 465 |
| Short-Tailed Shrew LOAEL | 51.5 | NA | 319 | 1,705 | 14,300 |
| American Woodcock NOAEL | 2.65 | NA | 567 | 45.7 | 3,230 |
| American Woodcock LOAEL | 13.25 | NA | 747 | 134 | 32,400 |
| **Soil RBRG Range :** | <0.724 - >1,310 | 0.156 - >1.67 | <16.5 - 757 | 45.7 - >146,000 | 22.3 - 73,900 |

NA - Detected concentrations of this COPEC did not result in an HQ > 1.0 for any of the feeding guilds assessed in the terrestrial food web model; therefore, a RBRG is not necessary for this particular endpoint.

## Table 8-1

## Summary of Potential Ecological Risk-Based Remedial Goals
## Baby Bains Gap Road Ranges BERA
## Fort McClellan, Calhoun County, Alabama



| Measurement Endpoints | Sediment COPECs | | |
|---|---|---|---|
| | Copper (mg/kg) | Lead (mg/kg) | gamma-Chlordane (mg/kg) |
| **Benthic Invertebrate Survival and Growth :** | | | |
| Chironomid Survival NOEC | 22.5 | 112 | 0.0091 |
| Chironomid Survival LOEC | >22.5 | >112 | >0.0091 |
| Chironomid Survival AET | >22.5 | >112 | >0.0091 |
| Chironomid Growth NOEC | 22.5 | 112 | 0.0091 |
| Chironomid Growth LOEC | >22.5 | >112 | >0.0091 |
| Chironomid growth AET | >22.5 | >112 | >0.0091 |
| **Riparian Food Web Exposures :** | | | |
| Little Brown Bat NOAEL | NA | 1,200 | NA |
| Little Brown Bat LOAEL | NA | 12,000 | NA |
| Marsh Wren NOAEL | NA | 91 | NA |
| Marsh Wren LOAEL | NA | 268 | NA |
| **Sediment RBRG Range :** | 22.5 - >22.5 | 91 - 12,000 | 0.0091 - >0.0091 |

NA - Detected concentrations of this COPEC did not result in an HQ > 1.0 for any of the feeding guilds assessed in the riparian food web model; therefore, a RBRG is not necessary for this particular endpoint.