

Appendix E

Statistical Documentation

Goodness-of-Fit Test and Summary Statistics for Arsenic Background Samples

Colluvium**General Statistics**

| | | | |
|------------------------------|-------|---------------------------------|--------|
| Total Number of Observations | 12 | Number of Distinct Observations | 11 |
| Minimum | 5.6 | First Quartile | 7.275 |
| Second Largest | 9.7 | Median | 8.25 |
| Maximum | 10 | Third Quartile | 9.2 |
| Mean | 8.042 | SD | 1.538 |
| Coefficient of Variation | 0.191 | Skewness | -0.581 |
| Mean of logged Data | 2.066 | SD of logged Data | 0.206 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.9 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.182 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 12.25 |
|---------------------------|--------------|

Dakota**General Statistics**

| | | | |
|------------------------------|------|---------------------------------|-------|
| Total Number of Observations | 12 | Number of Distinct Observations | 11 |
| Minimum | 3.2 | First Quartile | 3.775 |
| Second Largest | 5 | Median | 3.95 |
| Maximum | 6 | Third Quartile | 4.675 |
| Mean | 4.2 | SD | 0.8 |
| Coefficient of Variation | 0.19 | Skewness | 1.009 |
| Mean of logged Data | 1.42 | SD of logged Data | 0.182 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.921 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.182 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 6.389 |
|---------------------------|--------------|

Mancos**General Statistics**

| | | | |
|------------------------------|-------|---------------------------------|-------|
| Total Number of Observations | 11 | Number of Distinct Observations | 11 |
| Minimum | 3.6 | First Quartile | 3.85 |
| Second Largest | 4.9 | Median | 4.3 |
| Maximum | 5.5 | Third Quartile | 4.7 |
| Mean | 4.327 | SD | 0.593 |
| Coefficient of Variation | 0.137 | Skewness | 0.609 |
| Mean of logged Data | 1.457 | SD of logged Data | 0.134 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.815 | d2max (for USL) | 2.234 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.943 |
| 5% Shapiro Wilk Critical Value | 0.85 |
| Lilliefors Test Statistic | 0.164 |
| 5% Lilliefors Critical Value | 0.267 |

Shapiro Wilk GOF Test

Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 5.998 |
|---------------------------|--------------|

Goodness-of-Fit Test and Summary Statistics for Mercury Background Samples

Colluvium**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|---------|
| Total Number of Observations | 12 | Number of Distinct Observations | 7 |
| Minimum | 0.014 | First Quartile | 0.015 |
| Second Largest | 0.019 | Median | 0.0175 |
| Maximum | 0.02 | Third Quartile | 0.0183 |
| Mean | 0.017 | SD | 0.00195 |
| Coefficient of Variation | 0.115 | Skewness | -0.0877 |
| Mean of logged Data | -4.081 | SD of logged Data | 0.116 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.928 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.196 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

| | |
|---------------------------|---------------|
| 95% UTL with 95% Coverage | 0.0223 |
|---------------------------|---------------|

Dakota**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|---------|
| Total Number of Observations | 12 | Number of Distinct Observations | 7 |
| Minimum | 0.013 | First Quartile | 0.0165 |
| Second Largest | 0.021 | Median | 0.018 |
| Maximum | 0.031 | Third Quartile | 0.02 |
| Mean | 0.0184 | SD | 0.00472 |
| Coefficient of Variation | 0.256 | Skewness | 1.717 |
| Mean of logged Data | -4.021 | SD of logged Data | 0.232 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.83 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.209 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Background Statistics Assuming Normal Distribution

| | |
|---------------------------|---------------|
| 95% UTL with 95% Coverage | 0.0313 |
|---------------------------|---------------|

Mancos**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|---------|
| Total Number of Observations | 12 | Number of Distinct Observations | 5 |
| Minimum | 0.018 | First Quartile | 0.02 |
| Second Largest | 0.025 | Median | 0.02 |
| Maximum | 0.03 | Third Quartile | 0.022 |
| Mean | 0.0213 | SD | 0.00333 |
| Coefficient of Variation | 0.157 | Skewness | 1.894 |
| Mean of logged Data | -3.861 | SD of logged Data | 0.143 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Data Not Lognormal at 5% Significance Level

Data Not Normal at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Nonparametric Upper Limits for Background Comparison Values

| | | | |
|-----------------------|----|---------------------------|---------------|
| Order of Statistic, r | 12 | 95% UTL with 95% Coverage | 0.0311 |
|-----------------------|----|---------------------------|---------------|

Goodness-of-Fit Test and Summary Statistics for Molybdenum Background Samples

Colluvium**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|--------|
| Total Number of Observations | 12 | Number of Distinct Observations | 10 |
| Minimum | 0.37 | First Quartile | 0.5 |
| Second Largest | 0.62 | Median | 0.535 |
| Maximum | 0.71 | Third Quartile | 0.56 |
| Mean | 0.532 | SD | 0.0879 |
| Coefficient of Variation | 0.165 | Skewness | 0.167 |
| Mean of logged Data | -0.645 | SD of logged Data | 0.169 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | | |
|--------------------------------|-------|---|
| Shapiro Wilk Test Statistic | 0.975 | Shapiro Wilk GOF Test |
| 5% Shapiro Wilk Critical Value | 0.859 | Data appear Normal at 5% Significance Level |
| Lilliefors Test Statistic | 0.167 | Lilliefors GOF Test |
| 5% Lilliefors Critical Value | 0.256 | Data appear Normal at 5% Significance Level |

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 0.772 |
|---------------------------|--------------|

Dakota**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|--------|
| Total Number of Observations | 12 | Number of Distinct Observations | 8 |
| Minimum | 0.28 | First Quartile | 0.35 |
| Second Largest | 0.42 | Median | 0.37 |
| Maximum | 0.45 | Third Quartile | 0.393 |
| Mean | 0.372 | SD | 0.0428 |
| Coefficient of Variation | 0.115 | Skewness | -0.263 |
| Mean of logged Data | -0.996 | SD of logged Data | 0.119 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | | |
|--------------------------------|-------|---|
| Shapiro Wilk Test Statistic | 0.942 | Shapiro Wilk GOF Test |
| 5% Shapiro Wilk Critical Value | 0.859 | Data appear Normal at 5% Significance Level |
| Lilliefors Test Statistic | 0.223 | Lilliefors GOF Test |
| 5% Lilliefors Critical Value | 0.256 | Data appear Normal at 5% Significance Level |

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 0.489 |
|---------------------------|--------------|

Mancos**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|--------|
| Total Number of Observations | 12 | Number of Distinct Observations | 11 |
| Minimum | 0.39 | First Quartile | 0.51 |
| Second Largest | 0.71 | Median | 0.6 |
| Maximum | 0.74 | Third Quartile | 0.643 |
| Mean | 0.583 | SD | 0.104 |
| Coefficient of Variation | 0.179 | Skewness | -0.263 |
| Mean of logged Data | -0.556 | SD of logged Data | 0.188 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | | |
|--------------------------------|-------|---|
| Shapiro Wilk Test Statistic | 0.977 | Shapiro Wilk GOF Test |
| 5% Shapiro Wilk Critical Value | 0.859 | Data appear Normal at 5% Significance Level |
| Lilliefors Test Statistic | 0.112 | Lilliefors GOF Test |
| 5% Lilliefors Critical Value | 0.256 | Data appear Normal at 5% Significance Level |

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 0.868 |
|---------------------------|--------------|

Goodness-of-Fit Test and Summary Statistics for Selenium Background Samples

Colluvium**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|-------|
| Total Number of Observations | 12 | Number of Distinct Observations | 8 |
| Minimum | 0.85 | First Quartile | 0.985 |
| Second Largest | 1.3 | Median | 1.05 |
| Maximum | 1.4 | Third Quartile | 1.125 |
| Mean | 1.077 | SD | 0.16 |
| Coefficient of Variation | 0.148 | Skewness | 0.754 |
| Mean of logged Data | 0.0642 | SD of logged Data | 0.144 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.939 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.192 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 1.514 |
|---------------------------|--------------|

Dakota**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|-------|
| Total Number of Observations | 12 | Number of Distinct Observations | 11 |
| Minimum | 0.52 | First Quartile | 0.66 |
| Second Largest | 0.85 | Median | 0.71 |
| Maximum | 0.99 | Third Quartile | 0.758 |
| Mean | 0.72 | SD | 0.121 |
| Coefficient of Variation | 0.169 | Skewness | 0.7 |
| Mean of logged Data | -0.341 | SD of logged Data | 0.166 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.964 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.152 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 1.052 |
|---------------------------|--------------|

Mancos**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|-------|
| Total Number of Observations | 12 | Number of Distinct Observations | 11 |
| Minimum | 0.65 | First Quartile | 0.788 |
| Second Largest | 1.1 | Median | 0.87 |
| Maximum | 1.2 | Third Quartile | 1.018 |
| Mean | 0.894 | SD | 0.175 |
| Coefficient of Variation | 0.196 | Skewness | 0.327 |
| Mean of logged Data | -0.129 | SD of logged Data | 0.196 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.951 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.13 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 1.373 |
|---------------------------|--------------|

Goodness-of-Fit Test and Summary Statistics for Uranium Background Samples

Colluvium**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|--------|
| Total Number of Observations | 12 | Number of Distinct Observations | 11 |
| Minimum | 0.48 | First Quartile | 0.605 |
| Second Largest | 0.74 | Median | 0.63 |
| Maximum | 0.82 | Third Quartile | 0.673 |
| Mean | 0.639 | SD | 0.0858 |
| Coefficient of Variation | 0.134 | Skewness | 0.407 |
| Mean of logged Data | -0.456 | SD of logged Data | 0.134 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.959 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.163 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 0.874 |
|---------------------------|--------------|

Dakota**General Statistics**

| | | | |
|------------------------------|-------|---------------------------------|--------|
| Total Number of Observations | 12 | Number of Distinct Observations | 9 |
| Minimum | 0.38 | First Quartile | 0.44 |
| Second Largest | 0.56 | Median | 0.48 |
| Maximum | 0.58 | Third Quartile | 0.54 |
| Mean | 0.486 | SD | 0.0622 |
| Coefficient of Variation | 0.128 | Skewness | -0.112 |
| Mean of logged Data | -0.73 | SD of logged Data | 0.13 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.97 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.142 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 0.656 |
|---------------------------|--------------|

Mancos**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|-------|
| Total Number of Observations | 12 | Number of Distinct Observations | 10 |
| Minimum | 0.4 | First Quartile | 0.508 |
| Second Largest | 0.76 | Median | 0.52 |
| Maximum | 0.86 | Third Quartile | 0.628 |
| Mean | 0.578 | SD | 0.129 |
| Coefficient of Variation | 0.224 | Skewness | 1.043 |
| Mean of logged Data | -0.569 | SD of logged Data | 0.212 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.9 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.257 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data Not Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 0.932 |
|---------------------------|--------------|

Goodness-of-Fit Test and Summary Statistics for Vanadium Background Samples

Colluvium**General Statistics**

| | | | |
|------------------------------|-------|---------------------------------|-------|
| Total Number of Observations | 12 | Number of Distinct Observations | 5 |
| Minimum | 12 | First Quartile | 12 |
| Second Largest | 15 | Median | 13.5 |
| Maximum | 16 | Third Quartile | 14 |
| Mean | 13.33 | SD | 1.371 |
| Coefficient of Variation | 0.103 | Skewness | 0.546 |
| Mean of logged Data | 2.586 | SD of logged Data | 0.101 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.849 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.251 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data Not Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 17.08 |
|---------------------------|--------------|

Dakota**General Statistics**

| | | | |
|------------------------------|-------|---------------------------------|-------|
| Total Number of Observations | 12 | Number of Distinct Observations | 6 |
| Minimum | 12 | First Quartile | 13.75 |
| Second Largest | 16 | Median | 15 |
| Maximum | 19 | Third Quartile | 16 |
| Mean | 14.92 | SD | 1.832 |
| Coefficient of Variation | 0.123 | Skewness | 0.572 |
| Mean of logged Data | 2.696 | SD of logged Data | 0.121 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.927 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.194 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 19.93 |
|---------------------------|--------------|

Mancos**General Statistics**

| | | | |
|------------------------------|--------|---------------------------------|-------|
| Total Number of Observations | 12 | Number of Distinct Observations | 5 |
| Minimum | 16 | First Quartile | 17 |
| Second Largest | 21 | Median | 18 |
| Maximum | 21 | Third Quartile | 20 |
| Mean | 18.58 | SD | 1.73 |
| Coefficient of Variation | 0.0931 | Skewness | 0.148 |
| Mean of logged Data | 2.918 | SD of logged Data | 0.093 |

Critical Values for Background Comparison Values

| | | | |
|------------------------------|-------|-----------------|-------|
| Tolerance Factor K (For UTL) | 2.736 | d2max (for USL) | 2.285 |
|------------------------------|-------|-----------------|-------|

Normal GOF Test

| | |
|--------------------------------|-------|
| Shapiro Wilk Test Statistic | 0.896 |
| 5% Shapiro Wilk Critical Value | 0.859 |
| Lilliefors Test Statistic | 0.215 |
| 5% Lilliefors Critical Value | 0.256 |

Shapiro Wilk GOF Test

Data appear Normal at 5% Significance Level

Lilliefors GOF Test

Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level**Background Statistics Assuming Normal Distribution**

| | |
|---------------------------|--------------|
| 95% UTL with 95% Coverage | 23.32 |
|---------------------------|--------------|

Goodness-of-Fit Test and Summary Statistics for Radium-226 Background Samples

Colluvium**General Statistics**

| | | | |
|--|-------|---|--------|
| Total Number of Observations | 25 | Number of Distinct Observations | 23 |
| Minimum | 0.83 | First Quartile | 1.12 |
| Second Largest | 1.48 | Median | 1.25 |
| Maximum | 1.56 | Third Quartile | 1.32 |
| Mean | 1.221 | SD | 0.186 |
| Coefficient of Variation | 0.152 | Skewness | -0.381 |
| Mean of logged Data | 0.188 | SD of logged Data | 0.16 |
| Critical Values for Background Comparison Values | | | |
| Tolerance Factor K (For UTL) | 2.292 | d2max (for USL) | 2.663 |
| Normal GOF Test | | | |
| Shapiro Wilk Test Statistic | 0.972 | Shapiro Wilk GOF Test | |
| 5% Shapiro Wilk Critical Value | 0.918 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.101 | Lilliefors GOF Test | |
| 5% Lilliefors Critical Value | 0.177 | Data appear Normal at 5% Significance Level | |
| Data appear Normal at 5% Significance Level | | | |
| Background Statistics Assuming Normal Distribution | | | |
| 95% UTL with 95% Coverage | 1.647 | | |

Dakota**General Statistics**

| | | | |
|--|---------|---|--------|
| Total Number of Observations | 25 | Number of Distinct Observations | 22 |
| Minimum | 0.63 | First Quartile | 0.83 |
| Second Largest | 1.29 | Median | 0.95 |
| Maximum | 1.29 | Third Quartile | 1.17 |
| Mean | 0.987 | SD | 0.199 |
| Coefficient of Variation | 0.201 | Skewness | 0.0535 |
| Mean of logged Data | -0.0333 | SD of logged Data | 0.206 |
| Critical Values for Background Comparison Values | | | |
| Tolerance Factor K (For UTL) | 2.292 | d2max (for USL) | 2.663 |
| Normal GOF Test | | | |
| Shapiro Wilk Test Statistic | 0.942 | Shapiro Wilk GOF Test | |
| 5% Shapiro Wilk Critical Value | 0.918 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.145 | Lilliefors GOF Test | |
| 5% Lilliefors Critical Value | 0.177 | Data appear Normal at 5% Significance Level | |
| Data appear Normal at 5% Significance Level | | | |
| Background Statistics Assuming Normal Distribution | | | |
| 95% UTL with 95% Coverage | 1.442 | | |

Mancos**General Statistics**

| | | | |
|--|--------|---|---------|
| Total Number of Observations | 25 | Number of Distinct Observations | 21 |
| Minimum | 0.85 | First Quartile | 1.15 |
| Second Largest | 1.7 | Median | 1.3 |
| Maximum | 1.71 | Third Quartile | 1.45 |
| Mean | 1.301 | SD | 0.237 |
| Coefficient of Variation | 0.182 | Skewness | -0.0142 |
| Mean of logged Data | 0.247 | SD of logged Data | 0.189 |
| Critical Values for Background Comparison Values | | | |
| Tolerance Factor K (For UTL) | 2.292 | d2max (for USL) | 2.663 |
| Normal GOF Test | | | |
| Shapiro Wilk Test Statistic | 0.973 | Shapiro Wilk GOF Test | |
| 5% Shapiro Wilk Critical Value | 0.918 | Data appear Normal at 5% Significance Level | |
| Lilliefors Test Statistic | 0.0917 | Lilliefors GOF Test | |
| 5% Lilliefors Critical Value | 0.177 | Data appear Normal at 5% Significance Level | |
| Data appear Normal at 5% Significance Level | | | |
| Background Statistics Assuming Normal Distribution | | | |
| 95% UTL with 95% Coverage | 1.845 | | |

Outlier Evaluation for Arsenic

FULL ARSENIC DATA SET (mg/kg)

| AsCount | Colluvium | Dakota | Mancos |
|---------|-----------|--------|--------|
| 1 | 5.60 | 3.20 | 3.60 |
| 2 | 5.70 | 3.30 | 3.70 |
| 3 | 6.00 | 3.70 | 3.80 |
| 4 | 7.70 | 3.80 | 3.90 |
| 5 | 8.10 | 3.80 | 4.00 |
| 6 | 8.10 | 3.90 | 4.30 |
| 7 | 8.40 | 4.00 | 4.50 |
| 8 | 8.60 | 4.20 | 4.60 |
| 9 | 9.10 | 4.60 | 4.80 |
| 10 | 9.50 | 4.90 | 4.90 |
| 11 | 9.70 | 5.00 | 5.50 |
| 12 | 10.00 | 6.00 | 6.90 |

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|--------|-----------|----------|----------|-------|-------|
| Colluvium | 12 | 0 | 5.6 | 10 | 8.042 | 1.538 |
| Dakota | 12 | 0 | 3.2 | 6.0 | 4.2 | 0.80 |
| Mancos | 12 | 0 | 3.6 | 6.9 | 4.542 | 0.934 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 0.444 | 1.557 | -0.581 | -0.9 | 0.191 | |
| Dakota | 0.231 | 0.667 | 1.009 | 0.95 | 0.19 | |
| Mancos | 0.27 | 0.741 | 1.579 | 2.944 | 0.206 | |

Notes

Red = Dixon's Test Outliers at 5% significance

No outliers for Dixon's Test at 1% significance

ADJUSTED ARSENIC DATA SET (mg/kg)

| AsCount | Colluvium | Dakota | Mancos |
|---------|-----------|--------|--------|
| 1 | 5.60 | 3.20 | 3.60 |
| 2 | 5.70 | 3.30 | 3.70 |
| 3 | 6.00 | 3.70 | 3.80 |
| 4 | 7.70 | 3.80 | 3.90 |
| 5 | 8.10 | 3.80 | 4.00 |
| 6 | 8.10 | 3.90 | 4.30 |
| 7 | 8.40 | 4.00 | 4.50 |
| 8 | 8.60 | 4.20 | 4.60 |
| 9 | 9.10 | 4.60 | 4.80 |
| 10 | 9.50 | 4.90 | 4.90 |
| 11 | 9.70 | 5.00 | 5.50 |
| 12 | 10.00 | 6.00 | -- |

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|--------|-----------|----------|----------|-------|-------|
| Colluvium | 12 | 0 | 5.6 | 10 | 8.042 | 1.538 |
| Dakota | 12 | 0 | 3.2 | 6.0 | 4.2 | 0.80 |
| Mancos | 12 | 0 | 3.6 | 5.5 | 4.33 | 0.593 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 0.444 | 1.557 | -0.581 | -0.9 | 0.191 | |
| Dakota | 0.231 | 0.667 | 1.009 | 0.95 | 0.19 | |
| Mancos | 0.179 | 0.741 | 0.609 | -0.306 | 0.137 | |

| | %Change in Mean |
|--------|-----------------|
| Mancos | 4.85% |

Notes

--

Removed mathematical outlier

No outliers for second iteration of Dixon's test

Outlier Evaluation for Arsenic

Step 1

Run Dixon test on full data set.

Results indicate only one point is mathematical outlier at 5% significance.

Step 2

Remove mathematical Dixon test on adjusted data set.

Results indicate no mathematical outliers at 5% significance.

Step 3

Plot histogram and review data for appropriate use.

Full data set is considered to be appropriate for use in calculation of background values

Statistical Justification:

- 1 Mathematical outlier value plots within range of values of other background samples
- 2 Change in mean value by removal of data is small (<5%)
- 3 Full range of values is within 3 standard deviations
- 4 Range of values becomes very narrow without inclusion of the mathematical outlier

Step 4

Review highest sample locations to search for "hot samples"

Highest Colluvium RMCB-DN33

Highest Dakota RMDB-R53

RMCB-END34

RMDB-DN28

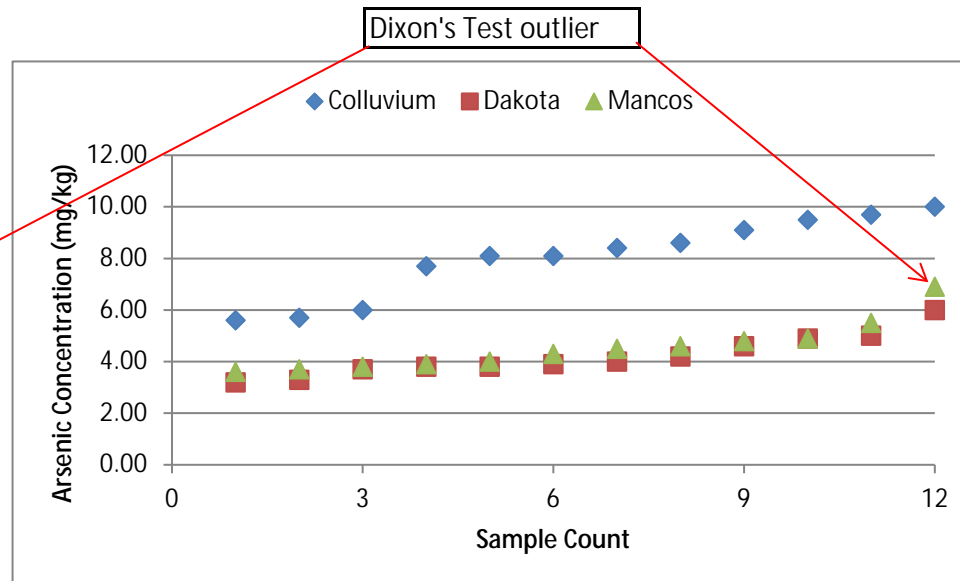
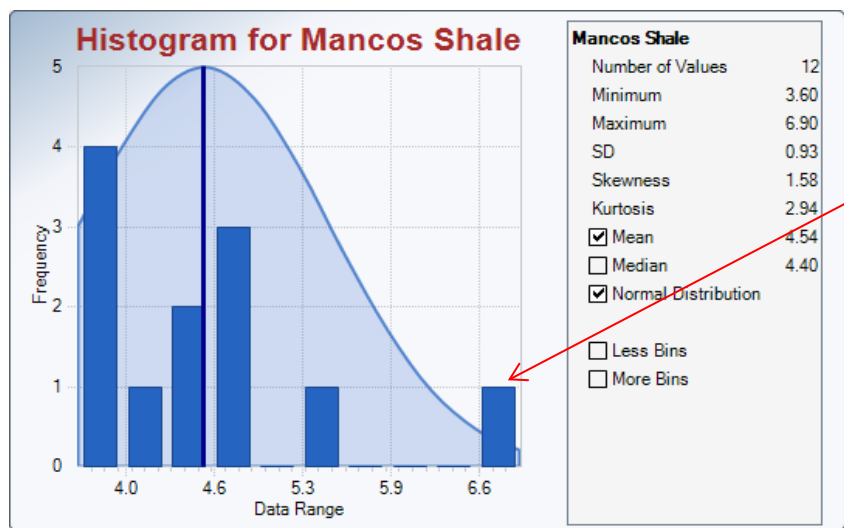
RMCB-X24

RMDB-TN46

Highest Mancos RMMB-EN63

RMMB-AN17

RMMB-LD32



FULL ARSENIC DATA SET (mg/kg)**Outlier Tests for Selected Uncensored Variables****Dixon's Outlier Test for Colluvium**

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 10 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.116

For 10% significance level, 10 is not an outlier.

For 5% significance level, 10 is not an outlier.

For 1% significance level, 10 is not an outlier.

2. Observation Value 5.6 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.098

For 10% significance level, 5.6 is not an outlier.

For 5% significance level, 5.6 is not an outlier.

For 1% significance level, 5.6 is not an outlier.

Dixon's Outlier Test for Dakota

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 6 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.407

For 10% significance level, 6 is not an outlier.

For 5% significance level, 6 is not an outlier.

For 1% significance level, 6 is not an outlier.

2. Observation Value 3.2 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.278

For 10% significance level, 3.2 is not an outlier.

For 5% significance level, 3.2 is not an outlier.

For 1% significance level, 3.2 is not an outlier.

Pro UCL V5.0 Outlier Output File

User Selected Options

Date/Time of Computation

7/7/2014 9:05

From File

WorkSheet.xls

Full Precision

OFF

Dixon's Outlier Test for Mancos

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 6.9 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.625

For 10% significance level, 6.9 is an outlier.**For 5% significance level, 6.9 is an outlier.**

For 1% significance level, 6.9 is not an outlier.

2. Observation Value 3.6 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.105

For 10% significance level, 3.6 is not an outlier.

For 5% significance level, 3.6 is not an outlier.

For 1% significance level, 3.6 is not an outlier.

ADJUSTED ARSENIC DATA SET (mg/kg)**Outlier Tests for Selected Uncensored Variables****Dixon's Outlier Test for Colluvium**

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 10 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.116

For 10% significance level, 10 is not an outlier.

For 5% significance level, 10 is not an outlier.

For 1% significance level, 10 is not an outlier.

2. Observation Value 5.6 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.098

For 10% significance level, 5.6 is not an outlier.

For 5% significance level, 5.6 is not an outlier.

For 1% significance level, 5.6 is not an outlier.

Dixon's Outlier Test for Dakota

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 6 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.407

For 10% significance level, 6 is not an outlier.

For 5% significance level, 6 is not an outlier.

For 1% significance level, 6 is not an outlier.

2. Observation Value 3.2 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.278

For 10% significance level, 3.2 is not an outlier.

For 5% significance level, 3.2 is not an outlier.

For 1% significance level, 3.2 is not an outlier.

Pro UCL V5.0 Outlier Output File

User Selected Options

Date/Time of Computation

7/7/2014 9:10

From File

WorkSheet.xls

Full Precision

OFF

Dixon's Outlier Test for Mancos

Number of Observations = 11

10% critical value: 0.517

5% critical value: 0.576

1% critical value: 0.679

1. Observation Value 5.5 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.389

For 10% significance level, 5.5 is not an outlier.

For 5% significance level, 5.5 is not an outlier.

For 1% significance level, 5.5 is not an outlier.

2. Observation Value 3.6 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.154

For 10% significance level, 3.6 is not an outlier.

For 5% significance level, 3.6 is not an outlier.

For 1% significance level, 3.6 is not an outlier.

Outlier Evaluation for Mercury

FULL MERCURY DATA SET (mg/kg)

| HgCount | Colluvium | Dakota | Mancos |
|---------|-----------|--------|--------|
| 1 | 0.014 | 0.013 | 0.018 |
| 2 | 0.015 | 0.013 | 0.018 |
| 3 | 0.015 | 0.015 | 0.020 |
| 4 | 0.015 | 0.017 | 0.020 |
| 5 | 0.016 | 0.017 | 0.020 |
| 6 | 0.017 | 0.018 | 0.020 |
| 7 | 0.018 | 0.018 | 0.020 |
| 8 | 0.018 | 0.018 | 0.020 |
| 9 | 0.018 | 0.020 | 0.022 |
| 10 | 0.019 | 0.02 | 0.022 |
| 11 | 0.019 | 0.021 | 0.025 |
| 12 | 0.020 | 0.031 | 0.030 |

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|----------|-----------|----------|----------|----------|----------|
| Colluvium | 12 | 0 | 0.014 | 0.02 | 0.017 | 0.001954 |
| Dakota | 12 | 0 | 0.013 | 0.031 | 0.018417 | 0.004719 |
| Mancos | 12 | 0 | 0.018 | 0.03 | 0.02125 | 0.003334 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 5.64E-04 | 0.00222 | -0.0877 | -1.374 | 0.115 | |
| Dakota | 0.00136 | 0.00297 | 1.717 | 4.547 | 0.256 | |
| Mancos | 9.62E-04 | 0.00148 | 1.894 | 4.002 | 0.157 | |

Notes

Red = Dixon's Test Outliers at 5% significance

No outliers for Dixon's Test at 1% significance

ADJUSTED MERCURY DATA SET (mg/kg)

| HgCount | Colluvium | Dakota | Mancos |
|---------|-----------|--------|--------|
| 1 | 0.014 | 0.013 | 0.018 |
| 2 | 0.015 | 0.013 | 0.018 |
| 3 | 0.015 | 0.015 | 0.020 |
| 4 | 0.015 | 0.017 | 0.020 |
| 5 | 0.016 | 0.017 | 0.020 |
| 6 | 0.017 | 0.018 | 0.020 |
| 7 | 0.018 | 0.018 | 0.020 |
| 8 | 0.018 | 0.018 | 0.020 |
| 9 | 0.018 | 0.020 | 0.022 |
| 10 | 0.019 | 0.02 | 0.022 |
| 11 | 0.019 | 0.021 | 0.025 |
| 12 | 0.020 | -- | -- |

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|----------|-----------|----------|----------|---------|----------|
| Colluvium | 12 | 0 | 0.014 | 0.02 | 0.017 | 0.001954 |
| Dakota | 11 | 0 | 0.013 | 0.021 | 0.01727 | 0.002687 |
| Mancos | 11 | 0 | 0.018 | 0.025 | 0.02045 | 0.001968 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 5.64E-04 | 0.00222 | -0.0877 | -1.374 | 0.115 | |
| Dakota | 8.10E-04 | 0.00297 | -0.468 | -0.656 | 0.156 | |
| Mancos | 5.93E-04 | 0 | 1.141 | 2.081 | 0.0962 | |

| | %Change in Mean |
|--------|-----------------|
| Dakota | 6.43% |
| Mancos | 3.84% |

Notes

-- Removed mathematical outlier
No outliers for second iteration of Dixon's test

Outlier Evaluation for Mercury

Step 1

Run Dixon test on full data set.

Results indicate two points are mathematical outliers at 5% significance.

Step 2

Remove mathematical Dixon test on adjusted data set.

Results indicate no mathematical outliers at 5% significance.

Step 3

Plot histogram and review data for appropriate use.

Full data set for is considered to be appropriate

Justification:

- 1 No mathematical outliers according to Dixon's Tests
- 2 Removal of mazimum values will creat unnecessarily narrow range of detection values (from 18 to 8 ug/kg)
- 3 Maximum sample concentrations agree in different areas and do not correlate well with high detections of other analytes.

Step 4

Review highest sample locations to search for "hot samples"

Highest Colluvium RMCB-DN33

RMCB-R59

RMCB-X24

Highest Mancos RMDB-DN28

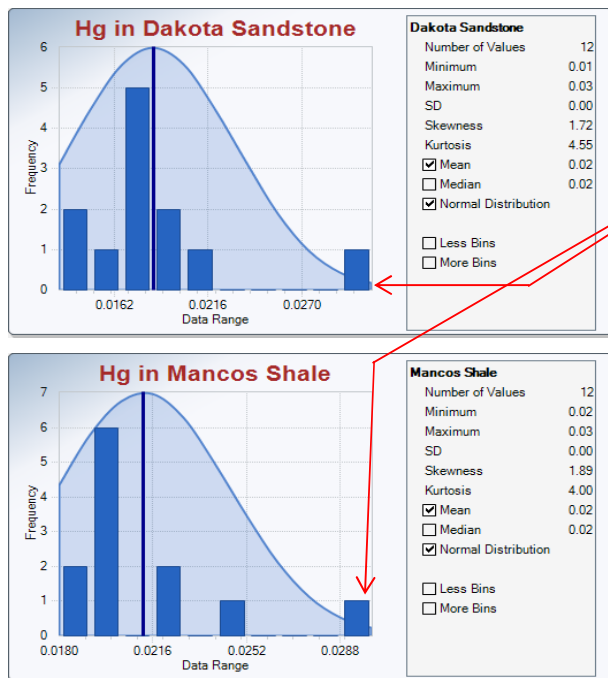
RMDB-C44

RMDB-AN55

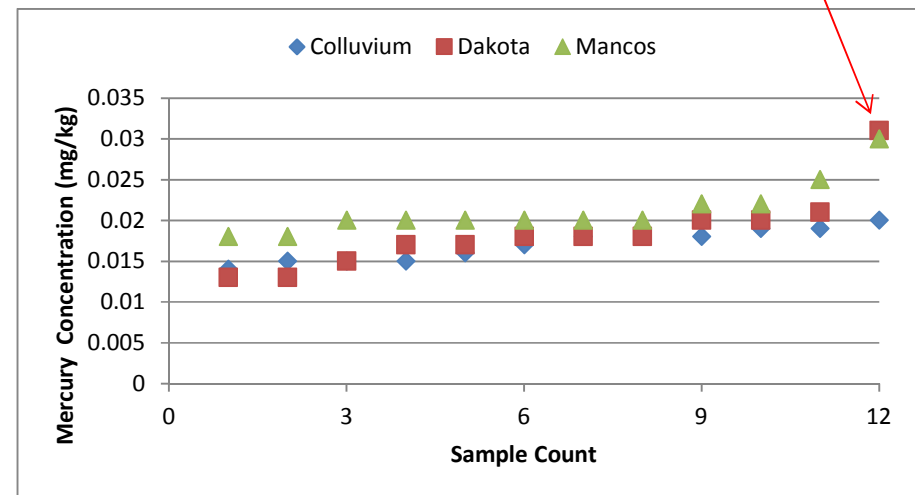
Highest Dakota RMMB-W05

RMMB-EN63

RMMB-E15



Dixon's Test outlier



FULL MERCURY DATA SET (mg/kg)**Outlier Tests for Selected Uncensored Variables****Dixon's Outlier Test for Colluvium**

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.02 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.200

For 10% significance level, 0.02 is not an outlier.

For 5% significance level, 0.02 is not an outlier.

For 1% significance level, 0.02 is not an outlier.

2. Observation Value 0.014 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.200

For 10% significance level, 0.014 is not an outlier.

For 5% significance level, 0.014 is not an outlier.

For 1% significance level, 0.014 is not an outlier.

Dixon's Outlier Test for Dakota

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.031 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.611

For 10% significance level, 0.031 is an outlier.**For 5% significance level, 0.031 is an outlier.**

For 1% significance level, 0.031 is not an outlier.

2. Observation Value 0.013 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.250

For 10% significance level, 0.013 is not an outlier.

For 5% significance level, 0.013 is not an outlier.

For 1% significance level, 0.013 is not an outlier.

Pro UCL V5.0 Outlier Output File

User Selected Options

Date/Time of Computation

7/7/2014 11:47

From File

WorkSheet_a.xls

Full Precision

OFF

Dixon's Outlier Test for Mancos

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.03 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.667

For 10% significance level, 0.03 is an outlier.**For 5% significance level, 0.03 is an outlier.****For 1% significance level, 0.03 is an outlier.**

2. Observation Value 0.018 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.286

For 10% significance level, 0.018 is not an outlier.

For 5% significance level, 0.018 is not an outlier.

For 1% significance level, 0.018 is not an outlier.

ADJUSTED MERCURY DATA SET (mg/kg)**Outlier Tests for Selected Uncensored Variables****Dixon's Outlier Test for Colluvium**

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.02 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.200

For 10% significance level, 0.02 is not an outlier.

For 5% significance level, 0.02 is not an outlier.

For 1% significance level, 0.02 is not an outlier.

2. Observation Value 0.014 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.200

For 10% significance level, 0.014 is not an outlier.

For 5% significance level, 0.014 is not an outlier.

For 1% significance level, 0.014 is not an outlier.

Dixon's Outlier Test for Dakota

Number of Observations = 11

10% critical value: 0.517

5% critical value: 0.576

1% critical value: 0.679

1. Observation Value 0.021 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.125

For 10% significance level, 0.021 is not an outlier.

For 5% significance level, 0.021 is not an outlier.

For 1% significance level, 0.021 is not an outlier.

2. Observation Value 0.013 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.286

For 10% significance level, 0.013 is not an outlier.

For 5% significance level, 0.013 is not an outlier.

For 1% significance level, 0.013 is not an outlier.

Pro UCL V5.0 Outlier Output File

User Selected Options

Date/Time of Computation

7/7/2014 12:17

From File

WorkSheet.xls

Full Precision

OFF

Dixon's Outlier Test for Mancos

Number of Observations = 11

10% critical value: 0.517

5% critical value: 0.576

1% critical value: 0.679

1. Observation Value 0.025 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.429

For 10% significance level, 0.025 is not an outlier.

For 5% significance level, 0.025 is not an outlier.

For 1% significance level, 0.025 is not an outlier.

2. Observation Value 0.018 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.500

For 10% significance level, 0.018 is not an outlier.

For 5% significance level, 0.018 is not an outlier.

For 1% significance level, 0.018 is not an outlier.

Outlier Evaluation for Molybdenum

FULL MOLYBDENUM DATA SET (mg/kg)

| MoCount | Colluvium | Dakota | Mancos |
|---------|-----------|--------|--------|
| 1 | 0.37 | 0.28 | 0.39 |
| 2 | 0.43 | 0.35 | 0.46 |
| 3 | 0.47 | 0.35 | 0.51 |
| 4 | 0.51 | 0.35 | 0.51 |
| 5 | 0.51 | 0.35 | 0.54 |
| 6 | 0.53 | 0.36 | 0.59 |
| 7 | 0.54 | 0.38 | 0.61 |
| 8 | 0.55 | 0.38 | 0.62 |
| 9 | 0.55 | 0.39 | 0.63 |
| 10 | 0.59 | 0.40 | 0.68 |
| 11 | 0.62 | 0.42 | 0.71 |
| 12 | 0.71 | 0.45 | 0.74 |

Notes

No outliers for Dixon's Test at 5% significance

Step 1

Run Dixon test on full data set.

Results indicate only no data is mathematical outlier at 5% significance.

Step 2

Plot histogram and review data for appropriate use.

Step 3

Review highest sample locations to search for "hot samples"

Highest Colluvium RMCB-X24

RMCB-DN33

RMCB-EN34

Highest Dakota RMDB-DN28

RMDB-TN46

RMDB-HND56

Highest Mancos RMMB-E15

RMMB-W05

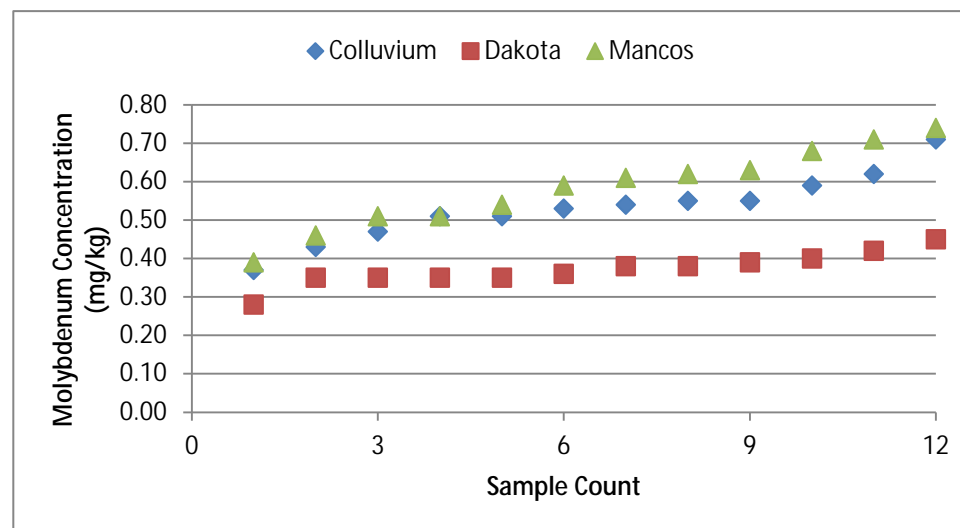
RMMB-AN17

Full data set is considered to be appropriate for use in calculation of background values

Justification:

1 No mathematical outliers according to Dixon's Tests

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|--------|-----------|----------|----------|-------|--------|
| Colluvium | 12 | 0 | 0.37 | 0.71 | 0.532 | 0.0879 |
| Dakota | 12 | 0 | 0.28 | 0.45 | 0.372 | 0.0428 |
| Mancos | 12 | 0 | 0.39 | 0.74 | 0.583 | 0.104 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 0.0254 | 0.0593 | 0.167 | 0.955 | 0.165 | |
| Dakota | 0.0124 | 0.0297 | -0.263 | 1.376 | 0.115 | |
| Mancos | 0.0301 | 0.126 | -0.263 | -0.511 | 0.179 | |



FULL MOLYBDENUM DATA SET (mg/kg)**Outlier Tests for Selected Uncensored Variables****Dixon's Outlier Test for Colluvium**

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.71 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.429

For 10% significance level, 0.71 is not an outlier.

For 5% significance level, 0.71 is not an outlier.

For 1% significance level, 0.71 is not an outlier.

2. Observation Value 0.37 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.400

For 10% significance level, 0.37 is not an outlier.

For 5% significance level, 0.37 is not an outlier.

For 1% significance level, 0.37 is not an outlier.

Dixon's Outlier Test for Dakota

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.45 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.500

For 10% significance level, 0.45 is an outlier.

For 5% significance level, 0.45 is not an outlier.

For 1% significance level, 0.45 is not an outlier.

2. Observation Value 0.28 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.500

For 10% significance level, 0.28 is an outlier.

For 5% significance level, 0.28 is not an outlier.

For 1% significance level, 0.28 is not an outlier.

Pro UCL V5.0 Outlier Output File

User Selected Options

Date/Time of Computation

7/7/2014 11:50

From File

WorkSheet_a.xls

Full Precision

OFF

Dixon's Outlier Test for Mancos

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.74 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.214

For 10% significance level, 0.74 is not an outlier.

For 5% significance level, 0.74 is not an outlier.

For 1% significance level, 0.74 is not an outlier.

2. Observation Value 0.39 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.375

For 10% significance level, 0.39 is not an outlier.

For 5% significance level, 0.39 is not an outlier.

For 1% significance level, 0.39 is not an outlier.

Outlier Evaluation for Selenium

FULL SELENIUM DATA SET (mg/kg)

| SeCount | Colluvium | Dakota | Mancos |
|---------|-----------|--------|--------|
| 1 | 0.85 | 0.52 | 0.65 |
| 2 | 0.93 | 0.60 | 0.66 |
| 3 | 0.94 | 0.63 | 0.78 |
| 4 | 1.0 | 0.67 | 0.79 |
| 5 | 1.0 | 0.68 | 0.80 |
| 6 | 1.0 | 0.70 | 0.86 |
| 7 | 1.1 | 0.72 | 0.88 |
| 8 | 1.1 | 0.75 | 0.92 |
| 9 | 1.1 | 0.75 | 0.99 |
| 10 | 1.2 | 0.78 | 1.1 |
| 11 | 1.3 | 0.85 | 1.1 |
| 12 | 1.4 | 0.99 | 1.2 |

Notes

No outliers for Dixon's Test at 5% significance

Step 1

Run Dixon test on full data set.

Results indicate only no data is mathematical outlier at 5% significance.

Step 2

Plot histogram and review data for appropriate use.

Step 3

Review highest sample locations to search for "hot samples"

Highest Colluvium RMCB-DN33

RMCB-EN34

RMCB-A14

Highest Dakota RMDB-R53

RMDB-H40

RMDB-DN28

Highest Mancos RMDB-C44

RMDB-CN44

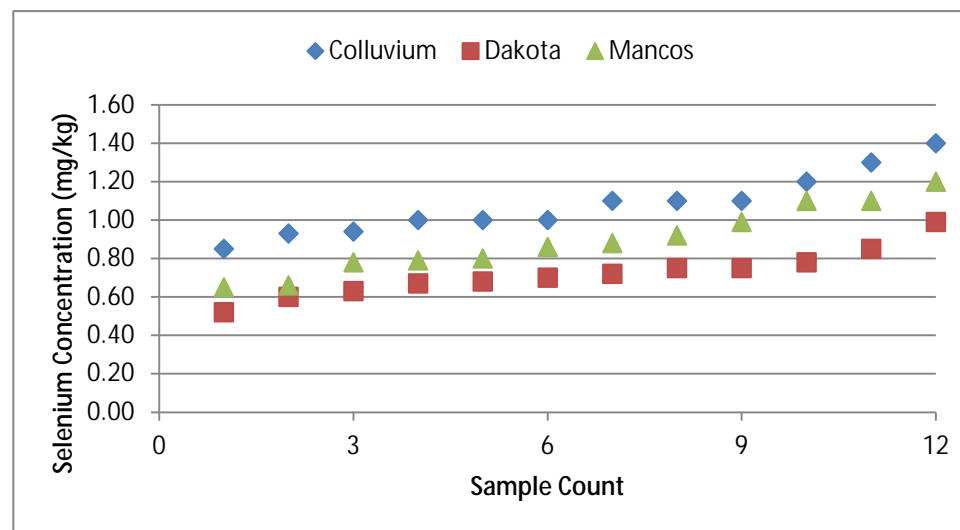
RMDB-AU44

Full data set is considered to be appropriate for use in calculation of background values

Justification:

1 No mathematical outliers according to Dixon's Tests

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|--------|-----------|----------|----------|-------|-------|
| Colluvium | 12 | 0 | 0.85 | 1.4 | 1.077 | 0.16 |
| Dakota | 12 | 0 | 0.52 | 0.99 | 0.72 | 0.121 |
| Mancos | 12 | 0 | 0.65 | 1.2 | 0.894 | 0.175 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 0.0461 | 0.119 | 0.754 | 0.137 | 0.148 | |
| Dakota | 0.0351 | 0.0815 | 0.7 | 1.4 | 0.169 | |
| Mancos | 0.0505 | 0.156 | 0.327 | -0.778 | 0.196 | |



FULL SELENIUM DATA SET (mg/kg)**Outlier Tests for Selected Uncensored Variables****Dixon's Outlier Test for Colluvium**

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 1.4 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.426

For 10% significance level, 1.4 is not an outlier.

For 5% significance level, 1.4 is not an outlier.

For 1% significance level, 1.4 is not an outlier.

2. Observation Value 0.85 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.200

For 10% significance level, 0.85 is not an outlier.

For 5% significance level, 0.85 is not an outlier.

For 1% significance level, 0.85 is not an outlier.

Dixon's Outlier Test for Dakota

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.99 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.538

For 10% significance level, 0.99 is an outlier.

For 5% significance level, 0.99 is not an outlier.

For 1% significance level, 0.99 is not an outlier.

2. Observation Value 0.52 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.333

For 10% significance level, 0.52 is not an outlier.

For 5% significance level, 0.52 is not an outlier.

For 1% significance level, 0.52 is not an outlier.

Pro UCL V5.0 Outlier Output File

User Selected Options

Date/Time of Computation

6/10/2014 14:36

From File

WorkSheet_a.xls

Full Precision

OFF

Dixon's Outlier Test for Mancos

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 1.2 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.185

For 10% significance level, 1.2 is not an outlier.

For 5% significance level, 1.2 is not an outlier.

For 1% significance level, 1.2 is not an outlier.

2. Observation Value 0.65 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.289

For 10% significance level, 0.65 is not an outlier.

For 5% significance level, 0.65 is not an outlier.

For 1% significance level, 0.65 is not an outlier.

Outlier Evaluation for Uranium

FULL URANIUM DATA SET (mg/kg)

| Ucount | Colluvium | Dakota | Mancos |
|--------|-----------|--------|--------|
| 1 | 0.48 | 0.38 | 0.4 |
| 2 | 0.56 | 0.41 | 0.48 |
| 3 | 0.59 | 0.44 | 0.5 |
| 4 | 0.61 | 0.44 | 0.51 |
| 5 | 0.62 | 0.47 | 0.51 |
| 6 | 0.63 | 0.47 | 0.52 |
| 7 | 0.63 | 0.49 | 0.52 |
| 8 | 0.64 | 0.51 | 0.61 |
| 9 | 0.67 | 0.54 | 0.62 |
| 10 | 0.68 | 0.54 | 0.65 |
| 11 | 0.74 | 0.56 | 0.76 |
| 12 | 0.82 | 0.58 | 0.86 |

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|--------|-----------|----------|----------|-------|--------|
| Colluvium | 12 | 0 | 0.48 | 0.82 | 0.639 | 0.0858 |
| Dakota | 12 | 0 | 0.38 | 0.58 | 0.486 | 0.0622 |
| Mancos | 12 | 0 | 0.4 | 0.86 | 0.578 | 0.129 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 0.0248 | 0.0593 | 0.407 | 1.399 | 0.134 | |
| Dakota | 0.0179 | 0.0741 | -0.112 | -0.929 | 0.128 | |
| Mancos | 0.0373 | 0.0964 | 1.043 | 0.825 | 0.224 | |

Notes

Red = Dixon's Test Outliers at 5% significance

No outliers for Dixon's Test at 1% significance

ADJUSTED URANIUM DATA SET (mg/kg)

| Ucount | Colluvium | Dakota | Mancos |
|--------|-----------|--------|--------|
| 1 | 0.48 | 0.38 | 0.4 |
| 2 | 0.56 | 0.41 | 0.48 |
| 3 | 0.59 | 0.44 | 0.5 |
| 4 | 0.61 | 0.44 | 0.51 |
| 5 | 0.62 | 0.47 | 0.51 |
| 6 | 0.63 | 0.47 | 0.52 |
| 7 | 0.63 | 0.49 | 0.52 |
| 8 | 0.64 | 0.51 | 0.61 |
| 9 | 0.67 | 0.54 | 0.62 |
| 10 | 0.68 | 0.54 | 0.65 |
| 11 | 0.74 | 0.56 | 0.76 |
| 12 | 0.82 | 0.58 | -- |

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|--------|-----------|----------|----------|-------|--------|
| Colluvium | 12 | 0 | 0.48 | 0.82 | 0.639 | 0.0858 |
| Dakota | 12 | 0 | 0.38 | 0.58 | 0.486 | 0.0622 |
| Mancos | 11 | 0 | 0.4 | 0.76 | 0.553 | 0.0987 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 0.0248 | 0.0593 | 0.407 | 1.399 | 0.134 | |
| Dakota | 0.0179 | 0.0741 | -0.112 | -0.929 | 0.128 | |
| Mancos | 0.0298 | 0.0593 | 0.762 | 0.77 | 0.179 | |

| | %Change in Mean |
|--------|-----------------|
| Mancos | 4.42% |

Notes

-- Removed mathematical outlier
No outliers for second iteration of Dixon's test

Outlier Evaluation for Uranium

Step 1

Run Dixon test on full data set.

Results indicate only one point is mathematical outlier at 5% significance.

Step 2

Remove mathematical Dixon test on adjusted data set.

Results indicate no mathematical outliers at 5% significance.

Step 3

Plot histogram and review data for appropriate use.

Full data set is considered to be appropriate for use in calculation of background values

Justification:

- 1 Mathematical outlier value plots near range of values of other background samples
- 2 Change in mean value by removal of data is small (<5%)
- 3 Full range of values is within 3 standard deviations

Step 4

Review highest sample locations to search for "hot samples"

Highest Colluvium RMCB-X24

Highest Dakota RMDB-DN28

RMCB-END34

RMDB-TN46

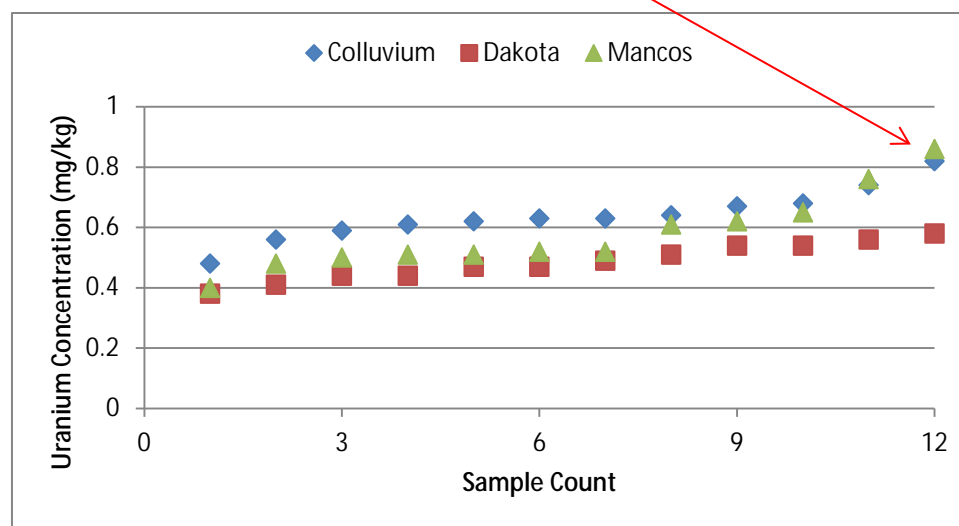
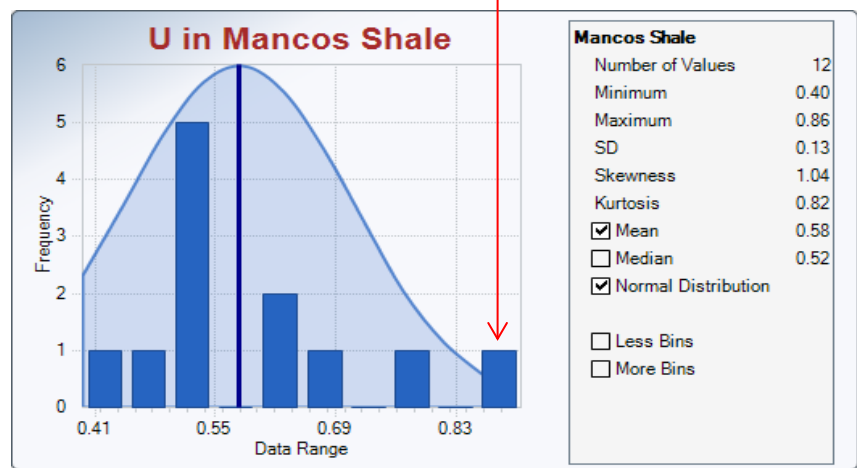
RMCB-DN33

RMDB-C44

Highest Mancos RMMB-EN63

RMMB-W05

RMMB-R70



FULL URANIUM DATA SET (mg/kg)**Outlier Tests for Selected Uncensored Variables****Dixon's Outlier Test for Colluvium**

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.82 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.538

For 10% significance level, 0.82 is an outlier.

For 5% significance level, 0.82 is not an outlier.

For 1% significance level, 0.82 is not an outlier.

2. Observation Value 0.48 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.423

For 10% significance level, 0.48 is not an outlier.

For 5% significance level, 0.48 is not an outlier.

For 1% significance level, 0.48 is not an outlier.

Dixon's Outlier Test for Dakota

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.58 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.235

For 10% significance level, 0.58 is not an outlier.

For 5% significance level, 0.58 is not an outlier.

For 1% significance level, 0.58 is not an outlier.

2. Observation Value 0.38 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.333

For 10% significance level, 0.38 is not an outlier.

For 5% significance level, 0.38 is not an outlier.

For 1% significance level, 0.38 is not an outlier.

Pro UCL V5.0 Outlier Output File

User Selected Options

Date/Time of Computation

7/7/2014 11:59

From File

WorkSheet_a.xls

Full Precision

OFF

Dixon's Outlier Test for Mancos

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.86 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.553

For 10% significance level, 0.86 is an outlier.

For 5% significance level, 0.86 is an outlier.

For 1% significance level, 0.86 is not an outlier.

2. Observation Value 0.4 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.278

For 10% significance level, 0.4 is not an outlier.

For 5% significance level, 0.4 is not an outlier.

For 1% significance level, 0.4 is not an outlier.

ADJUSTED URANIUM DATA SET (mg/kg)**Outlier Tests for Selected Uncensored Variables****Dixon's Outlier Test for Colluvium**

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.82 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.538

For 10% significance level, 0.82 is an outlier.

For 5% significance level, 0.82 is not an outlier.

For 1% significance level, 0.82 is not an outlier.

2. Observation Value 0.48 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.423

For 10% significance level, 0.48 is not an outlier.

For 5% significance level, 0.48 is not an outlier.

For 1% significance level, 0.48 is not an outlier.

Dixon's Outlier Test for Dakota

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 0.58 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.235

For 10% significance level, 0.58 is not an outlier.

For 5% significance level, 0.58 is not an outlier.

For 1% significance level, 0.58 is not an outlier.

2. Observation Value 0.38 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.333

For 10% significance level, 0.38 is not an outlier.

For 5% significance level, 0.38 is not an outlier.

For 1% significance level, 0.38 is not an outlier.

Pro UCL V5.0 Outlier Output File

User Selected Options

Date/Time of Computation 7/7/2014 12:11

From File WorkSheet.xls

Full Precision OFF

Dixon's Outlier Test for Mancos

Number of Observations = 11

10% critical value: 0.517

5% critical value: 0.576

1% critical value: 0.679

1. Observation Value 0.76 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.500

For 10% significance level, 0.76 is not an outlier.

For 5% significance level, 0.76 is not an outlier.

For 1% significance level, 0.76 is not an outlier.

2. Observation Value 0.4 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.400

For 10% significance level, 0.4 is not an outlier.

For 5% significance level, 0.4 is not an outlier.

For 1% significance level, 0.4 is not an outlier.

Outlier Evaluation for Vanadium

FULL VANADIUM DATA SET (mg/kg)

| Vcount | Colluvium | Dakota | Mancos |
|--------|-----------|--------|--------|
| 1 | 12 | 12 | 16 |
| 2 | 12 | 13 | 17 |
| 3 | 12 | 13 | 17 |
| 4 | 12 | 14 | 17 |
| 5 | 12 | 15 | 18 |
| 6 | 13 | 15 | 18 |
| 7 | 14 | 15 | 18 |
| 8 | 14 | 15 | 20 |
| 9 | 14 | 16 | 20 |
| 10 | 14 | 16 | 20 |
| 11 | 15 | 16 | 21 |
| 12 | 16 | 19 | 21 |

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|--------|-----------|----------|----------|--------|-------|
| Colluvium | 12 | 0 | 12 | 16 | 13.33 | 1.371 |
| Dakota | 12 | 0 | 12 | 19 | 14.92 | 1.832 |
| Mancos | 12 | 0 | 16 | 21 | 18.58 | 1.73 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 0.396 | 2.224 | 0.546 | -0.69 | 0.103 | |
| Dakota | 0.529 | 1.483 | 0.572 | 1.314 | 0.123 | |
| Mancos | 0.499 | 2.224 | 0.148 | -1.499 | 0.0931 | |

Notes

No outliers for Dixon's Test at 5% significance

Step 1

Run Dixon test on full data set.

Results indicate only no data is mathematical outlier at 5% significance.

Step 2

Plot histogram and review data for appropriate use.

Step 3

Review highest sample locations to search for "hot samples"

Highest Colluvium RMCB-DN33

RMCB-END34

RMCB-N52

Highest Dakota RMDB-TN46

RMDB-DN28

RMDB-H40

Highest Mancos RMMB-AN17

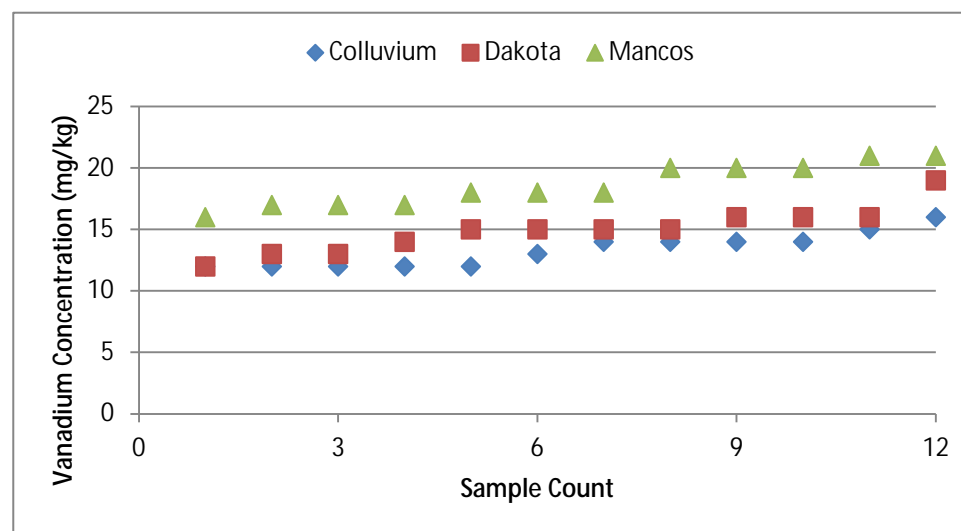
RMMB-CN72

RMMB-E15

Full data set is considered to be appropriate for use in calculation of background values

Justification:

1 No mathematical outliers according to Dixon's Tests



FULL VANADIUM DATA SET (mg/kg)**Outlier Tests for Selected Uncensored Variables****Dixon's Outlier Test for Colluvium**

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 16 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.500

For 10% significance level, 16 is an outlier.

For 5% significance level, 16 is not an outlier.

For 1% significance level, 16 is not an outlier.

2. Observation Value 12 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.000

For 10% significance level, 12 is not an outlier.

For 5% significance level, 12 is not an outlier.

For 1% significance level, 12 is not an outlier.

Dixon's Outlier Test for Dakota

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 19 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.500

For 10% significance level, 19 is an outlier.

For 5% significance level, 19 is not an outlier.

For 1% significance level, 19 is not an outlier.

2. Observation Value 12 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.250

For 10% significance level, 12 is not an outlier.

For 5% significance level, 12 is not an outlier.

For 1% significance level, 12 is not an outlier.

Pro UCL V5.0 Outlier Output File

User Selected Options

Date/Time of Computation

7/7/2014 12:06

From File

WorkSheet_a.xls

Full Precision

OFF

Dixon's Outlier Test for Mancos

Number of Observations = 12

10% critical value: 0.49

5% critical value: 0.546

1% critical value: 0.642

1. Observation Value 21 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.250

For 10% significance level, 21 is not an outlier.

For 5% significance level, 21 is not an outlier.

For 1% significance level, 21 is not an outlier.

2. Observation Value 16 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.200

For 10% significance level, 16 is not an outlier.

For 5% significance level, 16 is not an outlier.

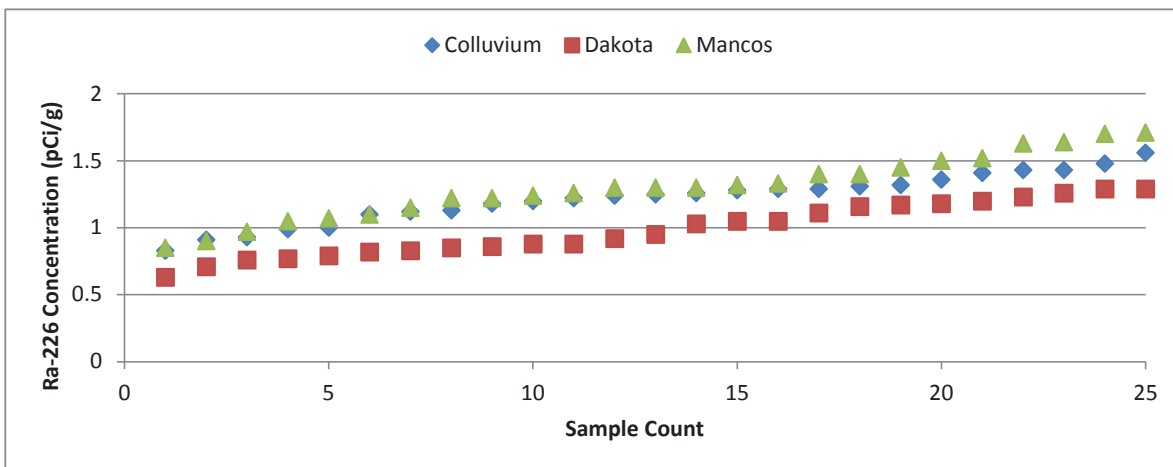
For 1% significance level, 16 is not an outlier.

Outlier Evaluation for Radium-226

FULL Ra-226 DATA SET (ug/kg)

| Ra226Count | Colluvium | Dakota | Mancos |
|------------|-----------|--------|--------|
| 1 | 0.83 | 0.63 | 0.85 |
| 2 | 0.91 | 0.71 | 0.9 |
| 3 | 0.93 | 0.76 | 0.97 |
| 4 | 0.99 | 0.77 | 1.05 |
| 5 | 1 | 0.79 | 1.07 |
| 6 | 1.1 | 0.82 | 1.1 |
| 7 | 1.12 | 0.83 | 1.15 |
| 8 | 1.13 | 0.85 | 1.22 |
| 9 | 1.18 | 0.86 | 1.22 |
| 10 | 1.2 | 0.88 | 1.24 |
| 11 | 1.22 | 0.88 | 1.26 |
| 12 | 1.24 | 0.92 | 1.3 |
| 13 | 1.25 | 0.95 | 1.3 |
| 14 | 1.26 | 1.03 | 1.3 |
| 15 | 1.28 | 1.05 | 1.32 |
| 16 | 1.29 | 1.05 | 1.33 |
| 17 | 1.29 | 1.11 | 1.4 |
| 18 | 1.31 | 1.16 | 1.4 |
| 19 | 1.32 | 1.17 | 1.45 |
| 20 | 1.36 | 1.18 | 1.5 |
| 21 | 1.41 | 1.2 | 1.52 |
| 22 | 1.43 | 1.23 | 1.63 |
| 23 | 1.43 | 1.26 | 1.64 |
| 24 | 1.48 | 1.29 | 1.7 |
| 25 | 1.56 | 1.29 | 1.71 |

| Variable | NumObs | # Missing | Minimum | Maximum | Mean | SD |
|-----------|--------|-----------|----------|----------|-------|-------|
| Colluvium | 25 | 0 | 0.83 | 1.56 | 1.221 | 0.186 |
| Dakota | 25 | 0 | 0.63 | 1.29 | 0.987 | 0.199 |
| Mancos | 25 | 0 | 0.85 | 1.71 | 1.301 | 0.237 |
| Variable | SEM | MAD/0.675 | Skewness | Kurtosis | CV | |
| Colluvium | 0.0372 | 0.178 | -0.381 | -0.33 | 0.152 | |
| Dakota | 0.0397 | 0.237 | 0.0535 | -1.264 | 0.201 | |
| Mancos | 0.0475 | 0.222 | -0.0142 | -0.529 | 0.182 | |



Step 1

Run Rosner's test on full data set.

Results indicate only no data is mathematical outlier at 5% significance.

Step 2

Plot histogram and review data for appropriate use.

Full data set is considered to be appropriate for use in calculation of background values

Justification:

1 No mathematical outliers according to Rosner's Tests

Pro UCL V5.0 Outlier Output File**Outlier Tests for Selected Uncensored Variables****User Selected Options**

Date/Time of Computation 6/10/2014 16:29
 From File WorkSheet_a.xls
 Full Precision OFF

Rosner's Outlier Test for Colluvium

Mean 1.221
 Standard Deviation 0.186
 Number of data 25
 Number of suspected outliers 1

| # | Mean | sd | Potential outlier | Obs. Number | Test value | Critical value (5%) | Critical value (1%) |
|---|-------|-------|-------------------|-------------|------------|---------------------|---------------------|
| 1 | 1.221 | 0.182 | 0.83 | 24 | 2.145 | 2.82 | 3.14 |

For 5% Significance Level, there is no Potential Outlier

For 1% Significance Level, there is no Potential Outlier

Rosner's Outlier Test for Dakota

Mean 0.987
 Standard Deviation 0.199
 Number of data 25
 Number of suspected outliers 1

| # | Mean | sd | Potential outlier | Obs. Number | Test value | Critical value (5%) | Critical value (1%) |
|---|-------|-------|-------------------|-------------|------------|---------------------|---------------------|
| 1 | 0.987 | 0.195 | 0.63 | 3 | 1.834 | 2.82 | 3.14 |

For 5% Significance Level, there is no Potential Outlier

For 1% Significance Level, there is no Potential Outlier

Rosner's Outlier Test for Mancos

Mean 1.301
 Standard Deviation 0.237
 Number of data 25
 Number of suspected outliers 1

| # | Mean | sd | Potential outlier | Obs. Number | Test value | Critical value (5%) | Critical value (1%) |
|---|-------|-------|-------------------|-------------|------------|---------------------|---------------------|
| 1 | 1.301 | 0.233 | 0.85 | 18 | 1.94 | 2.82 | 3.14 |

For 5% Significance Level, there is no Potential Outlier

For 1% Significance Level, there is no Potential Outlier

Background Comparison Value for Arsenic

Arsenic data evaluated for outliers

One outlier detected in Mancos Shale data set

Arsenic data evaluated for normality

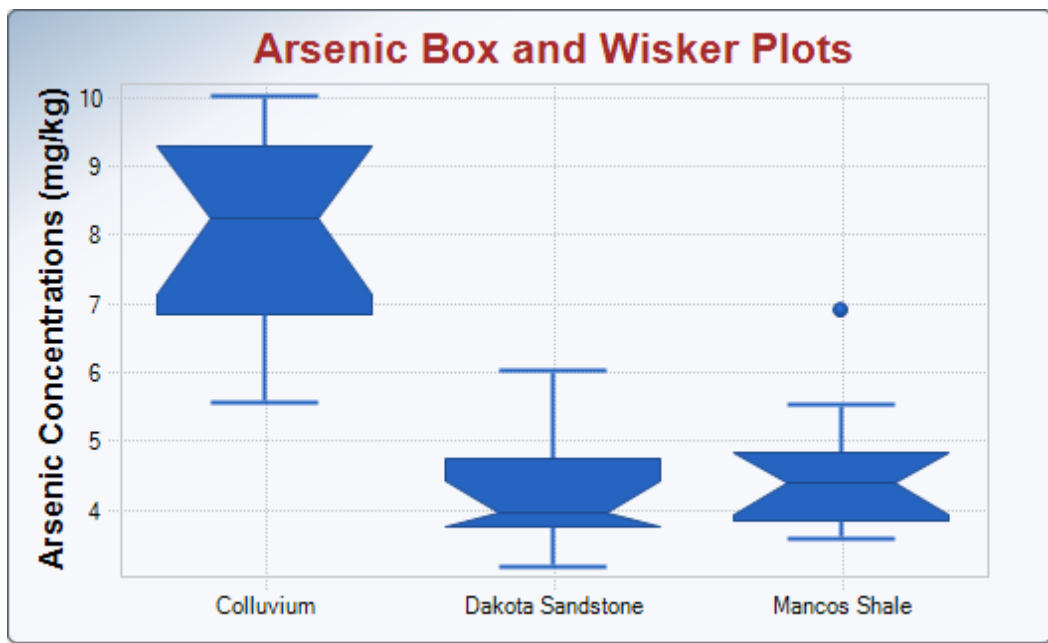
Colluvium and Dakota Sandstone soil data sets fit normal data distribution

Mancos Shale soil data set approximates normal distribution

Background threshold values calculated by UTL95-95 method

| Soils | Arsenic Background Comparison Value (mg/kg) |
|------------------|---|
| Colluvium | 12.25 |
| Dakota Sandstone | 6.389 |
| Mancos Shale | 5.998 |

mg/kg = milligrams per kilogram



Background Comparison Value for Mercury

Mercury data evaluated for outliers

One outlier detected in Dakota Sandstone and Mancos Shale data set

Mercury data evaluated for normality

Colluvium and Dakota Sandstone soil data set fit normal data distribution

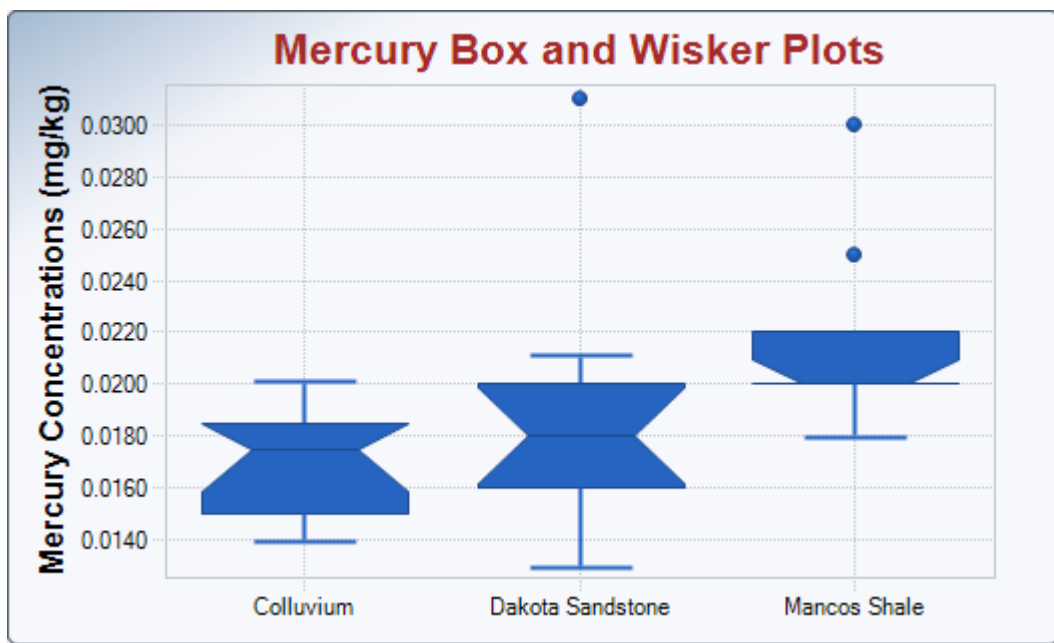
Dakota Sandstone soil data set approximates a normal data distribution

Mancos Shale soil data set do not fit any pattern and are modeled with nonparametric UTL95-95

Background threshold values calculated by UTL95-95

| Soils | Mercury Background Comparison Value (mg/kg) |
|------------------|---|
| Colluvium | 0.0223 |
| Dakota Sandstone | 0.0313 |
| Mancos Shale | 0.0311 |

mg/kg = micrograms per kilogram



Background Comparison Value for Molybdenum

Molybdenum data evaluated for outliers

No outliers detected

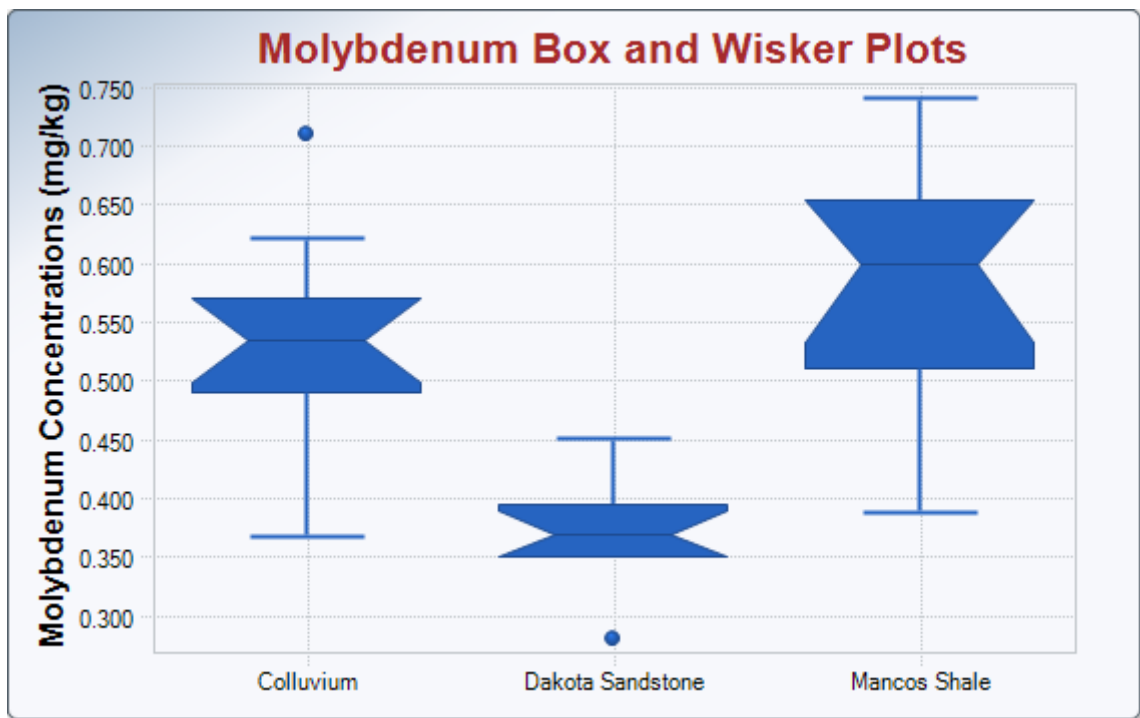
Molybdenum data evaluated for normality

All soil data sets fit normal data distribution

Background threshold values calculated by UTL95-95 method

| Soils | Molybdenum Background Comparison Value (mg/kg) |
|------------------|--|
| Colluvium | 0.772 |
| Dakota Sandstone | 0.489 |
| Mancos Shale | 0.868 |

mg/kg = micrograms per kilogram



Background Comparison Value for Selenium

Selenium data evaluated for outliers

No outliers detected

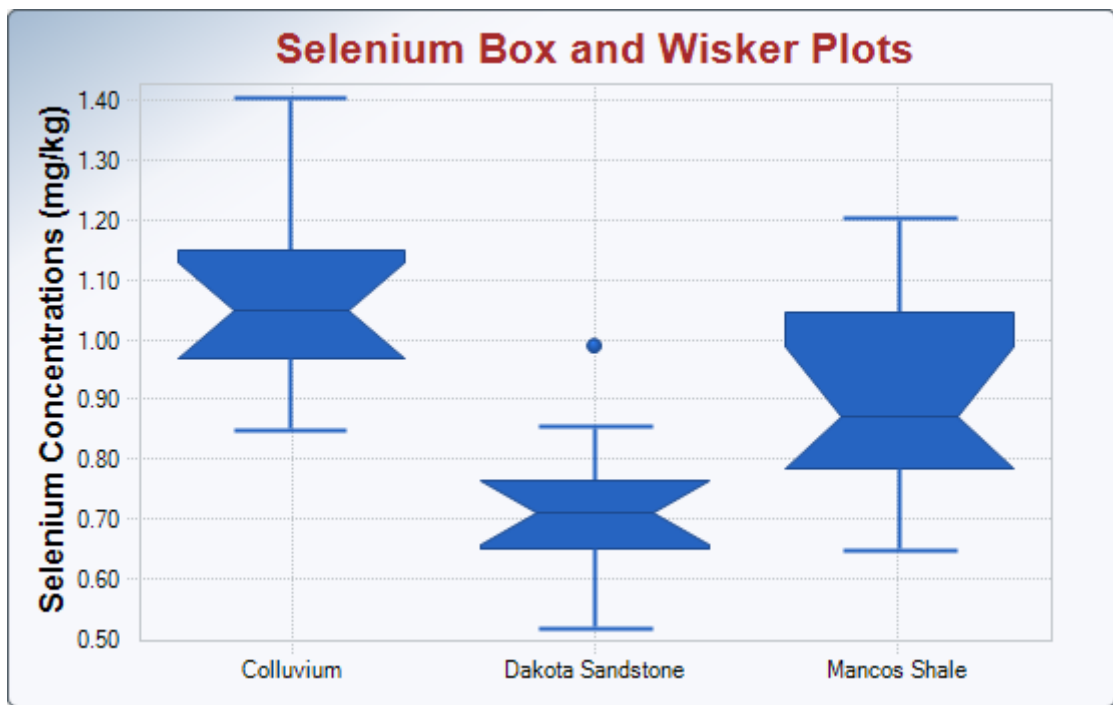
Selenium data evaluated for normality

All soil data sets fit normal data distribution

Background threshold values calculated by UTL95-95 method

| Soils | Uranium Background Comparison Value (mg/kg) |
|------------------|---|
| Colluvium | 1.514 |
| Dakota Sandstone | 1.052 |
| Mancos Shale | 1.373 |

mg/kg = micrograms per kilogram



Background Comparison Value for Uranium

Uranium data evaluated for outliers

One outlier detected in Mancos Shale data set

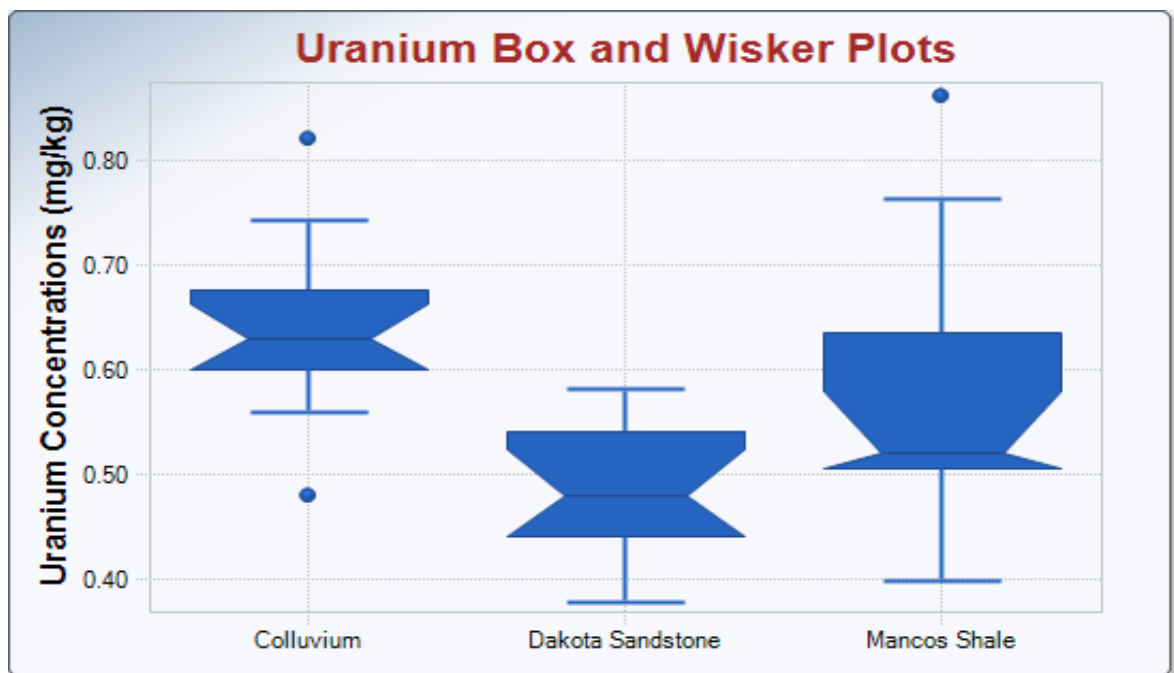
Uranium data evaluated for normality

All soil data sets fit normal data distribution

Background threshold values calculated by UTL95-95 method

| Soils | Uranium Background Comparison Value (mg/kg) |
|------------------|---|
| Colluvium | 0.874 |
| Dakota Sandstone | 0.656 |
| Mancos Shale | 0.932 |

mg/kg = micrograms per kilogram



Background Comparison Value for Vanadium

Vanadium data evaluated for outliers

No outliers detected

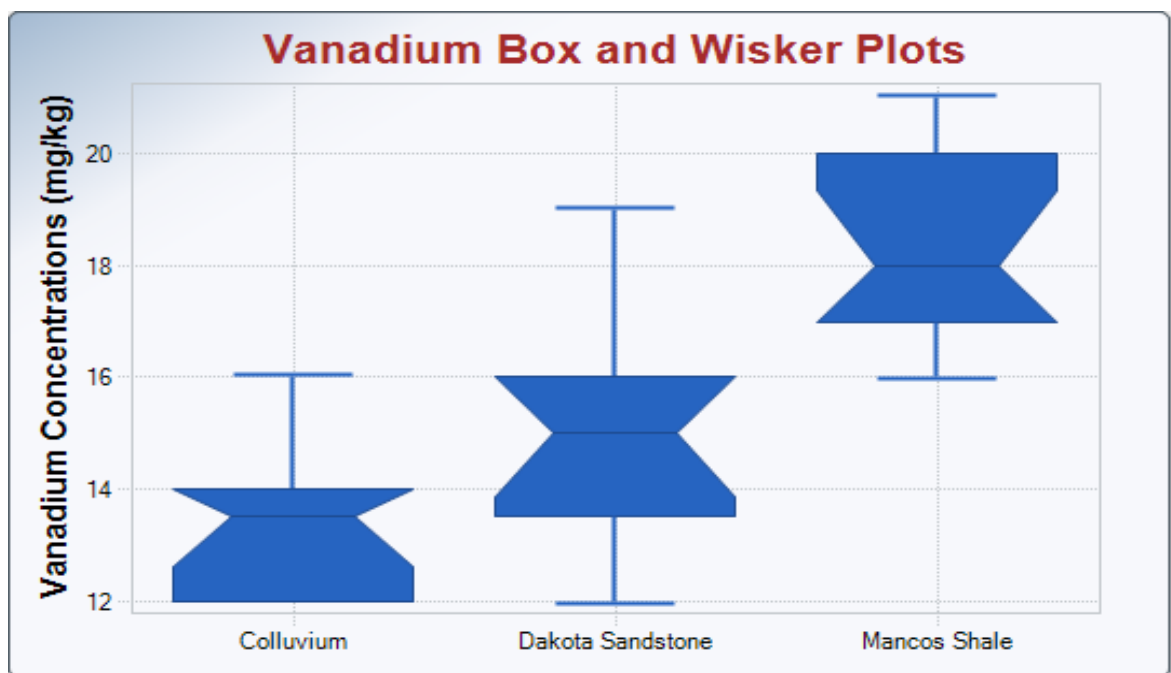
Vanadium data evaluated for normality

All soil data sets fit normal data distribution

Background threshold values calculated by UTL95-95 method

| Soils | Vanadium Background Comparison Value (mg/kg) |
|------------------|--|
| Colluvium | 17.08 |
| Dakota Sandstone | 19.93 |
| Mancos Shale | 23.32 |

mg/kg = micrograms per kilogram



Background Comparison Value for Radium-226

Radium-226 data evaluated for outliers

No outliers detected

Radium-226 data evaluated for normality

All soil data sets fit normal data distribution

Background threshold values calculated by UTL95-95 method

| Soils | Ra-226 BTV (pCi/g) |
|------------------|--------------------|
| Colluvium | 1.647 |
| Dakota Sandstone | 1.442 |
| Mancos Shale | 1.845 |

ug/kg = micrograms per kilogram

