# Appendix E

## Statistical Comparison of Site Data to Background Data

**Gkhoury**

90041255

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Arsenic
Background Data: Arsenic

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 84 | 12 |
| Number of Missing Values | 2 | 0 |
| Number of Distinct Observations | 79 | 12 |
| Minimum | 0.016 | 4.25 |
| Maximum | 10.6 | 5.52 |
| Mean | 4.497 | 4.803 |
| Median | 4.335 | 4.68 |
| SD | 1.446 | 0.4 |
| SE of Mean | 0.158 | 0.115 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 3943 |
| WMW Test U-Stat | -1.457 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.927 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Lead
Background Data: Lead

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 84 | 12 |
| Number of Missing Values | 2 | 0 |
| Number of Distinct Observations | 74 | 11 |
| Minimum | 0.019 | 9.46 |
| Maximum | 27.7 | 14.2 |
| Mean | 12.75 | 11.13 |
| Median | 12.15 | 10.55 |
| SD | 5.337 | 1.559 |
| SE of Mean | 0.582 | 0.45 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4120 |
| WMW Test U-Stat | 0.499 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.309 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

**Area of Concern Data: Molybdenum**
**Background Data: Molybdenum**

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 84 | 12 |
| Number of Missing Values | 2 | 0 |
| Number of Distinct Observations | 77 | 11 |
| Minimum | 0.023 | 0.343 |
| Maximum | 1.74 | 0.623 |
| Mean | 0.719 | 0.407 |
| Median | 0.657 | 0.386 |
| SD | 0.288 | 0.0776 |
| SE of Mean | 0.0314 | 0.0224 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4465 |
| WMW Test U-Stat | 4.321 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 7.78E-06 |

Conclusion with Alpha = 0.05

Reject H0, Conclude Site > Background
P-Value < alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Selenium
Background Data: Selenium

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 46 | 12 |
| Number of Missing Values | 31 | 0 |
| Number of Distinct Observations | 45 | 12 |
| Minimum | 0.022 | 0.349 |
| Maximum | 2.2 | 2.03 |
| Mean | 0.615 | 0.555 |
| Median | 0.531 | 0.404 |
| SD | 0.367 | 0.472 |
| SE of Mean | 0.0541 | 0.136 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 1435 |
| WMW Test U-Stat | 1.488 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.0684 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

User Selected Options

| | |
|---|---|
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Vanadium
Background Data: Vanadium

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 46 | 12 |
| Number of Missing Values | 31 | 0 |
| Number of Distinct Observations | 40 | 12 |
| Minimum | 0.022 | 20.4 |
| Maximum | 38.9 | 36.5 |
| Mean | 23.95 | 27.55 |
| Median | 23.4 | 28.05 |
| SD | 7.383 | 4.472 |
| SE of Mean | 1.088 | 1.291 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 1260 |
| WMW Test U-Stat | -1.881 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.97 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

User Selected Options

| | |
|---|---|
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Alpha
Background Data: Alpha

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 55 | 11 |
| Minimum | 0.8 | 2 |
| Maximum | 26.6 | 6.7 |
| Mean | 8.047 | 4.908 |
| Median | 7.85 | 5.7 |
| SD | 3.753 | 1.786 |
| SE of Mean | 0.405 | 0.515 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4543 |
| WMW Test U-Stat | 3.089 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.00101 |

Conclusion with Alpha = 0.05

Reject H0, Conclude Site > Background
P-Value < alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Ba140
Background Data: Ba140

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 1 | 2 |
| Minimum | 0 | 0 |
| Maximum | 0 | 0.825 |
| Mean | 0 | 0.0688 |
| Median | 0 | 0 |
| SD | 0 | 0.238 |
| SE of Mean | 0 | 0.0688 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4214 |
| WMW Test U-Stat | -0.471 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.681 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Beta
Background Data: Beta

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 69 | 11 |
| Minimum | 11 | 19.1 |
| Maximum | 42.7 | 27.6 |
| Mean | 25.93 | 24.16 |
| Median | 25.85 | 24.35 |
| SD | 4.966 | 2.514 |
| SE of Mean | 0.536 | 0.726 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4376 |
| WMW Test U-Stat | 1.279 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.1 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Bi212
Background Data: Bi212

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 56 | 11 |
| Minimum | 0.48 | 0.87 |
| Maximum | 1.57 | 1.34 |
| Mean | 1.017 | 1.124 |
| Median | 1.045 | 1.115 |
| SD | 0.263 | 0.137 |
| SE of Mean | 0.0284 | 0.0396 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4132 |
| WMW Test U-Stat | -1.366 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.914 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Bi214
Background Data: Bi214

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 62 | 11 |
| Minimum | 0.494 | 0.806 |
| Maximum | 2.79 | 1.05 |
| Mean | 1.087 | 0.904 |
| Median | 0.97 | 0.92 |
| SD | 0.368 | 0.0822 |
| SE of Mean | 0.0397 | 0.0237 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4399 |
| WMW Test U-Stat | 1.534 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.0626 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Co60
Background Data: Co60

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 1 | 1 |
| Minimum | 0 | 0 |
| Maximum | 0 | 0 |
| Mean | 0 | 0 |
| Median | 0 | 0 |
| SD | 0 | 0 |
| SE of Mean | 0 | 0 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4257 |
| WMW Test U-Stat | -0.00542 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.502 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Cs137
Background Data: Cs137

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 62 | 9 |
| Minimum | 0.0113 | 0.053 |
| Maximum | 0.123 | 0.093 |
| Mean | 0.0628 | 0.0676 |
| Median | 0.061 | 0.0645 |
| SD | 0.0223 | 0.0107 |
| SE of Mean | 0.0024 | 0.00309 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4163 |
| WMW Test U-Stat | -1.03 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.848 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: I131
Background Data: I131

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 1 | 1 |
| Minimum | 0 | 0 |
| Maximum | 0 | 0 |
| Mean | 0 | 0 |
| Median | 0 | 0 |
| SD | 0 | 0 |
| SE of Mean | 0 | 0 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4257 |
| WMW Test U-Stat | -0.00542 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.502 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

User Selected Options

| | |
|---|---|
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: K40
Background Data: K40

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 49 | 10 |
| Minimum | 12.7 | 16.6 |
| Maximum | 20.7 | 19.9 |
| Mean | 16.48 | 17.82 |
| Median | 16.75 | 17.65 |
| SD | 1.702 | 0.963 |
| SE of Mean | 0.184 | 0.278 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4013 |
| WMW Test U-Stat | -2.65 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.996 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Pa234m
Background Data: Pa234m

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 65 | 4 |
| Number of Missing Values | 21 | 4 |
| Number of Distinct Observations | 45 | 4 |
| Minimum | 0 | 0.9 |
| Maximum | 4.8 | 1.6 |
| Mean | 1.631 | 1.15 |
| Median | 1.4 | 1.05 |
| SD | 0.905 | 0.31 |
| SE of Mean | 0.112 | 0.155 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 2323 |
| WMW Test U-Stat | 1.22 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.111 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Pb212
Background Data: Pb212

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 66 | 10 |
| Minimum | 0.518 | 0.89 |
| Maximum | 1.59 | 1.22 |
| Mean | 0.961 | 1.044 |
| Median | 0.965 | 1.04 |
| SD | 0.257 | 0.111 |
| SE of Mean | 0.0277 | 0.0322 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4134 |
| WMW Test U-Stat | -1.338 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.91 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Pb214
Background Data: Pb214

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 66 | 9 |
| Minimum | 0.524 | 0.84 |
| Maximum | 2.99 | 1.1 |
| Mean | 1.164 | 0.97 |
| Median | 1.045 | 0.985 |
| SD | 0.392 | 0.0899 |
| SE of Mean | 0.0422 | 0.026 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4398 |
| WMW Test U-Stat | 1.523 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.0639 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Ra223
Background Data: Ra223

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 72 | 9 |
| Number of Missing Values | 14 | 3 |
| Number of Distinct Observations | 60 | 9 |
| Minimum | 0.125 | 0.224 |
| Maximum | 0.449 | 0.344 |
| Mean | 0.26 | 0.272 |
| Median | 0.252 | 0.263 |
| SD | 0.0705 | 0.0383 |
| SE of Mean | 0.00831 | 0.0128 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 2894 |
| WMW Test U-Stat | -0.879 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.81 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

User Selected Options

| | |
|---|---|
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Ra226
Background Data: Ra226

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 69 | 11 |
| Minimum | 0 | 1.29 |
| Maximum | 6.04 | 2 |
| Mean | 2.037 | 1.702 |
| Median | 1.825 | 1.74 |
| SD | 0.881 | 0.209 |
| SE of Mean | 0.095 | 0.0603 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4364 |
| WMW Test U-Stat | 1.149 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.125 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

User Selected Options

| | |
|---|---|
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Ra228
Background Data: Ra228

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 63 | 11 |
| Minimum | 0.498 | 0.91 |
| Maximum | 1.58 | 1.26 |
| Mean | 0.983 | 1.08 |
| Median | 0.97 | 1.11 |
| SD | 0.249 | 0.11 |
| SE of Mean | 0.0269 | 0.0317 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4119 |
| WMW Test U-Stat | -1.501 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.933 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Th227
Background Data: Th227

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 62 | 5 |
| Number of Missing Values | 24 | 0 |
| Number of Distinct Observations | 47 | 5 |
| Minimum | -0.005 | 0.061 |
| Maximum | 0.32 | 0.14 |
| Mean | 0.0925 | 0.0972 |
| Median | 0.081 | 0.1 |
| SD | 0.0687 | 0.0343 |
| SE of Mean | 0.00873 | 0.0153 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 2078 |
| WMW Test U-Stat | -0.728 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.767 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Th228
Background Data: Th228

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 56 | 5 |
| Number of Missing Values | 30 | 0 |
| Number of Distinct Observations | 47 | 5 |
| Minimum | 0.48 | 0.98 |
| Maximum | 2.63 | 1.44 |
| Mean | 1.099 | 1.234 |
| Median | 1.01 | 1.21 |
| SD | 0.408 | 0.186 |
| SE of Mean | 0.0546 | 0.0833 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 1683 |
| WMW Test U-Stat | -1.42 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.922 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Th230
Background Data: Th230

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 56 | 5 |
| Number of Missing Values | 30 | 0 |
| Number of Distinct Observations | 50 | 5 |
| Minimum | 0.56 | 0.7 |
| Maximum | 3.71 | 1.56 |
| Mean | 1.423 | 1.098 |
| Median | 1.26 | 1.05 |
| SD | 0.647 | 0.31 |
| SE of Mean | 0.0864 | 0.139 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 1782 |
| WMW Test U-Stat | 1.183 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.118 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Th232
Background Data: Th232

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 56 | 5 |
| Number of Missing Values | 30 | 0 |
| Number of Distinct Observations | 46 | 5 |
| Minimum | 0.46 | 0.87 |
| Maximum | 1.76 | 1.12 |
| Mean | 0.952 | 1.036 |
| Median | 0.895 | 1.09 |
| SD | 0.295 | 0.104 |
| SE of Mean | 0.0395 | 0.0463 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 1689 |
| WMW Test U-Stat | -1.262 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.897 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Th234
Background Data: Th234

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 72 | 9 |
| Number of Missing Values | 14 | 3 |
| Number of Distinct Observations | 51 | 9 |
| Minimum | 0 | 0.32 |
| Maximum | 4.24 | 0.88 |
| Mean | 0.928 | 0.577 |
| Median | 0.67 | 0.56 |
| SD | 0.682 | 0.202 |
| SE of Mean | 0.0804 | 0.0672 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 3068 |
| WMW Test U-Stat | 1.736 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.0413 |

Conclusion with Alpha = 0.05

Reject H0, Conclude Site > Background
P-Value < alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: Tl208
Background Data: Tl208

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 86 | 12 |
| Number of Distinct Observations | 78 | 12 |
| Minimum | 0.158 | 0.285 |
| Maximum | 0.475 | 0.394 |
| Mean | 0.305 | 0.339 |
| Median | 0.303 | 0.329 |
| SD | 0.0812 | 0.0348 |
| SE of Mean | 0.00875 | 0.01 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4124 |
| WMW Test U-Stat | -1.447 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.926 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

User Selected Options

| | |
|---|---|
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: U234
Background Data: U234

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 56 | 5 |
| Number of Missing Values | 30 | 0 |
| Number of Distinct Observations | 51 | 5 |
| Minimum | 0.42 | 0.6 |
| Maximum | 7.17 | 1.22 |
| Mean | 1.329 | 0.91 |
| Median | 1.08 | 0.88 |
| SD | 1.028 | 0.243 |
| SE of Mean | 0.137 | 0.109 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 1775 |
| WMW Test U-Stat | 1.012 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.156 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: U235
Background Data: U235

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 85 | 12 |
| Number of Missing Values | 1 | 0 |
| Number of Distinct Observations | 67 | 10 |
| Minimum | 0.009 | 0.059 |
| Maximum | 0.37 | 0.123 |
| Mean | 0.104 | 0.0981 |
| Median | 0.099 | 0.102 |
| SD | 0.0635 | 0.0185 |
| SE of Mean | 0.00688 | 0.00533 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 4143 |
| WMW Test U-Stat | -0.252 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.599 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)

Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs

| | |
|---|---|
| User Selected Options | |
| From File | Milan_Metals.wst |
| Full Precision | OFF |
| Confidence Coefficient | 95% |
| Substantial Difference | 0 |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median |

Area of Concern Data: U238
Background Data: U238

Raw Statistics

| | Site | Background |
|---|---|---|
| Number of Valid Observations | 56 | 5 |
| Number of Missing Values | 30 | 0 |
| Number of Distinct Observations | 52 | 5 |
| Minimum | 0.47 | 0.73 |
| Maximum | 6.42 | 1.21 |
| Mean | 1.369 | 0.95 |
| Median | 1.095 | 0.89 |
| SD | 0.932 | 0.207 |
| SE of Mean | 0.125 | 0.0925 |

Wilcoxon-Mann-Whitney (WMW) Test

H0: Mean/Median of Site or AOC <= Mean/Median of Background

| | |
|---|---|
| Site Rank Sum W-Stat | 1779 |
| WMW Test U-Stat | 1.104 |
| WMW Critical Value (0.050) | 1.645 |
| P-Value | 0.135 |

Conclusion with Alpha = 0.05
Do Not Reject H0, Conclude Site <= Background
P-Value >= alpha (0.05)