STAGE II ENVIRONMENTAL RISK CHARACTERIZATON

Former Gloucester Manufactured Gas Plant Facility
Gloucester, Massachusetts

Prepared for:

National Grid
40 Sylvan Road
Waltham, MA 02451

Prepared by:

AMEC Earth and Environmental, Inc.
2 Robbins Road
Westford, MA 01886

July 2011

AMEC Project No. 776860002

Attachment C

Output from Statistical Tests

Output from Regression Analysis

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is LCSW1
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	95.000000
Site	3	25.000000

Mann-Whitney U test statistic = 17.000000
Probability is 0.885234
Chi-square approximation = 0.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N0E5
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	96.000000
Site	3	24.000000

Mann-Whitney U test statistic = 18.000000
Probability is 1.000000
Chi-square approximation = 0.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N10E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	84.000000
Site	3	36.000000

Mann-Whitney U test statistic = 6.000000
Probability is 0.083265
Chi-square approximation = 3.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N11E33
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	79.000000
Site	3	41.000000

Mann-Whitney U test statistic = 1.000000
Probability is 0.014138
Chi-square approximation = 6.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N12E19
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	96.000000
Site	3	24.000000

Mann-Whitney U test statistic = 18.000000
Probability is 1.000000
Chi-square approximation = 0.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N14E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	93.000000
Site	3	27.000000

Mann-Whitney U test statistic = 15.000000
Probability is 0.664442
Chi-square approximation = 0.188172 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N17E6
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	87.500000
Site	3	32.500000

Mann-Whitney U test statistic = 9.500000
Probability is 0.219460
Chi-square approximation = 1.507901 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN1E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	79.000000
Site	3	41.000000

Mann-Whitney U test statistic = 1.000000
Probability is 0.014138
Chi-square approximation = 6.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009375
Chi-square approximation = 6.750000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	84.000000
Site	3	36.000000

Mann-Whitney U test statistic = 6.000000
Probability is 0.083265
Chi-square approximation = 3.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN3E28
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009375
Chi-square approximation = 6.750000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N3E31
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	83.000000
Site	3	37.000000

Mann-Whitney U test statistic = 5.000000
Probability is 0.060142
Chi-square approximation = 3.533453 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	81.500000
Site	3	38.500000

Mann-Whitney U test statistic = 3.500000
Probability is 0.036192
Chi-square approximation = 4.388044 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009312
Chi-square approximation = 6.762075 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases

Dependent variable is N5E2
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	82.500000
Site	3	37.500000

Mann-Whitney U test statistic = 4.500000
Probability is 0.051140
Chi-square approximation = 3.803667 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	84.000000
Site	3	36.000000

Mann-Whitney U test statistic = 6.000000
Probability is 0.083265
Chi-square approximation = 3.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	93.500000
Site	3	26.500000

Mann-Whitney U test statistic = 15.500000
Probability is 0.717975
Chi-square approximation = 0.130441 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN7E0
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	100.000000
Site	3	20.000000

Mann-Whitney U test statistic = 22.000000
Probability is 0.563703
Chi-square approximation = 0.333333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N7E7
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	79.000000
Site	3	41.000000

Mann-Whitney U test statistic = 1.000000
Probability is 0.014138
Chi-square approximation = 6.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N8E24
Grouping variable is SITEREF$

Group	Count	Rank Sum

Group	Count	Rank Sum
Ref	12	94.000000
Site	3	26.000000

Mann-Whitney U test statistic = 16.000000
Probability is 0.772830
Chi-square approximation = 0.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N9E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	91.000000
Site	3	29.000000

Mann-Whitney U test statistic = 13.000000
Probability is 0.470486
Chi-square approximation = 0.520833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is LCSW1
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	80.000000
Site	3	40.000000

Mann-Whitney U test statistic = 2.000000
Probability is 0.020353
Chi-square approximation = 5.381382 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N0E5
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	107.000000
Site	3	13.000000

Mann-Whitney U test statistic = 29.000000
Probability is 0.108815
Chi-square approximation = 2.571342 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N10E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	102.000000
Site	3	18.000000

Mann-Whitney U test statistic = 24.000000
Probability is 0.384773
Chi-square approximation = 0.755396 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N11E33
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009123
Chi-square approximation = 6.798561 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N12E19
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009123
Chi-square approximation = 6.798561 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N14E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	87.500000
Site	3	32.500000

Mann-Whitney U test statistic = 9.500000
Probability is 0.217806
Chi-square approximation = 1.518769 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N17E6
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	114.000000
Site	3	6.000000

Mann-Whitney U test statistic = 36.000000
Probability is 0.008875
Chi-square approximation = 6.847826 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN1E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	80.000000
Site	3	40.000000

Mann-Whitney U test statistic = 2.000000
Probability is 0.020466
Chi-square approximation = 5.371703 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	79.000000
Site	3	41.000000

Mann-Whitney U test statistic = 1.000000
Probability is 0.013795
Chi-square approximation = 6.064149 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009123
Chi-square approximation = 6.798561 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN3E28
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	82.000000
Site	3	38.000000

Mann-Whitney U test statistic = 4.000000
Probability is 0.042376
Chi-square approximation = 4.120120 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N3E31
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	90.000000
Site	3	30.000000

Mann-Whitney U test statistic = 12.000000
Probability is 0.384773
Chi-square approximation = 0.755396 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009123
Chi-square approximation = 6.798561 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009123
Chi-square approximation = 6.798561 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases

Dependent variable is N5E2
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	95.500000
Site	3	24.500000

Mann-Whitney U test statistic = 17.500000
Probability is 0.942209
Chi-square approximation = 0.005255 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	79.000000
Site	3	41.000000

Mann-Whitney U test statistic = 1.000000
Probability is 0.013795
Chi-square approximation = 6.064149 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009123
Chi-square approximation = 6.798561 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN7E0
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	107.500000
Site	3	12.500000

Mann-Whitney U test statistic = 29.500000
Probability is 0.094252
Chi-square approximation = 2.800212 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N7E7
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	109.500000
Site	3	10.500000

Mann-Whitney U test statistic = 31.500000
Probability is 0.050310
Chi-square approximation = 3.831081 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N8E24
Grouping variable is SITEREF$

Group	Count	Rank Sum

Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009123
Chi-square approximation = 6.798561 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N9E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	84.000000
Site	3	36.000000

Mann-Whitney U test statistic = 6.000000
Probability is 0.082163
Chi-square approximation = 3.021583 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is LCSW1
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	98.000000
Site	3	22.000000

Mann-Whitney U test statistic = 20.000000
Probability is 0.772632
Chi-square approximation = 0.083482 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N0E5
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	100.000000
Site	3	20.000000

Mann-Whitney U test statistic = 22.000000
Probability is 0.563354
Chi-square approximation = 0.333930 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N10E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	85.000000
Site	3	35.000000

Mann-Whitney U test statistic = 7.000000
Probability is 0.112030
Chi-square approximation = 2.525343 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N11E33
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	105.000000
Site	3	15.000000

Mann-Whitney U test statistic = 27.000000
Probability is 0.193533
Chi-square approximation = 1.690519 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N12E19
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	107.000000
Site	3	13.000000

Mann-Whitney U test statistic = 29.000000
Probability is 0.112030
Chi-square approximation = 2.525343 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N14E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	89.000000
Site	3	31.000000

Mann-Whitney U test statistic = 11.000000
Probability is 0.311889
Chi-square approximation = 1.022659 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N17E6
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	103.000000
Site	3	17.000000

Mann-Whitney U test statistic = 25.000000
Probability is 0.311889
Chi-square approximation = 1.022659 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN1E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	105.000000
Site	3	15.000000

Mann-Whitney U test statistic = 27.000000
Probability is 0.193533
Chi-square approximation = 1.690519 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	103.000000
Site	3	17.000000

Mann-Whitney U test statistic = 25.000000
Probability is 0.311889
Chi-square approximation = 1.022659 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	105.000000
Site	3	15.000000

Mann-Whitney U test statistic = 27.000000
Probability is 0.193533
Chi-square approximation = 1.690519 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN3E28
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	102.000000
Site	3	18.000000

Mann-Whitney U test statistic = 24.000000
Probability is 0.386052
Chi-square approximation = 0.751342 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N3E31
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	101.000000
Site	3	19.000000

Mann-Whitney U test statistic = 23.000000
Probability is 0.470090
Chi-square approximation = 0.521765 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	105.000000
Site	3	15.000000

Mann-Whitney U test statistic = 27.000000
Probability is 0.193533
Chi-square approximation = 1.690519 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	106.000000
Site	3	14.000000

Mann-Whitney U test statistic = 28.000000
Probability is 0.148552
Chi-square approximation = 2.087060 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases

Dependent variable is N5E2
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	81.000000
Site	3	39.000000

Mann-Whitney U test statistic = 3.000000
Probability is 0.030235
Chi-square approximation = 4.695885 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	105.000000
Site	3	15.000000

Mann-Whitney U test statistic = 27.000000
Probability is 0.193533
Chi-square approximation = 1.690519 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	101.000000
Site	3	19.000000

Mann-Whitney U test statistic = 23.000000
Probability is 0.470090
Chi-square approximation = 0.521765 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN7E0
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	96.000000
Site	3	24.000000

Mann-Whitney U test statistic = 18.000000
Probability is 1.000000
Chi-square approximation = 0.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N7E7
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	95.000000
Site	3	25.000000

Mann-Whitney U test statistic = 17.000000
Probability is 0.885132
Chi-square approximation = 0.020871 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N8E24
Grouping variable is SITEREF$

Group	Count	Rank Sum

Ref	12	109.000000
Site	3	11.000000

Mann-Whitney U test statistic = 31.000000
Probability is 0.060372
Chi-square approximation = 3.527132 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N9E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	95.000000
Site	3	25.000000

Mann-Whitney U test statistic = 17.000000
Probability is 0.885132
Chi-square approximation = 0.020871 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases□□
Dependent variable is LCSW1□
□Grouping variable is SITEREF$□□

Group	Count	Rank Sum□□
Ref	12	98.000000□□
Site	3	22.000000□□

Mann-Whitney U test statistic = 20.000000□
Probability is 0.772830□□
Chi-square approximation = 0.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N0E5
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	94.000000
Site	3	26.000000

Mann-Whitney U test statistic = 16.000000
Probability is 0.772830
Chi-square approximation = 0.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N10E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	102.000000
Site	3	18.000000

Mann-Whitney U test statistic = 24.000000
Probability is 0.386476
Chi-square approximation = 0.750000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N11E33
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	88.000000
Site	3	32.000000

Mann-Whitney U test statistic = 10.000000
Probability is 0.248213
Chi-square approximation = 1.333333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N12E19
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	86.000000
Site	3	34.000000

Mann-Whitney U test statistic = 8.000000
Probability is 0.148915
Chi-square approximation = 2.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N14E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	102.000000
Site	3	18.000000

Mann-Whitney U test statistic = 24.000000
Probability is 0.386476
Chi-square approximation = 0.750000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N17E6
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	93.000000
Site	3	27.000000

Mann-Whitney U test statistic = 15.000000
Probability is 0.665006
Chi-square approximation = 0.187500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN1E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	91.000000
Site	3	29.000000

Mann-Whitney U test statistic = 13.000000
Probability is 0.470486
Chi-square approximation = 0.520833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	91.000000
Site	3	29.000000

Mann-Whitney U test statistic = 13.000000
Probability is 0.470486
Chi-square approximation = 0.520833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	93.000000
Site	3	27.000000

Mann-Whitney U test statistic = 15.000000
Probability is 0.665006
Chi-square approximation = 0.187500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN3E28
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	93.000000
Site	3	27.000000

Mann-Whitney U test statistic = 15.000000
Probability is 0.665006
Chi-square approximation = 0.187500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N3E31
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	95.000000
Site	3	25.000000

Mann-Whitney U test statistic = 17.000000
Probability is 0.885234
Chi-square approximation = 0.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	90.000000
Site	3	30.000000

Mann-Whitney U test statistic = 12.000000
Probability is 0.386476
Chi-square approximation = 0.750000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	87.000000
Site	3	33.000000

Mann-Whitney U test statistic = 9.000000
Probability is 0.193931
Chi-square approximation = 1.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases

Dependent variable is N5E2
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	108.000000
Site	3	12.000000

Mann-Whitney U test statistic = 30.000000
Probability is 0.083265
Chi-square approximation = 3.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	90.000000
Site	3	30.000000

Mann-Whitney U test statistic = 12.000000
Probability is 0.386476
Chi-square approximation = 0.750000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	99.000000
Site	3	21.000000

Mann-Whitney U test statistic = 21.000000
Probability is 0.665006
Chi-square approximation = 0.187500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN7E0
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	98.000000
Site	3	22.000000

Mann-Whitney U test statistic = 20.000000
Probability is 0.772830
Chi-square approximation = 0.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N7E7
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	101.000000
Site	3	19.000000

Mann-Whitney U test statistic = 23.000000
Probability is 0.470486
Chi-square approximation = 0.520833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N8E24
Grouping variable is SITEREF$

Group	Count	Rank Sum

Ref	12	91.000000
Site	3	29.000000

Mann-Whitney U test statistic = 13.000000
Probability is 0.470486
Chi-square approximation = 0.520833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N9E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	100.000000
Site	3	20.000000

Mann-Whitney U test statistic = 22.000000
Probability is 0.563703
Chi-square approximation = 0.333333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases□□
Dependent variable is LCSW1□□
Grouping variable is SITEREF$□□

Group	Count	Rank Sum□□
Ref	12	108.000000□□
Site	3	12.000000□□

Mann-Whitney U test statistic = 30.000000□□
Probability is 0.083265□□
Chi-square approximation = 3.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N0E5
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	81.000000
Site	3	39.000000

Mann-Whitney U test statistic = 3.000000
Probability is 0.030383
Chi-square approximation = 4.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N10E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	81.000000
Site	3	39.000000

Mann-Whitney U test statistic = 3.000000
Probability is 0.030383
Chi-square approximation = 4.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N11E33
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	107.000000
Site	3	13.000000

Mann-Whitney U test statistic = 29.000000
Probability is 0.112351
Chi-square approximation = 2.520833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N12E19
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	110.000000
Site	3	10.000000

Mann-Whitney U test statistic = 32.000000
Probability is 0.043308
Chi-square approximation = 4.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N14E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	94.000000
Site	3	26.000000

Mann-Whitney U test statistic = 16.000000
Probability is 0.772830
Chi-square approximation = 0.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N17E6
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	78.000000
Site	3	42.000000

Mann-Whitney U test statistic = 0.000000
Probability is 0.009375
Chi-square approximation = 6.750000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN1E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	106.000000
Site	3	14.000000

Mann-Whitney U test statistic = 28.000000
Probability is 0.148915
Chi-square approximation = 2.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	100.000000
Site	3	20.000000

Mann-Whitney U test statistic = 22.000000
Probability is 0.563703
Chi-square approximation = 0.333333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	110.000000
Site	3	10.000000

Mann-Whitney U test statistic = 32.000000
Probability is 0.043308
Chi-square approximation = 4.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN3E28
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	95.000000
Site	3	25.000000

Mann-Whitney U test statistic = 17.000000
Probability is 0.885234
Chi-square approximation = 0.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N3E31
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	89.000000
Site	3	31.000000

Mann-Whitney U test statistic = 11.000000
Probability is 0.312321
Chi-square approximation = 1.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	111.000000
Site	3	9.000000

Mann-Whitney U test statistic = 33.000000
Probability is 0.030383
Chi-square approximation = 4.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	110.000000
Site	3	10.000000

Mann-Whitney U test statistic = 32.000000
Probability is 0.043308
Chi-square approximation = 4.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases

Dependent variable is N5E2
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	85.000000
Site	3	35.000000

Mann-Whitney U test statistic = 7.000000
Probability is 0.112351
Chi-square approximation = 2.520833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	106.000000
Site	3	14.000000

Mann-Whitney U test statistic = 28.000000
Probability is 0.148915
Chi-square approximation = 2.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	110.000000
Site	3	10.000000

Mann-Whitney U test statistic = 32.000000
Probability is 0.043308
Chi-square approximation = 4.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN7E0
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	86.000000
Site	3	34.000000

Mann-Whitney U test statistic = 8.000000
Probability is 0.148915
Chi-square approximation = 2.083333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N7E7
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	103.000000
Site	3	17.000000

Mann-Whitney U test statistic = 25.000000
Probability is 0.312321
Chi-square approximation = 1.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N8E24
Grouping variable is SITEREF$

Group	Count	Rank Sum

Group	Count	Rank Sum
Ref	12	111.000000
Site	3	9.000000

Mann-Whitney U test statistic = 33.000000
Probability is 0.030383
Chi-square approximation = 4.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N9E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	103.000000
Site	3	17.000000

Mann-Whitney U test statistic = 25.000000
Probability is 0.312321
Chi-square approximation = 1.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases□□
Dependent variable is LCSW1□
Grouping variable is SITEREF$□□

Group	Count	Rank Sum□□
Ref	12	103.500000□□
Site	3	16.500000□□

Mann-Whitney U test statistic = 25.500000□□
Probability is 0.258504□□
Chi-square approximation = 1.276751 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N0E5
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	91.000000
Site	3	29.000000

Mann-Whitney U test statistic = 13.000000
Probability is 0.445009
Chi-square approximation = 0.583333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N10E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	104.500000
Site	3	15.500000

Mann-Whitney U test statistic = 26.500000
Probability is 0.200337
Chi-square approximation = 1.639916 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N11E33
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	80.000000
Site	3	40.000000

Mann-Whitney U test statistic = 2.000000
Probability is 0.016862
Chi-square approximation = 5.710644 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N12E19
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	99.500000
Site	3	20.500000

Mann-Whitney U test statistic = 21.500000
Probability is 0.592533
Chi-square approximation = 0.286406 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N14E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	102.000000
Site	3	18.000000

Mann-Whitney U test statistic = 24.000000
Probability is 0.361786
Chi-square approximation = 0.831683 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N17E6
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	99.000000
Site	3	21.000000

Mann-Whitney U test statistic = 21.000000
Probability is 0.653795
Chi-square approximation = 0.201149 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN1E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	84.000000
Site	3	36.000000

Mann-Whitney U test statistic = 6.000000
Probability is 0.067343
Chi-square approximation = 3.346613 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	83.500000
Site	3	36.500000

Mann-Whitney U test statistic = 5.500000
Probability is 0.056702
Chi-square approximation = 3.631308 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	79.500000
Site	3	40.500000

Mann-Whitney U test statistic = 1.500000
Probability is 0.012924
Chi-square approximation = 6.179475 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN3E28
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	84.000000
Site	3	36.000000

Mann-Whitney U test statistic = 6.000000
Probability is 0.067343
Chi-square approximation = 3.346613 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N3E31
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	83.000000
Site	3	37.000000

Mann-Whitney U test statistic = 5.000000
Probability is 0.047720
Chi-square approximation = 3.919814 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	80.500000
Site	3	39.500000

Mann-Whitney U test statistic = 2.500000
Probability is 0.020491
Chi-square approximation = 5.369572 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	79.500000
Site	3	40.500000

Mann-Whitney U test statistic = 1.500000
Probability is 0.012924
Chi-square approximation = 6.179475 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases

Dependent variable is N5E2
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	109.000000
Site	3	11.000000

Mann-Whitney U test statistic = 31.000000
Probability is 0.051957
Chi-square approximation = 3.777139 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	79.000000
Site	3	41.000000

Mann-Whitney U test statistic = 1.000000
Probability is 0.010885
Chi-square approximation = 6.483975 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	102.000000
Site	3	18.000000

Mann-Whitney U test statistic = 24.000000
Probability is 0.359877
Chi-square approximation = 0.838323 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN7E0
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	97.500000
Site	3	22.500000

Mann-Whitney U test statistic = 19.500000
Probability is 0.822229
Chi-square approximation = 0.050481 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N7E7
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	110.000000
Site	3	10.000000

Mann-Whitney U test statistic = 32.000000
Probability is 0.036350
Chi-square approximation = 4.380588 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N8E24
Grouping variable is SITEREF$

Group	Count	Rank Sum

Ref	12	80.000000
Site	3	40.000000

Mann-Whitney U test statistic = 2.000000
Probability is 0.016967
Chi-square approximation = 5.699745 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N9E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	99.000000
Site	3	21.000000

Mann-Whitney U test statistic = 21.000000
Probability is 0.653795
Chi-square approximation = 0.201149 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is LCSW1
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	97.000000
Site	3	23.000000

Mann-Whitney U test statistic = 19.000000
Probability is 0.885234
Chi-square approximation = 0.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N0E5
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	93.000000
Site	3	27.000000

Mann-Whitney U test statistic = 15.000000
Probability is 0.665006
Chi-square approximation = 0.187500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N10E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	101.000000
Site	3	19.000000

Mann-Whitney U test statistic = 23.000000
Probability is 0.470486
Chi-square approximation = 0.520833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N11E33
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	84.000000
Site	3	36.000000

Mann-Whitney U test statistic = 6.000000
Probability is 0.083265
Chi-square approximation = 3.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N12E19
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	87.000000
Site	3	33.000000

Mann-Whitney U test statistic = 9.000000
Probability is 0.193931
Chi-square approximation = 1.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N14E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	103.000000
Site	3	17.000000

Mann-Whitney U test statistic = 25.000000
Probability is 0.312321
Chi-square approximation = 1.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N17E6
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	92.000000
Site	3	28.000000

Mann-Whitney U test statistic = 14.000000
Probability is 0.563703
Chi-square approximation = 0.333333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN1E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	87.000000
Site	3	33.000000

Mann-Whitney U test statistic = 9.000000
Probability is 0.193931
Chi-square approximation = 1.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	87.000000
Site	3	33.000000

Mann-Whitney U test statistic = 9.000000
Probability is 0.193931
Chi-square approximation = 1.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN2E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	88.000000
Site	3	32.000000

Mann-Whitney U test statistic = 10.000000
Probability is 0.248213
Chi-square approximation = 1.333333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN3E28
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	89.000000
Site	3	31.000000

Mann-Whitney U test statistic = 11.000000
Probability is 0.312321
Chi-square approximation = 1.020833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N3E31
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	90.000000
Site	3	30.000000

Mann-Whitney U test statistic = 12.000000
Probability is 0.386476
Chi-square approximation = 0.750000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E11
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	87.000000
Site	3	33.000000

Mann-Whitney U test statistic = 9.000000
Probability is 0.193931
Chi-square approximation = 1.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N5E21
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	81.000000
Site	3	39.000000

Mann-Whitney U test statistic = 3.000000
Probability is 0.030383
Chi-square approximation = 4.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases

Dependent variable is N5E2
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	111.000000
Site	3	9.000000

Mann-Whitney U test statistic = 33.000000
Probability is 0.030383
Chi-square approximation = 4.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	85.000000
Site	3	35.000000

Mann-Whitney U test statistic = 7.000000
Probability is 0.112351
Chi-square approximation = 2.520833 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN6E15
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	99.000000
Site	3	21.000000

Mann-Whitney U test statistic = 21.000000
Probability is 0.665006
Chi-square approximation = 0.187500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is NN7E0
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	96.000000
Site	3	24.000000

Mann-Whitney U test statistic = 18.000000
Probability is 1.000000
Chi-square approximation = 0.000000 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N7E7
Grouping variable is SITEREF$

Group	Count	Rank Sum
Ref	12	112.000000
Site	3	8.000000

Mann-Whitney U test statistic = 34.000000
Probability is 0.020921
Chi-square approximation = 5.333333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N8E24
Grouping variable is SITEREF$

Group	Count	Rank Sum

Ref 12 87.000000
Site 3 33.000000
Mann-Whitney U test statistic = 9.000000
Probability is 0.193931
Chi-square approximation = 1.687500 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
Dependent variable is N9E15
Grouping variable is SITEREF$

Group Count Rank Sum

Ref 12 100.000000
Site 3 20.000000
Mann-Whitney U test statistic = 22.000000
Probability is 0.563703
Chi-square approximation = 0.333333 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 15 cases
□□Dependent variable is LCSW1SITE□
□Grouping variable is SITEREF$□
□Group Count Rank Sum□
□Ref 12 97.000000□
□Site 3 23.000000□□
Mann-Whitney U test statistic = 19.000000□□
Probability is 0.885234□□
Chi-square approximation = 0.020833 with 1 df

Count

52 cases and 33 variables processed and saved.

SYSTAT Rectangular file W:\Projects\\National Grid\Gloucester Harbor\Deliverables\Final ERC Report\Feb 2010 Final ERC\\New data from Anchor QEA\metals.SYD,
created Mon Mar 15, 2010 at 14:38:57, contains variables:

REFSITE$	ASREFSITE	CRREFSITE	CUREFSITE	PBREFSITE	HGREFSITE
ZNREFSITE	BAREFSITE	CDREFSITE	NIREFSITE	SEREFSITE	AGREFSITE
REFNOMR$	ASREFNOMR	CRREFNOMR	CUREFNOMR	PBREFNOMR	HGREFNOMR
ZNREFNOMR	REFMR$	ASREFMR	CRREFMR	CUREFMR	PBREFMR
HGREFMR	ZNREFMR	MRNOMR$	ASMRNOMR	CRMRNOMR	CUMRNOMR
PBMRNOMR	HGMRNOMR	ZNMRNOMR			

Categorical values encountered during processing are:
REFSITE$ (2 levels)
Reference, Site

Kruskal-Wallis One-Way Analysis of Variance for 52 cases
Dependent variable is ASREFSITE - Arsenic in study area sediment compared to arsenic in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	8	176.000
Site	44	1202.000

Mann-Whitney U test statistic = 140.000
Probability is 0.360
Chi-square approximation = 0.839 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 52 cases
Dependent variable is CRREFSITE - Chromium in study area sediment compared to chromium in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	8	190.500
Site	44	1187.500

Mann-Whitney U test statistic = 154.500
Probability is 0.585
Chi-square approximation = 0.297 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 37 cases
Dependent variable is CUREFSITE - Copper in study area sediment compared to copper in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	4	33.500
Site	33	669.500

Mann-Whitney U test statistic = 23.500
Probability is 0.038
Chi-square approximation = 4.323 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 52 cases
Dependent variable is PBREFSITE- Lead in study area sediment compared to lead in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	8	72.000
Site	44	1306.000

Mann-Whitney U test statistic = 36.000
Probability is 0.000
Chi-square approximation = 12.610 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 52 cases
Dependent variable is HGREFSITE- Mercury in study area sediment compared to Mercury in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	8	88.500
Site	44	1289.500

Mann-Whitney U test statistic = 52.500
Probability is 0.002
Chi-square approximation = 9.827 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 37 cases
Dependent variable is ZNREFSITE- Zinc in study area sediment compared to zinc in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	4	61.000
Site	33	642.000

Mann-Whitney U test statistic = 51.000
Probability is 0.463
Chi-square approximation = 0.538 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 39 cases
Dependent variable is BAREFSITE- Barium in study area sediment compared to barium in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	8	87.500
Site	31	692.500

Mann-Whitney U test statistic = 51.500
Probability is 0.012
Chi-square approximation = 6.362 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 39 cases
Dependent variable is CDREFSITE- Cadmium in study area sediment compared to cadmium in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	8	149.000
Site	31	631.000

Mann-Whitney U test statistic = 113.000
Probability is 0.701
Chi-square approximation = 0.147 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 25 cases
Dependent variable is NIREFSITE- Nickel in study area sediment compared to nickel in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	4	55.500
Site	21	269.500

Mann-Whitney U test statistic = 45.500
Probability is 0.791
Chi-square approximation = 0.070 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 40 cases
Dependent variable is SEREFSITE- Selenium in study area sediment compared to selenium in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	8	142.500
Site	32	677.500

Mann-Whitney U test statistic = 106.500
Probability is 0.465
Chi-square approximation = 0.534 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 40 cases
Dependent variable is AGREFSITE- Silver in study area sediment compared to silver in local conditions sediment
Grouping variable is REFSITE$

Group	Count	Rank Sum
Reference	8	128.000
Site	32	692.000

Mann-Whitney U test statistic = 92.000
Probability is 0.222
Chi-square approximation = 1.492 with 1 df

Categorical values encountered during processing are:
REFNOMR$ (2 levels)
No Marine RW, Reference

Kruskal-Wallis One-Way Analysis of Variance for 44 cases
Dependent variable is ASREFNOMR - - Arsenic in study area sediment compared to arsenic in local conditions sediment
Excluding marine railway
Grouping variable is REFNOMR$

Group	Count	Rank Sum
No Marine RW	36	814.000
Reference	8	176.000

Mann-Whitney U test statistic = 148.000
Probability is 0.903
Chi-square approximation = 0.015 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 44 cases
Dependent variable is CRREFNOMR- - Chromium in study area sediment compared to chromium in local conditions sediment
Excluding marine railway
Grouping variable is REFNOMR$

Group	Count	Rank Sum
No Marine RW	36	824.000
Reference	8	166.000

Mann-Whitney U test statistic = 158.000
Probability is 0.670
Chi-square approximation = 0.182 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 30 cases
Dependent variable is CUREFNOMR- - Copper in study area sediment compared to copper in local conditions sediment
Excluding marine railway
Grouping variable is REFNOMR$

Group	Count	Rank Sum
No Marine RW	26	431.500
Reference	4	33.500

Mann-Whitney U test statistic = 80.500
Probability is 0.082
Chi-square approximation = 3.025 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 44 cases
Dependent variable is PBREFNOMR- - Lead in study area sediment compared to lead in local conditions sediment
Excluding marine railway
Grouping variable is REFNOMR$

Group	Count	Rank Sum
No Marine RW	36	918.000
Reference	8	72.000

Mann-Whitney U test statistic = 252.000
Probability is 0.001
Chi-square approximation = 10.804 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 44 cases
Dependent variable is HGREFNOMR- - Mercury in study area sediment compared to mercury in local conditions sediment
Excluding marine railway
Grouping variable is REFNOMR$

Group	Count	Rank Sum
No Marine RW	36	901.500
Reference	8	88.500

Mann-Whitney U test statistic = 235.500
Probability is 0.005
Chi-square approximation = 7.771 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 30 cases
Dependent variable is ZNREFNOMR- - Zinc in study area sediment compared to zinc in local conditions sediment
Excluding marine railway
Grouping variable is REFNOMR$

Group	Count	Rank Sum
No Marine RW	26	404.000
Reference	4	61.000

Mann-Whitney U test statistic = 53.000
Probability is 0.951
Chi-square approximation = 0.004 with 1 df

Categorical values encountered during processing are:
REFMR$ (2 levels)
Marine RW, Reference

Kruskal-Wallis One-Way Analysis of Variance for 16 cases
Dependent variable is ASREFMR- - Arsenic in marine railway sediment compared to arsenic in local conditions sediment
Grouping variable is REFMR$

Group	Count	Rank Sum
Marine RW	8	100.000
Reference	8	36.000

Mann-Whitney U test statistic = 64.000

Probability is 0.001
Chi-square approximation = 11.311 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 16 cases
Dependent variable is CRREFMR- Chromium in marine railway sediment compared to chromium in local conditions sediment
Grouping variable is REFMR$

Group	Count	Rank Sum
Marine RW	8	75.500
Reference	8	60.500

Mann-Whitney U test statistic = 39.500
Probability is 0.429
Chi-square approximation = 0.626 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 11 cases
Dependent variable is CUREFMR- Copper in marine railway sediment compared to copper in local conditions sediment
Grouping variable is REFMR$

Group	Count	Rank Sum
Marine RW	7	56.000
Reference	4	10.000

Mann-Whitney U test statistic = 28.000
Probability is 0.008
Chi-square approximation = 7.032 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 16 cases
Dependent variable is PBREFMR- Lead in marine railway sediment compared to lead in local conditions sediment
Grouping variable is REFMR$

Group	Count	Rank Sum
Marine RW	8	100.000
Reference	8	36.000

Mann-Whitney U test statistic = 64.000
Probability is 0.001
Chi-square approximation = 11.311 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 16 cases
Dependent variable is HGREFMR- Mercury in marine railway sediment compared to mercury in local conditions sediment
Grouping variable is REFMR$

Group	Count	Rank Sum
Marine RW	8	100.000
Reference	8	36.000

Mann-Whitney U test statistic = 64.000
Probability is 0.001
Chi-square approximation = 11.311 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 11 cases
Dependent variable is ZNREFMR- Zinc in marine railway sediment compared to zinc in local conditions sediment
Grouping variable is REFMR$

Group	Count	Rank Sum
Marine RW	7	56.000
Reference	4	10.000

Mann-Whitney U test statistic = 28.000
Probability is 0.008
Chi-square approximation = 7.032 with 1 df

Categorical values encountered during processing are:
MRNOMR$ (2 levels)
Marine RW, No Marine RW

Kruskal-Wallis One-Way Analysis of Variance for 44 cases
Dependent variable is ASMRNOMR - Arsenic in marine railway sediment compared to arsenic in remaning study area sediment
Grouping variable is MRNOMR$

Group	Count	Rank Sum
Marine RW	8	320.000
No Marine RW	36	670.000

Mann-Whitney U test statistic = 284.000
Probability is 0.000
Chi-square approximation = 18.326 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 44 cases
Dependent variable is CRMRNOMR- Chromium in marine railway sediment compared to chromium in remaning study area sediment
Grouping variable is MRNOMR$

Group	Count	Rank Sum
Marine RW	8	191.500
No Marine RW	36	798.500

Mann-Whitney U test statistic = 155.500
Probability is 0.726
Chi-square approximation = 0.123 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 33 cases
Dependent variable is CUMRNOMR- Copper in marine railway sediment compared to copper in remaning study area sediment
Grouping variable is MRNOMR$

Group	Count	Rank Sum
Marine RW	7	210.000
No Marine RW	26	351.000

Mann-Whitney U test statistic = 182.000
Probability is 0.000
Chi-square approximation = 16.064 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 44 cases
Dependent variable is PBMRNOMR- Lead in marine railway sediment compared to lead in remaning study area sediment
Grouping variable is MRNOMR$

Group	Count	Rank Sum
Marine RW	8	316.000
No Marine RW	36	674.000

Mann-Whitney U test statistic = 280.000
Probability is 0.000
Chi-square approximation = 17.131 with 1 df

Kruskal-Wallis One-Way Analysis of Variance for 44 cases
Dependent variable is HGMRNOMR- Mercury in marine railway sediment compared to mercury in remaning study area sediment
Grouping variable is MRNOMR$

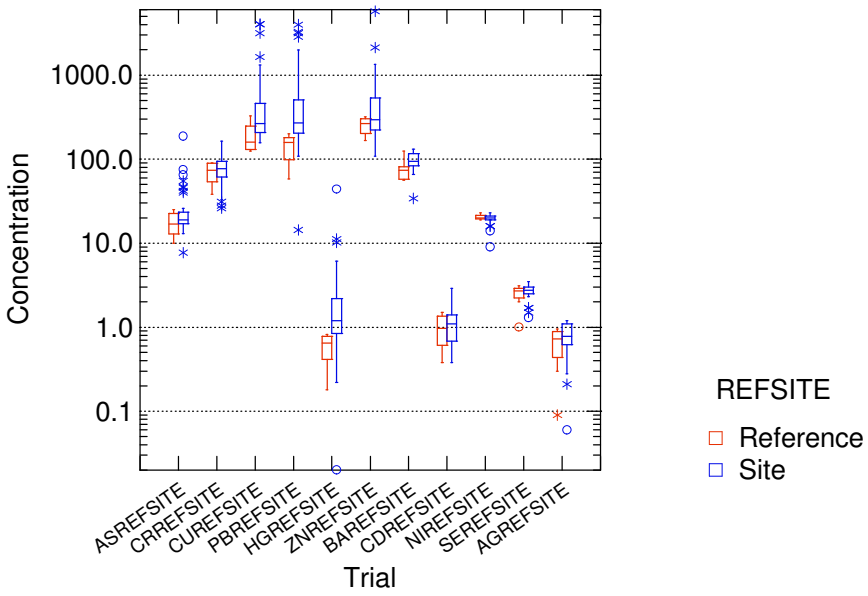
Group	Count	Rank Sum
Marine RW	8	318.500
No Marine RW	36	671.500

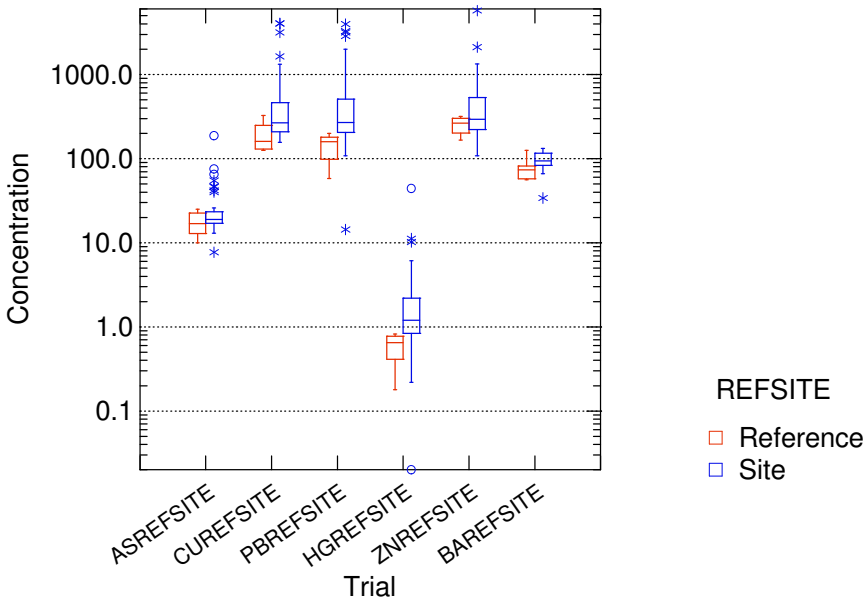
Mann-Whitney U test statistic = 282.500
Probability is 0.000
Chi-square approximation = 17.799 with 1 df

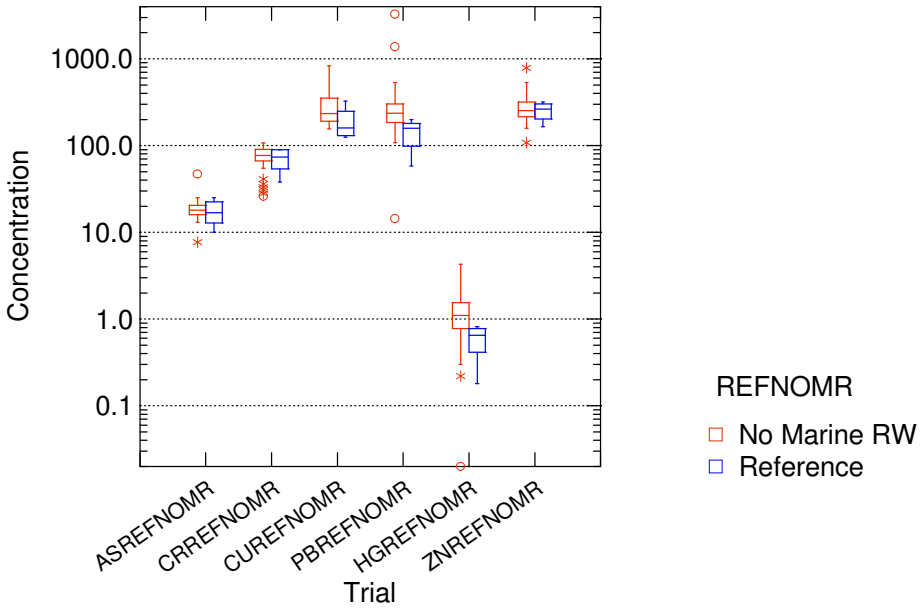
Kruskal-Wallis One-Way Analysis of Variance for 33 cases
Dependent variable is ZNMRNOMR- Zinc in marine railway sediment compared to zinc in remaning study area sediment
Grouping variable is MRNOMR$

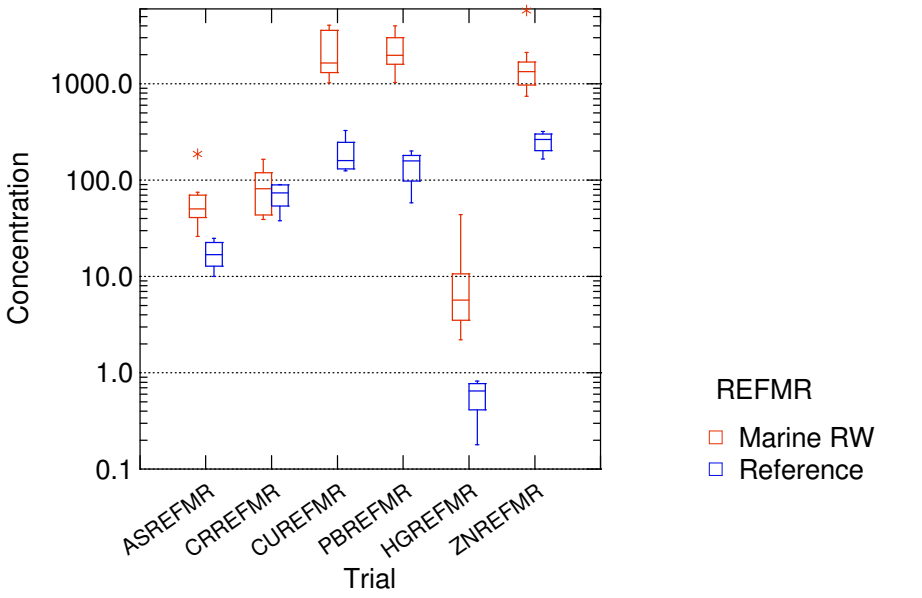
Group	Count	Rank Sum
Marine RW	7	209.000
No Marine RW	26	352.000

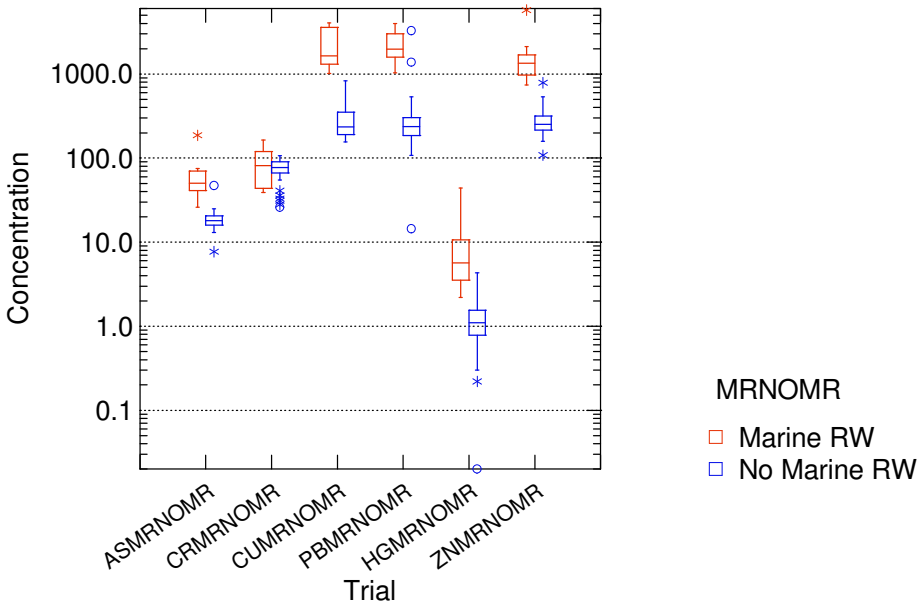
Mann-Whitney U test statistic = 181.000
Probability is 0.000
Chi-square approximation = 15.710 with 1 df




1000.0
100.0
10.0
1.0
0.1
Concentration
ASREFSITE
CUREFSITE
PBREFSITE
HGREFSITE
ZNREFSITE
BAREFSITE
Trial
REFSITE
Reference
Site


1000.0
100.0
10.0
1.0
0.1
Concentration
ASREFNOMR
CRREFNOMR
CUREFNOMR
PBREFNOMR
HGREFNOMR
ZNREFNOMR
Trial
REFNOMR
No Marine RW
Reference


Concentration
1000.0
100.0
10.0
1.0
0.1
ASREFMR
CRREFMR
CUREFMR
PBREFMR
HGREFMR
ZNREFMR
Trial
REFMR
Marine RW
Reference


Concentration
1000.0
100.0
10.0
1.0
0.1
ASMRNOMR
CRMRNOMR
CUMRNOMR
PBMRNOMR
HGMRNOMR
ZNMRNOMR
Trial
MRNOMR
Marine RW
No Marine RW

Output from Regression Analysis

Leptocheirus Survival

Sediment TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.793739979
R Square	0.630023155
Adjusted R Square	0.609468885
Standard Error	15.89438564
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	7743.583091	7743.583091	30.65169326	2.95233E-05
Residual	18	4547.366909	252.6314949		
Total	19	12290.95			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	94.27591479	6.214795849	15.16959158	1.06782E-11	81.21910311	107.3327265
X Variable 1	-0.198663832	0.035883234	-5.536397137	2.95233E-05	-0.274051766	-0.123275897

Sediment OC TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.729432399
R Square	0.532071625
Adjusted R Square	0.506075604
Standard Error	17.87500468
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	6539.665737	6539.665737	20.46742569	0.000262669
Residual	18	5751.284263	319.5157924		
Total	19	12290.95			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	89.99578624	6.632576458	13.56875218	6.81667E-11	76.0612494	103.9303231
X Variable 1	-0.008602406	0.001901465	-4.524093908	0.000262669	-0.012597238	-0.004607573

Sediment TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.823880905
R Square	0.678779745
Adjusted R Square	0.660934175
Standard Error	14.81009808
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	8342.847909	8342.847909	38.03631691	8.01413E-06
Residual	18	3948.102091	219.3390051		
Total	19	12290.95			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	94.4364453	5.670247886	16.6547296	2.21081E-12	82.52368733	106.3492033
X Variable 1	-0.100465854	0.016289931	-6.16735899	8.01413E-06	-0.134689756	-0.066241952

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Leptocheirus Survival

Sediment OC TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.759664576
R Square	0.577090268
Adjusted R Square	0.553595283
Standard Error	16.99340128
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	7092.987634	7092.987634	24.5622743	0.000102119
Residual	18	5197.962366	288.775687		
Total	19	12290.95			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	90.03758529	6.153464614	14.6320148	1.95183E-11	77.10962585	102.9655447
X Variable 1	-0.004352701	0.000878263	-4.95603413	0.000102119	-0.006197864	-0.002507538

Porewater TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.613805336
R Square	0.376756991
Adjusted R Square	0.342132379
Standard Error	20.62933277
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4630.701333	4630.701333	10.88119037	0.003993057
Residual	18	7660.248667	425.5693704		
Total	19	12290.95			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	70.32838288	4.791731304	14.67702975	1.85436E-11	60.26132118	80.39544458
X Variable 1	-0.502944048	0.152468971	-3.298664937	0.003993057	-0.823269716	-0.182618379

Porewater TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.619423422
R Square	0.383685375
Adjusted R Square	0.349445674
Standard Error	20.5143476
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4715.857763	4715.857763	11.2058622	0.003584563
Residual	18	7575.092237	420.8384576		
Total	19	12290.95			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	70.43411585	4.770444285	14.76468682	1.67895E-11	60.41177656	80.45645515
X Variable 1	-0.167952615	0.050172314	-3.347515825	0.003584563	-0.273360817	-0.062544413

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Leptocheirus Survival

Barium

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.060043779
R Square	0.003605255
Adjusted R Square	-0.048836573
Standard Error	29.36747053
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	59.29134298	59.29134298	0.068747705	0.795990601
Residual	19	16386.51818	862.4483253		
Total	20	16445.80952			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	53.85755536	35.09533412	1.534607283	0.141364664	-19.59784598	127.3129567
X Variable 1	0.095940684	0.365909521	0.262197835	0.795990601	-0.669916983	0.861798352

Lead

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.022361419
R Square	0.000500033
Adjusted R Square	-0.052105228
Standard Error	29.41319618
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	8.223448396	8.223448396	0.009505381	0.923354014
Residual	19	16437.58608	865.1361092		
Total	20	16445.80952			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	63.29895905	7.58582137	8.344377749	8.91175E-08	47.42164751	79.17627058
X Variable 1	-0.000913702	0.009371731	-0.097495544	0.923354014	-0.020528966	0.018701562

Mercury

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.625089258
R Square	0.390736581
Adjusted R Square	0.358670085
Standard Error	22.96430885
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	6425.979385	6425.979385	12.18519742	0.002446262
Residual	19	10019.83014	527.359481		
Total	20	16445.80952			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	95.46032467	10.58735302	9.016448631	2.71451E-08	73.30073323	117.6199161
X Variable 1	-25.12926626	7.198856611	-3.490730212	0.002446262	-40.196651	-10.06188153

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Leptocheirus Growth

Sediment TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.640043884
R Square	0.409656173
Adjusted R Square	0.376859294
Standard Error	0.24110278
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.72609161	0.72609161	12.4907059	0.0023696
Residual	18	1.046349909	0.058130551		
Total	19	1.772441519			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.973278648	0.094272568	10.32409179	5.45458E-09	0.775219178	1.171338118
X Variable 1	-0.001923727	0.000544315	-3.534219277	0.0023696	-0.003067291	-0.000780164

Sediment OC TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.541433429
R Square	0.293150158
Adjusted R Square	0.253880723
Standard Error	0.263823384
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.519591512	0.519591512	7.465097314	0.013680834
Residual	18	1.252850007	0.069602778		
Total	19	1.772441519			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.913401017	0.097892493	9.330654373	2.56548E-08	0.707736362	1.119065672
X Variable 1	-7.66784E-05	2.80644E-05	-2.732233027	0.013680834	-0.00013564	-1.77173E-05

Sediment TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.680853806
R Square	0.463561905
Adjusted R Square	0.433759789
Standard Error	0.229831478
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.821636368	0.821636368	15.55466395	0.000951539
Residual	18	0.950805152	0.052822508		
Total	19	1.772441519			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.981662233	0.087994114	11.15599887	1.61746E-09	0.796793317	1.166531149
X Variable 1	-0.000997014	0.000252796	-3.943940155	0.000951539	-0.00152812	-0.000465908

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Leptocheirus Growth

Sediment OC TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.586841497
R Square	0.344382942
Adjusted R Square	0.307959772
Standard Error	0.254082543
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.610398625	0.610398625	9.455051369	0.006527731
Residual	18	1.162042894	0.064557939		
Total	19	1.772441519			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.922482749	0.092005592	10.02637703	8.576E-09	0.729186025	1.115779474
X Variable 1	-4.03786E-05	1.31316E-05	-3.074906725	0.006527731	-6.79672E-05	-1.279E-05

Porewater TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.338375915
R Square	0.11449826
Adjusted R Square	0.065303718
Standard Error	0.295287059
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.202941469	0.202941469	2.327458636	0.144488172
Residual	18	1.56950005	0.087194447		
Total	19	1.772441519			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.728280961	0.068588561	10.61811113	3.52111E-09	0.58418163	0.872380291
X Variable 1	-0.00332952	0.002182432	-1.525601074	0.144488172	-0.007914643	0.001255602

Porewater TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.343668964
R Square	0.118108357
Adjusted R Square	0.069114377
Standard Error	0.294684517
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.209340155	0.209340155	2.410670786	0.137915915
Residual	18	1.563101364	0.086838965		
Total	19	1.772441519			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.729167561	0.068526482	10.64066825	3.4061E-09	0.585198653	0.873136468
X Variable 1	-0.001119007	0.000720715	-1.5526335	0.137915915	-0.002633175	0.000395161

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Leptocheirus Growth

Barium

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.299265729
R Square	0.089559977
Adjusted R Square	0.038979975
Standard Error	0.299416256
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.158739821	0.158739821	1.770659833	0.1999127
Residual	18	1.613701698	0.089650094		
Total	19	1.772441519			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.232177103	0.357858725	0.648795425	0.524662649	-0.519656761	0.984010967
X Variable 1	0.004972423	0.003736806	1.330661427	0.1999127	-0.00287832	0.012823166

Lead

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.072503644
R Square	0.005256778
Adjusted R Square	-0.050006734
Standard Error	0.312971794
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.009317332	0.009317332	0.095122047	0.761304642
Residual	18	1.763124187	0.097951344		
Total	19	1.772441519			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.713458509	0.082545303	8.643235712	8.00858E-08	0.540037129	0.886879889
X Variable 1	-3.07884E-05	9.98266E-05	-0.308418623	0.761304642	-0.000240516	0.00017894

Mercury

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.431761003
R Square	0.186417564
Adjusted R Square	0.14121854
Standard Error	0.283041741
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.33041423	0.33041423	4.12437142	0.057307888
Residual	18	1.442027289	0.080112627		
Total	19	1.772441519			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.935557952	0.132151537	7.079432976	1.33498E-06	0.65791766	1.213198245
X Variable 1	-0.18851028	0.092823119	-2.030854849	0.057307888	-0.383524567	0.006504006

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Leptocheirus Reproduction

Sediment TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.587268391
R Square	0.344884163
Adjusted R Square	0.308488838
Standard Error	0.812891747
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	6.261711976	6.261711976	9.47605686	0.006479231
Residual	18	11.89427388	0.660792993		
Total	19	18.15598585			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	2.012765726	0.317845331	6.332531999	5.74504E-06	1.344996949	2.680534504
X Variable 1	-0.005649297	0.001835188	-3.078320461	0.006479231	-0.009504886	-0.001793707

Sediment OC TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.497228885
R Square	0.247236564
Adjusted R Square	0.205416373
Standard Error	0.871370641
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4.488823559	4.488823559	5.91189468	0.025709513
Residual	18	13.66716229	0.759286794		
Total	19	18.15598585			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	1.837481682	0.323324805	5.683082939	2.1706E-05	1.158200948	2.516762416
X Variable 1	-0.000225376	9.26926E-05	-2.431438809	0.025709513	-0.000420116	-3.06363E-05

Sediment TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.604425357
R Square	0.365330013
Adjusted R Square	0.330070569
Standard Error	0.800106219
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	6.63292654	6.63292654	10.36119615	0.004760647
Residual	18	11.52305931	0.640169962		
Total	19	18.15598585			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	2.010519396	0.30633157	6.563213172	3.63113E-06	1.36694015	2.654098641
X Variable 1	-0.002832787	0.000880053	-3.218881195	0.004760647	-0.004681712	-0.000983862

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Leptocheirus Reproduction

Sediment OC TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.520245902
R Square	0.270655799
Adjusted R Square	0.230136677
Standard Error	0.857708931
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4.914022857	4.914022857	6.679705378	0.018697878
Residual	18	13.24196299	0.735664611		
Total	19	18.15598585			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	1.84150013	0.310584177	5.929149852	1.30341E-05	1.188986481	2.494013778
X Variable 1	-0.000114568	4.43286E-05	-2.5845126	0.018697878	-0.000207699	-2.14368E-05

Porewater TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.317938426
R Square	0.101084843
Adjusted R Square	0.051145112
Standard Error	0.952210612
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.835294971	1.835294971	2.024136706	0.171916905
Residual	18	16.32069088	0.906705049		
Total	19	18.15598585			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	1.295294995	0.221177168	5.856368482	1.51444E-05	0.830618648	1.759971341
X Variable 1	-0.010012654	0.007037677	-1.422721584	0.171916905	-0.024798276	0.004772967

Porewater TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.319819331
R Square	0.102284405
Adjusted R Square	0.052411316
Standard Error	0.951575058
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.857074203	1.857074203	2.050893727	0.169254039
Residual	18	16.29891165	0.905495092		
Total	19	18.15598585			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	1.297119981	0.221281022	5.861867278	1.49733E-05	0.832225445	1.762014516
X Variable 1	-0.003332891	0.002327284	-1.432094175	0.169254039	-0.008222338	0.001556556

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Leptocheirus Reproduction

Barium

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.277830826
R Square	0.077189968
Adjusted R Square	0.025922744
Standard Error	0.964783392
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.401459969	1.401459969	1.505639708	0.23561346
Residual	18	16.75452588	0.930806993		
Total	19	18.15598585			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	-0.179799111	1.153097561	-0.155927059	0.877825921	-2.602369066	2.242770843
X Variable 1	0.014774591	0.012040789	1.227045112	0.23561346	-0.010522187	0.04007137

Lead

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.300348644
R Square	0.090209308
Adjusted R Square	0.039665381
Standard Error	0.957953459
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.637838918	1.637838918	1.784770449	0.198210876
Residual	18	16.51814693	0.91767483		
Total	19	18.15598585			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	1.389117781	0.25265714	5.498034928	3.20099E-05	0.858304416	1.919931146
X Variable 1	-0.000408203	0.000305552	-1.335953012	0.198210876	-0.001050145	0.000233739

Mercury

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.440137539
R Square	0.193721053
Adjusted R Square	0.148927779
Standard Error	0.901812654
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	3.517196706	3.517196706	4.324779876	0.052127916
Residual	18	14.63878915	0.813266064		
Total	19	18.15598585			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	1.978798688	0.421054253	4.69962879	0.000178596	1.094195844	2.863401533
X Variable 1	-0.6150409	0.29574812	-2.079610511	0.052127916	-1.236385125	0.006303326

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Neanthes **Growth**

Sediment TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.392624745
R Square	0.15415419
Adjusted R Square	0.10963599
Standard Error	0.64201949
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.427296358	1.427296358	3.462722857	0.078314826
Residual	19	7.831591475	0.412189025		
Total	20	9.258887833			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	4.827037813	0.149496381	32.28866006	4.59296E-18	4.514138195	5.139937431
X Variable 1	-0.000275046	0.000147808	-1.860839288	0.078314826	-0.000584411	3.43188E-05

Sediment OC TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.407621175
R Square	0.166155022
Adjusted R Square	0.122268445
Standard Error	0.637448744
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.538410714	1.538410714	3.786009999	0.066628244
Residual	19	7.720477119	0.406340901		
Total	20	9.258887833			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	4.870502956	0.156735873	31.0745897	9.39163E-18	4.542450901	5.198555011
X Variable 1	-2.92866E-05	1.50514E-05	-1.945767201	0.066628244	-6.07896E-05	2.21644E-06

Sediment TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.389830951
R Square	0.151968171
Adjusted R Square	0.107334916
Standard Error	0.642848578
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.407056245	1.407056245	3.404819417	0.080651273
Residual	19	7.851831588	0.413254294		
Total	20	9.258887833			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	4.823883273	0.149228769	32.32542428	4.49637E-18	4.511543773	5.136222773
X Variable 1	-0.000128531	6.96562E-05	-1.845215277	0.080651273	-0.000274323	1.72615E-05

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Neanthes **Growth**

Sediment OC TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.402445301
R Square	0.16196222
Adjusted R Square	0.117854968
Standard Error	0.639049368
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.499590027	1.499590027	3.672008889	0.070501998
Residual	19	7.759297806	0.408384095		
Total	20	9.258887833			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	4.863244054	0.155833593	31.20793131	8.67073E-18	4.537080495	5.189407613
X Variable 1	-1.35942E-05	7.09417E-06	-1.91624865	0.070501998	-2.84425E-05	1.25408E-06

Porewater TPAH16 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.382900418
R Square	0.14661273
Adjusted R Square	0.101697611
Standard Error	0.644875223
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.357470822	1.357470822	3.264217745	0.086671228
Residual	19	7.901417011	0.415864053		
Total	20	9.258887833			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	4.806490808	0.146959015	32.70633515	3.61262E-18	4.498901959	5.114079658
X Variable 1	-0.00263235	0.001456982	-1.806714628	0.086671228	-0.005681849	0.000417149

Porewater TPAH34 **SUMMARY OUTPUT**

Regression Statistics	
Multiple R	0.383508676
R Square	0.147078904
Adjusted R Square	0.10218832
Standard Error	0.644699063
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.361787077	1.361787077	3.276386519	0.086129942
Residual	19	7.897100757	0.415636882		
Total	20	9.258887833			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	4.804869816	0.146644314	32.76546964	3.49272E-18	4.497939644	5.111799988
X Variable 1	-0.000768624	0.000424636	-1.810079147	0.086129942	-0.001657398	0.000120149

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.

Output from Regression Analysis

Neanthes **Growth**

Barium

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.222487372
R Square	0.049500631
Adjusted R Square	-0.000525652
Standard Error	17.95113642
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	318.8573226	318.8573226	0.989492485	0.332366932
Residual	19	6122.622677	322.2432988		
Total	20	6441.48			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	66.5427127	28.17789169	2.361522055	0.029032063	7.565689269	125.5197361
X Variable 1	5.868387537	5.899463737	0.994732369	0.332366932	-6.47933581	18.21611088

Lead

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.201665887
R Square	0.04066913
Adjusted R Square	-0.009821969
Standard Error	705.2284541
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	400598.8654	400598.8654	0.805471284	0.38069454
Residual	19	9449596.277	497347.1725		
Total	20	9850195.143			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	1415.289424	1106.996823	1.278494567	0.216472356	-901.6822751	3732.261124
X Variable 1	-208.0058005	231.7663681	-0.89748052	0.38069454	-693.0985347	277.0869336

Mercury

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.169218729
R Square	0.028634978
Adjusted R Square	-0.022489497
Standard Error	0.721280657
Observations	21

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.291391291	0.291391291	0.560103125	0.463382988
Residual	19	9.884669947	0.520245787		
Total	20	10.17606124			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	2.134630351	1.13219396	1.885392809	0.07476323	-0.235079578	4.504340281
X Variable 1	-0.177402147	0.237041766	-0.748400378	0.463382988	-0.67353642	0.318732125

Note:
A Significance F value of less than 0.05 means the regression is statistically significant.