Appendix F6 – Pro UCL Version 4.0 – Output Summary

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4-Trichlorobenzene

General Statistics

Number of Valid Data	149	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	148
		Percent Non-Detects	99.33%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 1,2,4-Trichlorobenzene was not processed!

1,2,4-Trimethylbenzene

General Statistics

Number of Valid Data	2	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	1
		Percent Non-Detects	50.00%

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable 1,2,4-Trimethylbenzene was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

1,2-Dichlorobenzene

General Statistics

Number of Valid Data	146	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	144
		Percent Non-Detects	98.63%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.067	Minimum Detected	-2.703
Maximum Detected	0.073	Maximum Detected	-2.617
Mean of Detected	0.07	Mean of Detected	-2.66
SD of Detected	0.00424	SD of Detected	0.0606
Minimum Non-Detect	0.0056	Minimum Non-Detect	-5.185
Maximum Non-Detect	7.4	Maximum Non-Detect	2.001

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution	Assuming Lognormal Distribution
DL/2 Substitution Method	DL/2 Substitution Method

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mean	0.37	Mean	-2.221
SD	0.602	SD	2.031
95% DL/2 (t) UCL	0.452	95% H-Stat (DL/2) UCL	1.457

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.0672
5% K-S Critical Value	N/A	SD	9.48E-04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	2.15E-04
		95% KM (t) UCL	0.0675
Assuming Gamma Distribution		95% KM (z) UCL	0.0675
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.071
Minimum	N/A	95% KM (bootstrap t) UCL	0.0672
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.073
Median	N/A	95% KM (Chebyshev) UCL	0.0681
SD	N/A	97.5% KM (Chebyshev) UCL	0.0685
k star	N/A	99% KM (Chebyshev) UCL	0.0693
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.0675
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	0.073
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

1,3,5-Trimethylbenzene

General Statistics			
Number of Valid Data	2	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	1
		Percent Non-Detects	50.00%

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable 1,3,5-Trimethylbenzene was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

1-Phenyl-1-(2,4-Dimethylphenyl)ethane

General Statistics			
Number of Valid Data	24	Number of Detected Data	13
Number of Distinct Detected Data	12	Number of Non-Detect Data	11
		Percent Non-Detects	45.83%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.034	Minimum Detected	-3.381
Maximum Detected	2.1	Maximum Detected	0.742
Mean of Detected	0.563	Mean of Detected	-1.235
SD of Detected	0.675	SD of Detected	1.237
Minimum Non-Detect	0.41	Minimum Non-Detect	-0.892
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	24
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.733	Shapiro Wilk Test Statistic	0.962
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.956	Mean	-0.875
SD	1.568	SD	1.261
95% DL/2 (t) UCL	1.505	95% H-Stat (DL/2) UCL	1.9
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.429
		SD in Log Scale	0.932
		Mean in Original Scale	0.394
		SD in Original Scale	0.523
		95% Percentile Bootstrap UCL	0.577
		95% BCA Bootstrap UCL	0.64
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.734	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.767		
nu star	19.08		
A-D Test Statistic	0.555	Nonparametric Statistics	
5% A-D Critical Value	0.763	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.763	Mean	0.429
5% K-S Critical Value	0.244	SD	0.543
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.126
		95% KM (t) UCL	0.645
Assuming Gamma Distribution		95% KM (z) UCL	0.636
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.643
Minimum	0.034	95% KM (bootstrap t) UCL	0.753
Maximum	2.1	95% KM (BCA) UCL	0.66
Mean	0.56	95% KM (Percentile Bootstrap) UCL	0.646
Median	0.536	95% KM (Chebyshev) UCL	0.977
SD	0.491	97.5% KM (Chebyshev) UCL	1.214
k star	1.354	99% KM (Chebyshev) UCL	1.68
Theta star	0.414		
Nu star	64.98	Potential UCLs to Use	
AppChi2	47.43	95% KM (BCA) UCL	0.66
95% Gamma Approximate UCL	0.767		
95% Adjusted Gamma UCL	0.784		

Note: DL/2 is not a recommended method.

1-Phenyl-1-(4-methylphenyl)ethane

General Statistics			
Number of Valid Data	24	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	21
		Percent Non-Detects	87.50%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.27	Minimum Detected	-1.309
Maximum Detected	0.72	Maximum Detected	-0.329
Mean of Detected	0.493	Mean of Detected	-0.784
SD of Detected	0.225	SD of Detected	0.494
Minimum Non-Detect	0.39	Minimum Non-Detect	-0.942
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	24
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	1	Shapiro Wilk Test Statistic	0.985
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.266	Mean	-0.412
SD	1.685	SD	1.093
95% DL/2 (t) UCL	1.855	95% H-Stat (DL/2) UCL	2.252
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.169
		SD in Log Scale	0.248
		Mean in Original Scale	0.321
		SD in Original Scale	0.102
		95% Percentile Bootstrap UCL	0.358
		95% BCA Bootstrap UCL	0.372
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.339
5% K-S Critical Value	N/A	SD	0.141
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.055
		95% KM (t) UCL	0.434
Assuming Gamma Distribution		95% KM (z) UCL	0.43
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.479
Minimum	N/A	95% KM (bootstrap t) UCL	0.402
Maximum	N/A	95% KM (BCA) UCL	0.72
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.72
Median	N/A	95% KM (Chebyshev) UCL	0.579
SD	N/A	97.5% KM (Chebyshev) UCL	0.683
k star	N/A	99% KM (Chebyshev) UCL	0.887
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.434
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	0.72
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

2-Hexanone

General Statistics

Number of Valid Data	143	Number of Detected Data	16
Number of Distinct Detected Data	11	Number of Non-Detect Data	127
		Percent Non-Detects	88.81%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0024	Minimum Detected	-6.032
Maximum Detected	0.013	Maximum Detected	-4.343
Mean of Detected	0.00574	Mean of Detected	-5.237
SD of Detected	0.00256	SD of Detected	0.396
Minimum Non-Detect	0.005	Minimum Non-Detect	-5.298
Maximum Non-Detect	14	Maximum Non-Detect	2.639
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	143
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

UCL Statistics

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.807	Shapiro Wilk Test Statistic	0.928
5% Shapiro Wilk Critical Value	0.887	5% Shapiro Wilk Critical Value	0.887
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0537	Mean	-5.38
SD	0.585	SD	0.744
95% DL/2 (t) UCL	0.135	95% H-Stat (DL/2) UCL	0.00692
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.473
		SD in Log Scale	0.221
		Mean in Original Scale	0.00431
		SD in Original Scale	0.00117
		95% Percentile Bootstrap UCL	0.00448
		95% BCA Bootstrap UCL	0.0045
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	5.433	Data appear Lognormal at 5% Significance Level	
Theta Star	0.00106		
nu star	173.9		
A-D Test Statistic	0.79	Nonparametric Statistics	
5% A-D Critical Value	0.741	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.741	Mean	0.00451
5% K-S Critical Value	0.216	SD	0.0014
Data not Gamma Distributed at 5% Significance Level		SE of Mean	3.16E-04
		95% KM (t) UCL	0.00503
Assuming Gamma Distribution		95% KM (z) UCL	0.00503
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00508
Minimum	0.0024	95% KM (bootstrap t) UCL	0.00499
Maximum	0.013	95% KM (BCA) UCL	0.00506
Mean	0.00611	95% KM (Percentile Bootstrap) UCL	0.00502
Median	0.00631	95% KM (Chebyshev) UCL	0.00589
SD	0.00105	97.5% KM (Chebyshev) UCL	0.00648
k star	34.27	99% KM (Chebyshev) UCL	0.00765
Theta star	1.78E-04		
Nu star	9801	Potential UCLs to Use	
AppChi2	9572	95% KM (t) UCL	0.00503
95% Gamma Approximate UCL	0.00626	95% KM (% Bootstrap) UCL	0.00502
95% Adjusted Gamma UCL	0.00626		

Note: DL/2 is not a recommended method.

2-Methylnaphthalene

General Statistics			
Number of Valid Data	146	Number of Detected Data	51
Number of Distinct Detected Data	45	Number of Non-Detect Data	95
		Percent Non-Detects	65.07%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.006	Minimum Detected	-5.116
Maximum Detected	35	Maximum Detected	3.555
Mean of Detected	1.655	Mean of Detected	-1.803
SD of Detected	5.561	SD of Detected	1.899
Minimum Non-Detect	0.0078	Minimum Non-Detect	-4.854
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	144
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.63%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.41	Lilliefors Test Statistic	0.122
5% Lilliefors Critical Value	0.124	5% Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	

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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.06	Mean	-1.33
SD	3.424	SD	1.574
95% DL/2 (t) UCL	1.529	95% H-Stat (DL/2) UCL	1.695

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.5
		SD in Log Scale	1.427
		Mean in Original Scale	0.629
		SD in Original Scale	3.352
		95% Percentile Bootstrap UCL	1.126
		95% BCA Bootstrap UCL	1.414

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.295	Data appear Lognormal at 5% Significance Level	
Theta Star	5.619		
nu star	30.04		
A-D Test Statistic	6.008	Nonparametric Statistics	
5% A-D Critical Value	0.863	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.863	Mean	0.654
5% K-S Critical Value	0.135	SD	3.344
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.28
		95% KM (t) UCL	1.118
Assuming Gamma Distribution		95% KM (z) UCL	1.115
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.115
Minimum	0.006	95% KM (bootstrap t) UCL	2.128
Maximum	35	95% KM (BCA) UCL	1.175
Mean	1.696	95% KM (Percentile Bootstrap) UCL	1.136
Median	1.737	95% KM (Chebyshev) UCL	1.876
SD	3.273	97.5% KM (Chebyshev) UCL	2.404
k star	0.724	99% KM (Chebyshev) UCL	3.443
Theta star	2.342		
Nu star	211.5	Potential UCLs to Use	
AppChi2	178.8	95% KM (Chebyshev) UCL	1.876
95% Gamma Approximate UCL	2.006		
95% Adjusted Gamma UCL	2.009		

Note: DL/2 is not a recommended method.

4,4'-DDD

General Statistics			
Number of Valid Data	132	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	130
		Percent Non-Detects	98.48%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0037	Minimum Detected	-5.599
Maximum Detected	0.0061	Maximum Detected	-5.099
Mean of Detected	0.0049	Mean of Detected	-5.349
SD of Detected	0.0017	SD of Detected	0.354
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.37	Maximum Non-Detect	-0.994
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	132
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

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Baseline Ecological Risk Assessment
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0136	Mean	-5.272
SD	0.0275	SD	1.187
95% DL/2 (t) UCL	0.0176	95% H-Stat (DL/2) UCL	0.0136
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.00374
5% K-S Critical Value	N/A	SD	2.95E-04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	5.18E-05
		95% KM (t) UCL	0.00382
Assuming Gamma Distribution		95% KM (z) UCL	0.00382
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00528
Minimum	N/A	95% KM (bootstrap t) UCL	0.00375
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.0061
Median	N/A	95% KM (Chebyshev) UCL	0.00396
SD	N/A	97.5% KM (Chebyshev) UCL	0.00406
k star	N/A	99% KM (Chebyshev) UCL	0.00425
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.00382
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	0.0061
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

4,4'-DDE

General Statistics

Number of Valid Data	132	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	129
		Percent Non-Detects	97.73%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0059	Minimum Detected	-5.133
Maximum Detected	0.16	Maximum Detected	-1.833
Mean of Detected	0.0576	Mean of Detected	-3.976
SD of Detected	0.0887	SD of Detected	1.858
Minimum Non-Detect	0.0018	Minimum Non-Detect	-6.32
Maximum Non-Detect	0.37	Maximum Non-Detect	-0.994
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	132
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.755	Shapiro Wilk Test Statistic	0.789
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0147	Mean	-5.257
SD	0.0303	SD	1.226
95% DL/2 (t) UCL	0.019	95% H-Stat (DL/2) UCL	0.014
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-14.24
		SD in Log Scale	2.619
		Mean in Original Scale	0.00131
		SD in Original Scale	0.0139
		95% Percentile Bootstrap UCL	0.00373
		95% BCA Bootstrap UCL	0.00611
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Lognormal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.00715
5% K-S Critical Value	N/A	SD	0.0137
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0015
		95% KM (t) UCL	0.00964
Assuming Gamma Distribution		95% KM (z) UCL	0.00962
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00879
Minimum	N/A	95% KM (bootstrap t) UCL	0.114
Maximum	N/A	95% KM (BCA) UCL	0.16
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	0.0137
SD	N/A	97.5% KM (Chebyshev) UCL	0.0165
k star	N/A	99% KM (Chebyshev) UCL	0.0221
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (Chebyshev) UCL	0.0137
95% Gamma Approximate UCL	N/A		
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

4,4'-DDT

General Statistics

Number of Valid Data	132	Number of Detected Data	40
Number of Distinct Detected Data	36	Number of Non-Detect Data	92
		Percent Non-Detects	69.70%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.30E-04	Minimum Detected	-7.752
Maximum Detected	0.12	Maximum Detected	-2.12
Mean of Detected	0.012	Mean of Detected	-5.443
SD of Detected	0.0224	SD of Detected	1.403
Minimum Non-Detect	0.0024	Minimum Non-Detect	-6.032
Maximum Non-Detect	0.37	Maximum Non-Detect	-0.994
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	132
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

UCL Statistics

Normal Distribution Test with Detected Values Only	Lognormal Distribution Test with Detected Values Only

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Shapiro Wilk Test Statistic	0.541	Shapiro Wilk Test Statistic	0.969
5% Shapiro Wilk Critical Value	0.94	5% Shapiro Wilk Critical Value	0.94
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0153	Mean	-5.206
SD	0.0287	SD	1.333
95% DL/2 (t) UCL	0.0194	95% H-Stat (DL/2) UCL	0.0203
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-6.065
		SD in Log Scale	0.949
		Mean in Original Scale	0.00499
		SD in Original Scale	0.0131
		95% Percentile Bootstrap UCL	0.00715
		95% BCA Bootstrap UCL	0.00782
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.578	Data appear Lognormal at 5% Significance Level	
Theta Star	0.0207		
nu star	46.22		
A-D Test Statistic	1.56	Nonparametric Statistics	
5% A-D Critical Value	0.803	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.803	Mean	0.00545
5% K-S Critical Value	0.146	SD	0.0136
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00128
		95% KM (t) UCL	0.00757
Assuming Gamma Distribution		95% KM (z) UCL	0.00755
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00755
Minimum	4.30E-04	95% KM (bootstrap t) UCL	0.00938
Maximum	0.12	95% KM (BCA) UCL	0.00788
Mean	0.0123	95% KM (Percentile Bootstrap) UCL	0.00766
Median	0.0118	95% KM (Chebyshev) UCL	0.011
SD	0.013	97.5% KM (Chebyshev) UCL	0.0134
k star	1.406	99% KM (Chebyshev) UCL	0.0181
Theta star	0.00876		
Nu star	371.2	Potential UCLs to Use	
AppChi2	327.6	95% KM (BCA) UCL	0.00788
95% Gamma Approximate UCL	0.014		
95% Adjusted Gamma UCL	0.014		
Note: DL/2 is not a recommended method.			

Acenaphthene

General Statistics			
Number of Valid Data	146	Number of Detected Data	30
Number of Distinct Detected Data	25	Number of Non-Detect Data	116
		Percent Non-Detects	79.45%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0015	Minimum Detected	-6.502
Maximum Detected	2.7	Maximum Detected	0.993
Mean of Detected	0.253	Mean of Detected	-2.966
SD of Detected	0.574	SD of Detected	2.095
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.432	Shapiro Wilk Test Statistic	0.89
5% Shapiro Wilk Critical Value	0.927	5% Shapiro Wilk Critical Value	0.927
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Mean	0.574	Mean	-1.512
SD	0.996	SD	1.628
95% DL/2 (t) UCL	0.71	95% H-Stat (DL/2) UCL	1.858
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.493
		SD in Log Scale	1.263
		Mean in Original Scale	0.0839
		SD in Original Scale	0.275
		95% Percentile Bootstrap UCL	0.124
		95% BCA Bootstrap UCL	0.145
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.393	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.644		
nu star	23.57		
A-D Test Statistic	1.318	Nonparametric Statistics	
5% A-D Critical Value	0.829	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.829	Mean	0.124
5% K-S Critical Value	0.171	SD	0.293
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0298
		95% KM (t) UCL	0.173
Assuming Gamma Distribution		95% KM (z) UCL	0.173
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.173
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.204
Maximum	2.7	95% KM (BCA) UCL	0.173
Mean	0.235	95% KM (Percentile Bootstrap) UCL	0.176
Median	0.169	95% KM (Chebyshev) UCL	0.254
SD	0.344	97.5% KM (Chebyshev) UCL	0.31
k star	0.186	99% KM (Chebyshev) UCL	0.42
Theta star	1.267		
Nu star	54.18	Potential UCLs to Use	
AppChi2	38.27	97.5% KM (Chebyshev) UCL	0.31
95% Gamma Approximate UCL	0.333		
95% Adjusted Gamma UCL	0.334		

Note: DL/2 is not a recommended method.

Acenaphthylene

General Statistics			
Number of Valid Data	146	Number of Detected Data	52
Number of Distinct Detected Data	48	Number of Non-Detect Data	94
		Percent Non-Detects	64.38%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0065	Minimum Detected	-5.036
Maximum Detected	6.3	Maximum Detected	1.841
Mean of Detected	0.46	Mean of Detected	-1.886
SD of Detected	0.915	SD of Detected	1.663
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	7.4	Maximum Non-Detect	2.001
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.31	Lilliefors Test Statistic	0.109
5% Lilliefors Critical Value	0.123	5% Lilliefors Critical Value	0.123
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.449	Mean	-1.477
SD	0.734	SD	1.3
95% DL/2 (t) UCL	0.55	95% H-Stat (DL/2) UCL	1.013
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.542

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

SD in Log Scale	1.267
Mean in Original Scale	0.208
SD in Original Scale	0.575
95% Percentile Bootstrap UCL	0.291
95% BCA Bootstrap UCL	0.346

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.543	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.847		
nu star	56.47		
A-D Test Statistic	0.642	Nonparametric Statistics	
5% A-D Critical Value	0.809	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.809	Mean	0.247
5% K-S Critical Value	0.13	SD	0.579
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0508
		95% KM (t) UCL	0.331
Assuming Gamma Distribution		95% KM (z) UCL	0.331
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.331
Minimum	0.0065	95% KM (bootstrap t) UCL	0.4
Maximum	6.3	95% KM (BCA) UCL	0.341
Mean	0.46	95% KM (Percentile Bootstrap) UCL	0.332
Median	0.427	95% KM (Chebyshev) UCL	0.469
SD	0.572	97.5% KM (Chebyshev) UCL	0.564
k star	1.127	99% KM (Chebyshev) UCL	0.753
Theta star	0.408		
Nu star	329	Potential UCLs to Use	
AppChi2	288	95% KM (t) UCL	0.331
95% Gamma Approximate UCL	0.525		
95% Adjusted Gamma UCL	0.526		

Note: DL/2 is not a recommended method.

Acetophenone

General Statistics			
Number of Valid Data	38	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	35
		Percent Non-Detects	92.11%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.008	Minimum Detected	-4.828
Maximum Detected	0.39	Maximum Detected	-0.942
Mean of Detected	0.154	Mean of Detected	-2.84
SD of Detected	0.206	SD of Detected	1.945
Minimum Non-Detect	0.026	Minimum Non-Detect	-3.65
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	38
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.857	Shapiro Wilk Test Statistic	0.998
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.941	Mean	-1.453
SD	1.552	SD	1.87
95% DL/2 (t) UCL	1.365	95% H-Stat (DL/2) UCL	3.991

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.548
		SD in Log Scale	0.806
		Mean in Original Scale	0.0215
		SD in Original Scale	0.0622
		95% Percentile Bootstrap UCL	0.0408
		95% BCA Bootstrap UCL	0.0531
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.0371
5% K-S Critical Value	N/A	SD	0.0926
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0286
		95% KM (t) UCL	0.0853
Assuming Gamma Distribution		95% KM (z) UCL	0.0841
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0819
Minimum	N/A	95% KM (bootstrap t) UCL	0.134
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	0.162
SD	N/A	97.5% KM (Chebyshev) UCL	0.215
k star	N/A	99% KM (Chebyshev) UCL	0.321
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.0853
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	N/A
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

alpha-BHC

General Statistics			
Number of Valid Data	132	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	131
		Percent Non-Detects	99.24%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable alpha-BHC was not processed!

Anthracene

General Statistics			
Number of Valid Data	146	Number of Detected Data	56
Number of Distinct Detected Data	51	Number of Non-Detect Data	90
		Percent Non-Detects	61.64%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0042	Minimum Detected	-5.473
Maximum Detected	7.7	Maximum Detected	2.041
Mean of Detected	0.62	Mean of Detected	-1.79
SD of Detected	1.25	SD of Detected	1.865
Minimum Non-Detect	0.0099	Minimum Non-Detect	-4.615
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.311	Lilliefors Test Statistic	0.125

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
5% Lilliefors Critical Value	0.118	5% Lilliefors Critical Value	0.118
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.54	Mean	-1.411
SD	0.994	SD	1.378
95% DL/2 (t) UCL	0.676	95% H-Stat (DL/2) UCL	1.219
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.511
		SD in Log Scale	1.403
		Mean in Original Scale	0.278
		SD in Original Scale	0.817
		95% Percentile Bootstrap UCL	0.4
		95% BCA Bootstrap UCL	0.445
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.472	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1.314		
nu star	52.87		
A-D Test Statistic	1.059	Nonparametric Statistics	
5% A-D Critical Value	0.819	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.819	Mean	0.317
5% K-S Critical Value	0.126	SD	0.821
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0707
		95% KM (t) UCL	0.434
Assuming Gamma Distribution		95% KM (z) UCL	0.433
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.433
Minimum	0.0042	95% KM (bootstrap t) UCL	0.532
Maximum	7.7	95% KM (BCA) UCL	0.439
Mean	0.613	95% KM (Percentile Bootstrap) UCL	0.443
Median	0.573	95% KM (Chebyshev) UCL	0.625
SD	0.779	97.5% KM (Chebyshev) UCL	0.758
k star	1.078	99% KM (Chebyshev) UCL	1.02
Theta star	0.569		
Nu star	314.8	Potential UCLs to Use	
AppChi2	274.7	95% KM (Chebyshev) UCL	0.625
95% Gamma Approximate UCL	0.703		
95% Adjusted Gamma UCL	0.704		

Note: DL/2 is not a recommended method.

Antimony

General Statistics			
Number of Valid Data	146	Number of Detected Data	74
Number of Distinct Detected Data	48	Number of Non-Detect Data	72
		Percent Non-Detects	49.32%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.14	Minimum Detected	-1.966
Maximum Detected	16.5	Maximum Detected	2.803
Mean of Detected	1.353	Mean of Detected	-0.671
SD of Detected	3.293	SD of Detected	1.069
Minimum Non-Detect	0.15	Minimum Non-Detect	-1.897
Maximum Non-Detect	62.7	Maximum Non-Detect	4.138
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.411	Lilliefors Test Statistic	0.25
5% Lilliefors Critical Value	0.103	5% Lilliefors Critical Value	0.103
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	3.087	Mean	0.195

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
SD	4.29	SD	1.452
95% DL/2 (t) UCL	3.674	95% H-Stat (DL/2) UCL	8.729
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.793
		SD in Log Scale	0.841
		Mean in Original Scale	0.903
		SD in Original Scale	2.385
		95% Percentile Bootstrap UCL	1.25
		95% BCA Bootstrap UCL	1.374
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.614	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.205		
nu star	90.81		
A-D Test Statistic	11.65	Nonparametric Statistics	
5% A-D Critical Value	0.805	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.805	Mean	0.976
5% K-S Critical Value	0.109	SD	2.478
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.219
		95% KM (t) UCL	1.339
Assuming Gamma Distribution		95% KM (z) UCL	1.336
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.337
Minimum	0.14	95% KM (bootstrap t) UCL	1.564
Maximum	16.5	95% KM (BCA) UCL	1.36
Mean	1.355	95% KM (Percentile Bootstrap) UCL	1.379
Median	1.214	95% KM (Chebyshev) UCL	1.931
SD	2.339	97.5% KM (Chebyshev) UCL	2.345
k star	1.126	99% KM (Chebyshev) UCL	3.158
Theta star	1.203		
Nu star	328.9	Potential UCLs to Use	
AppChi2	287.9	95% KM (Chebyshev) UCL	1.931
95% Gamma Approximate UCL	1.548		
95% Adjusted Gamma UCL	1.551		

Note: DL/2 is not a recommended method.

Arsenic

General Statistics			
Number of Valid Observations	146	Number of Distinct Observations	82
Raw Statistics		Log-transformed Statistics	
Minimum	0.7	Minimum of Log Data	-0.357
Maximum	74.3	Maximum of Log Data	4.308
Mean	8.997	Mean of log Data	1.963
Median	6.8	SD of log Data	0.649
SD	8.342		
Coefficient of Variation	0.927		
Skewness	4.364		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.234	Lilliefors Test Statistic	0.0812
Lilliefors Critical Value	0.0733	Lilliefors Critical Value	0.0733
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	10.14	95% H-UCL	9.748
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	11.02
95% Adjusted-CLT UCL	10.4	97.5% Chebyshev (MVUE) UCL	11.99
95% Modified-t UCL	10.18	99% Chebyshev (MVUE) UCL	13.9
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.247	Data do not follow a Discernable Distribution (0.05)	
Theta Star	4.004		
MLE of Mean	8.997		
MLE of Standard Deviation	6.002		
nu star	656.1		
Approximate Chi Square Value (.05)	597.7	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	10.13

	General UCL Statistics for Data Sets with Non-Detects		
User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Adjusted Chi Square Value	597.1	95% Jackknife UCL	10.14
		95% Standard Bootstrap UCL	10.11
Anderson-Darling Test Statistic	3.677	95% Bootstrap-t UCL	10.56
Anderson-Darling 5% Critical Value	0.764	95% Hall's Bootstrap UCL	10.86
Kolmogorov-Smirnov Test Statistic	0.132	95% Percentile Bootstrap UCL	10.17
Kolmogorov-Smirnov 5% Critical Value	0.0785	95% BCA Bootstrap UCL	10.45
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	12.01
		97.5% Chebyshev(Mean, Sd) UCL	13.31
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	15.87
95% Approximate Gamma UCL	9.877		
95% Adjusted Gamma UCL	9.886		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	12.01

Barium

General Statistics			
Number of Valid Observations	146	Number of Distinct Observations	105
Raw Statistics		Log-transformed Statistics	
Minimum	6.6	Minimum of Log Data	1.887
Maximum	2350	Maximum of Log Data	7.762
Mean	169.4	Mean of log Data	4.311
Median	64.8	SD of log Data	1.177
SD	311.1		
Coefficient of Variation	1.836		
Skewness	4.1		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.303	Lilliefors Test Statistic	0.0864
Lilliefors Critical Value	0.0733	Lilliefors Critical Value	0.0733
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	212.1	95% H-UCL	187.9
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	227.8
95% Adjusted-CLT UCL	221.1	97.5% Chebyshev (MVUE) UCL	262.5
95% Modified-t UCL	213.5	99% Chebyshev (MVUE) UCL	330.5
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.721	Data do not follow a Discernable Distribution (0.05)	
Theta Star	235		
MLE of Mean	169.4		
MLE of Standard Deviation	199.5		
nu star	210.6		
Approximate Chi Square Value (.05)	178	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	211.8
Adjusted Chi Square Value	177.7	95% Jackknife UCL	212.1
		95% Standard Bootstrap UCL	212.9
Anderson-Darling Test Statistic	7.68	95% Bootstrap-t UCL	226.1
Anderson-Darling 5% Critical Value	0.797	95% Hall's Bootstrap UCL	222.3
Kolmogorov-Smirnov Test Statistic	0.188	95% Percentile Bootstrap UCL	212.9
Kolmogorov-Smirnov 5% Critical Value	0.0807	95% BCA Bootstrap UCL	218.2
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	281.7
		97.5% Chebyshev(Mean, Sd) UCL	330.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	425.6
95% Approximate Gamma UCL	200.4		
95% Adjusted Gamma UCL	200.8		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	330.2

Benz(a)anthracene

General Statistics			
Number of Valid Data	146	Number of Detected Data	81
Number of Distinct Detected Data	60	Number of Non-Detect Data	65
		Percent Non-Detects	44.52%
Raw Statistics		Log-transformed Statistics	

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum Detected	0.011	Minimum Detected	-4.51
Maximum Detected	19	Maximum Detected	2.944
Mean of Detected	1.242	Mean of Detected	-1.148
SD of Detected	2.872	SD of Detected	1.765
Minimum Non-Detect	0.02	Minimum Non-Detect	-3.912
Maximum Non-Detect	3.5	Maximum Non-Detect	1.253
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	141
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	96.58%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.334	Lilliefors Test Statistic	0.111
5% Lilliefors Critical Value	0.0984	5% Lilliefors Critical Value	0.0984
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.84	Mean	-1.184
SD	2.185	SD	1.372
95% DL/2 (t) UCL	1.14	95% H-Stat (DL/2) UCL	1.305
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.692
		SD in Log Scale	1.503
		Mean in Original Scale	0.738
		SD in Original Scale	2.207
		95% Percentile Bootstrap UCL	1.072
		95% BCA Bootstrap UCL	1.188
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.461	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.695		
nu star	74.65		
A-D Test Statistic	2.155	Nonparametric Statistics	
5% A-D Critical Value	0.826	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.826	Mean	0.75
5% K-S Critical Value	0.105	SD	2.199
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.183
		95% KM (t) UCL	1.053
Assuming Gamma Distribution		95% KM (z) UCL	1.052
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.053
Minimum	0.011	95% KM (bootstrap t) UCL	1.344
Maximum	19	95% KM (BCA) UCL	1.132
Mean	1.236	95% KM (Percentile Bootstrap) UCL	1.068
Median	1.183	95% KM (Chebyshev) UCL	1.55
SD	2.134	97.5% KM (Chebyshev) UCL	1.896
k star	0.774	99% KM (Chebyshev) UCL	2.575
Theta star	1.597		
Nu star	226	Potential UCLs to Use	
AppChi2	192.2	97.5% KM (Chebyshev) UCL	1.896
95% Gamma Approximate UCL	1.453		
95% Adjusted Gamma UCL	1.456		
Note: DL/2 is not a recommended method.			

Benzaldehyde

General Statistics			
Number of Valid Data	38	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	27
		Percent Non-Detects	71.05%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.035	Minimum Detected	-3.352
Maximum Detected	0.22	Maximum Detected	-1.514
Mean of Detected	0.0782	Mean of Detected	-2.702
SD of Detected	0.0535	SD of Detected	0.542
Minimum Non-Detect	0.043	Minimum Non-Detect	-3.147
Maximum Non-Detect	12	Maximum Non-Detect	2.485

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	38
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.75	Shapiro Wilk Test Statistic	0.922
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.945	Mean	-1.261
SD	1.549	SD	1.624
95% DL/2 (t) UCL	1.369	95% H-Stat (DL/2) UCL	4.181
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.829
		SD in Log Scale	0.341
		Mean in Original Scale	0.0633
		SD in Original Scale	0.0309
		95% Percentile Bootstrap UCL	0.0722
		95% BCA Bootstrap UCL	0.0759
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	2.544	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.0307		
nu star	55.96		
A-D Test Statistic	0.555	Nonparametric Statistics	
5% A-D Critical Value	0.733	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.733	Mean	0.0703
5% K-S Critical Value	0.257	SD	0.0478
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0134
		95% KM (t) UCL	0.0929
Assuming Gamma Distribution		95% KM (z) UCL	0.0923
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0932
Minimum	0.03	95% KM (bootstrap t) UCL	0.122
Maximum	0.22	95% KM (BCA) UCL	0.098
Mean	0.0897	95% KM (Percentile Bootstrap) UCL	0.0944
Median	0.101	95% KM (Chebyshev) UCL	0.129
SD	0.0342	97.5% KM (Chebyshev) UCL	0.154
k star	6.389	99% KM (Chebyshev) UCL	0.204
Theta star	0.014		
Nu star	485.5	Potential UCLs to Use	
AppChi2	435.4	95% KM (t) UCL	0.0929
95% Gamma Approximate UCL	0.1		
95% Adjusted Gamma UCL	0.101		
Note: DL/2 is not a recommended method.			

Benzo(a)pyrene

General Statistics			
Number of Valid Data	146	Number of Detected Data	79
Number of Distinct Detected Data	60	Number of Non-Detect Data	67
		Percent Non-Detects	45.89%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0099	Minimum Detected	-4.615
Maximum Detected	17	Maximum Detected	2.833
Mean of Detected	1.221	Mean of Detected	-1.091
SD of Detected	2.594	SD of Detected	1.762
Minimum Non-Detect	0.02	Minimum Non-Detect	-3.912
Maximum Non-Detect	3.5	Maximum Non-Detect	1.253
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	141
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	96.58%
UCL Statistics			

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.32	Lilliefors Test Statistic	0.115
5% Lilliefors Critical Value	0.0997	5% Lilliefors Critical Value	0.0997
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.816	Mean	-1.156
SD	1.959	SD	1.356
95% DL/2 (t) UCL	1.084	95% H-Stat (DL/2) UCL	1.267
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.682
		SD in Log Scale	1.504
		Mean in Original Scale	0.71
		SD in Original Scale	1.982
		95% Percentile Bootstrap UCL	1.003
		95% BCA Bootstrap UCL	1.097
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.483	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	2.529		
nu star	76.28		
A-D Test Statistic	1.598	Nonparametric Statistics	
5% A-D Critical Value	0.82	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.82	Mean	0.726
5% K-S Critical Value	0.106	SD	1.974
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.165
		95% KM (t) UCL	0.999
Assuming Gamma Distribution		95% KM (z) UCL	0.997
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.998
Minimum	0.0099	95% KM (bootstrap t) UCL	1.255
Maximum	17	95% KM (BCA) UCL	1.052
Mean	1.206	95% KM (Percentile Bootstrap) UCL	1.029
Median	1.1	95% KM (Chebyshev) UCL	1.445
SD	1.904	97.5% KM (Chebyshev) UCL	1.756
k star	0.828	99% KM (Chebyshev) UCL	2.366
Theta star	1.455		
Nu star	241.9	Potential UCLs to Use	
AppChi2	206.9	95% KM (BCA) UCL	1.052
95% Gamma Approximate UCL	1.41		
95% Adjusted Gamma UCL	1.412		

Note: DL/2 is not a recommended method.

Benzo(b)fluoranthene

General Statistics			
Number of Valid Data	146	Number of Detected Data	82
Number of Distinct Detected Data	63	Number of Non-Detect Data	64
		Percent Non-Detects	43.84%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.017	Minimum Detected	-4.075
Maximum Detected	18	Maximum Detected	2.89
Mean of Detected	1.15	Mean of Detected	-1.123
SD of Detected	2.567	SD of Detected	1.641
Minimum Non-Detect	0.34	Minimum Non-Detect	-1.079
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	144
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.63%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.329	Lilliefors Test Statistic	0.0944
5% Lilliefors Critical Value	0.0978	5% Lilliefors Critical Value	0.0978
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.874	Mean	-1.099
SD	2.048	SD	1.303
95% DL/2 (t) UCL	1.154	95% H-Stat (DL/2) UCL	1.3
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.561
		SD in Log Scale	1.362
		Mean in Original Scale	0.704
		SD in Original Scale	1.985
		95% Percentile Bootstrap UCL	1.015
		95% BCA Bootstrap UCL	1.12
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.492	Data appear Lognormal at 5% Significance Level	
Theta Star	2.336		
nu star	80.76		
A-D Test Statistic	2.455	Nonparametric Statistics	
5% A-D Critical Value	0.819	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.819	Mean	0.718
5% K-S Critical Value	0.104	SD	1.981
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.166
		95% KM (t) UCL	0.992
Assuming Gamma Distribution		95% KM (z) UCL	0.991
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.992
Minimum	0.017	95% KM (bootstrap t) UCL	1.23
Maximum	18	95% KM (BCA) UCL	1.033
Mean	1.101	95% KM (Percentile Bootstrap) UCL	0.986
Median	0.857	95% KM (Chebyshev) UCL	1.44
SD	1.935	97.5% KM (Chebyshev) UCL	1.753
k star	0.789	99% KM (Chebyshev) UCL	2.367
Theta star	1.395		
Nu star	230.5	Potential UCLs to Use	
AppChi2	196.4	97.5% KM (Chebyshev) UCL	1.753
95% Gamma Approximate UCL	1.292		
95% Adjusted Gamma UCL	1.294		
Note: DL/2 is not a recommended method.			

Benzo(g,h,i)perylene

General Statistics			
Number of Valid Data	146	Number of Detected Data	69
Number of Distinct Detected Data	53	Number of Non-Detect Data	77
		Percent Non-Detects	52.74%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0089	Minimum Detected	-4.722
Maximum Detected	4.4	Maximum Detected	1.482
Mean of Detected	0.782	Mean of Detected	-1.236
SD of Detected	0.964	SD of Detected	1.673
Minimum Non-Detect	0.02	Minimum Non-Detect	-3.912
Maximum Non-Detect	3.5	Maximum Non-Detect	1.253
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	144
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.63%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.211	Lilliefors Test Statistic	0.102
5% Lilliefors Critical Value	0.107	5% Lilliefors Critical Value	0.107
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.543	Mean	-1.245
SD	0.715	SD	1.218
95% DL/2 (t) UCL	0.64	95% H-Stat (DL/2) UCL	0.944
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
MLE method failed to converge properly		Mean in Log Scale	-1.861
		SD in Log Scale	1.368
		Mean in Original Scale	0.425
		SD in Original Scale	0.743
		95% Percentile Bootstrap UCL	0.524
		95% BCA Bootstrap UCL	0.541
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.603	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1.297		
nu star	83.26		
A-D Test Statistic	0.593	Nonparametric Statistics	
5% A-D Critical Value	0.805	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.805	Mean	0.446
5% K-S Critical Value	0.113	SD	0.741
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0632
		95% KM (t) UCL	0.551
Assuming Gamma Distribution		95% KM (z) UCL	0.55
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.551
Minimum	0.0089	95% KM (bootstrap t) UCL	0.574
Maximum	4.4	95% KM (BCA) UCL	0.547
Mean	0.769	95% KM (Percentile Bootstrap) UCL	0.55
Median	0.728	95% KM (Chebyshev) UCL	0.722
SD	0.668	97.5% KM (Chebyshev) UCL	0.841
k star	1.167	99% KM (Chebyshev) UCL	1.076
Theta star	0.659		
Nu star	340.6	Potential UCLs to Use	
AppChi2	298.9	95% KM (t) UCL	0.551
95% Gamma Approximate UCL	0.876		
95% Adjusted Gamma UCL	0.877		

Note: DL/2 is not a recommended method.

Benzo(k)fluoranthene

General Statistics			
Number of Valid Data	146	Number of Detected Data	64
Number of Distinct Detected Data	49	Number of Non-Detect Data	82
		Percent Non-Detects	56.16%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.036	Minimum Detected	-3.324
Maximum Detected	15	Maximum Detected	2.708
Mean of Detected	1.248	Mean of Detected	-0.699
SD of Detected	2.455	SD of Detected	1.352
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	145
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	99.32%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.311	Lilliefors Test Statistic	0.0972
5% Lilliefors Critical Value	0.111	5% Lilliefors Critical Value	0.111
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.781	Mean	-1.316
SD	1.795	SD	1.627
95% DL/2 (t) UCL	1.027	95% H-Stat (DL/2) UCL	1.51
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.836
		SD in Log Scale	1.464
		Mean in Original Scale	0.594
		SD in Original Scale	1.719
		95% Percentile Bootstrap UCL	0.85
		95% BCA Bootstrap UCL	0.957

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.641	Data appear Lognormal at 5% Significance Level	
Theta Star	1.945		
nu star	82.1		
A-D Test Statistic	1.911	Nonparametric Statistics	
5% A-D Critical Value	0.801	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.801	Mean	0.624
5% K-S Critical Value	0.117	SD	1.714
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.144
		95% KM (t) UCL	0.862
Assuming Gamma Distribution		95% KM (z) UCL	0.861
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.857
Minimum	0.036	95% KM (bootstrap t) UCL	1.091
Maximum	15	95% KM (BCA) UCL	0.887
Mean	1.181	95% KM (Percentile Bootstrap) UCL	0.877
Median	1.022	95% KM (Chebyshev) UCL	1.251
SD	1.645	97.5% KM (Chebyshev) UCL	1.522
k star	1.251	99% KM (Chebyshev) UCL	2.055
Theta star	0.944		
Nu star	365.3	Potential UCLs to Use	
AppChi2	322	95% KM (BCA) UCL	0.887
95% Gamma Approximate UCL	1.34		
95% Adjusted Gamma UCL	1.342		

Note: DL/2 is not a recommended method.

bis(2-Ethylhexyl)phthalate

General Statistics			
Number of Valid Data	146	Number of Detected Data	36
Number of Distinct Detected Data	33	Number of Non-Detect Data	110
		Percent Non-Detects	75.34%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.033	Minimum Detected	-3.411
Maximum Detected	2.3	Maximum Detected	0.833
Mean of Detected	0.507	Mean of Detected	-1.64
SD of Detected	0.69	SD of Detected	1.397
Minimum Non-Detect	0.029	Minimum Non-Detect	-3.54
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.691	Shapiro Wilk Test Statistic	0.863
5% Shapiro Wilk Critical Value	0.935	5% Shapiro Wilk Critical Value	0.935
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.505	Mean	-1.412
SD	0.844	SD	1.201
95% DL/2 (t) UCL	0.621	95% H-Stat (DL/2) UCL	0.785
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.617
		SD in Log Scale	1.058
		Mean in Original Scale	0.174
		SD in Original Scale	0.391
		95% Percentile Bootstrap UCL	0.232
		95% BCA Bootstrap UCL	0.244
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.603	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.84		
nu star	43.42		

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
A-D Test Statistic	2.895	Nonparametric Statistics	
5% A-D Critical Value	0.799	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.799	Mean	0.192
5% K-S Critical Value	0.154	SD	0.403
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0361
		95% KM (t) UCL	0.252
Assuming Gamma Distribution		95% KM (z) UCL	0.252
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.251
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.269
Maximum	2.3	95% KM (BCA) UCL	0.256
Mean	0.508	95% KM (Percentile Bootstrap) UCL	0.256
Median	0.52	95% KM (Chebyshev) UCL	0.35
SD	0.473	97.5% KM (Chebyshev) UCL	0.418
k star	0.395	99% KM (Chebyshev) UCL	0.552
Theta star	1.288		
Nu star	115.2	Potential UCLs to Use	
AppChi2	91.44	95% KM (BCA) UCL	0.256
95% Gamma Approximate UCL	0.64		
95% Adjusted Gamma UCL	0.642		
Note: DL/2 is not a recommended method.			

Cadmium

General Statistics			
Number of Valid Data	146	Number of Detected Data	60
Number of Distinct Detected Data	49	Number of Non-Detect Data	86
		Percent Non-Detects	58.90%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.028	Minimum Detected	-3.576
Maximum Detected	203	Maximum Detected	5.313
Mean of Detected	26.3	Mean of Detected	-0.0844
SD of Detected	52.7	SD of Detected	2.778
Minimum Non-Detect	0.55	Minimum Non-Detect	-0.598
Maximum Non-Detect	10	Maximum Non-Detect	2.303
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	132
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	14
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.41%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.414	Lilliefors Test Statistic	0.248
5% Lilliefors Critical Value	0.114	5% Lilliefors Critical Value	0.114
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	11.32	Mean	-0.229
SD	35.89	SD	1.834
95% DL/2 (t) UCL	16.24	95% H-Stat (DL/2) UCL	6.472
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.786
		SD in Log Scale	2.051
		Mean in Original Scale	11.09
		SD in Original Scale	35.96
		95% Percentile Bootstrap UCL	16.3
		95% BCA Bootstrap UCL	17.04
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.217	Data do not follow a Discernable Distribution (0.05)	
Theta Star	121.2		
nu star	26.03		
A-D Test Statistic	8.006	Nonparametric Statistics	
5% A-D Critical Value	0.902	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.902	Mean	10.94
5% K-S Critical Value	0.127	SD	35.88
Data not Gamma Distributed at 5% Significance Level		SE of Mean	2.994
		95% KM (t) UCL	15.9

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Gamma Distribution		95% KM (z) UCL	15.87
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	15.88
Minimum	0.028	95% KM (bootstrap t) UCL	17.14
Maximum	203	95% KM (BCA) UCL	16.04
Mean	25.31	95% KM (Percentile Bootstrap) UCL	15.77
Median	20.97	95% KM (Chebyshev) UCL	24
SD	33.93	97.5% KM (Chebyshev) UCL	29.64
k star	0.457	99% KM (Chebyshev) UCL	40.74
Theta star	55.38		
Nu star	133.4	Potential UCLs to Use	
AppChi2	107.8	97.5% KM (Chebyshev) UCL	29.64
95% Gamma Approximate UCL	31.34		
95% Adjusted Gamma UCL	31.41		

Note: DL/2 is not a recommended method.

Calcium

General Statistics			
Number of Valid Observations	146	Number of Distinct Observations	79
Raw Statistics		Log-transformed Statistics	
Minimum	10000	Minimum of Log Data	9.21
Maximum	420000	Maximum of Log Data	12.95
Mean	226637	Mean of log Data	12.07
Median	262000	SD of log Data	0.858
SD	125928		
Coefficient of Variation	0.556		
Skewness	-0.282		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.13	Lilliefors Test Statistic	0.212
Lilliefors Critical Value	0.0733	Lilliefors Critical Value	0.0733
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	243890	95% H-UCL	291233
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	339926
95% Adjusted-CLT UCL	243520	97.5% Chebyshev (MVUE) UCL	378711
95% Modified-t UCL	243849	99% Chebyshev (MVUE) UCL	454897
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.999	Data do not follow a Discernable Distribution (0.05)	
Theta Star	113386		
MLE of Mean	226637		
MLE of Standard Deviation	160305		
nu star	583.7		
Approximate Chi Square Value (.05)	528.6	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	243780
Adjusted Chi Square Value	528.1	95% Jackknife UCL	243890
		95% Standard Bootstrap UCL	243716
Anderson-Darling Test Statistic	7.097	95% Bootstrap-t UCL	243056
Anderson-Darling 5% Critical Value	0.765	95% Hall's Bootstrap UCL	243269
Kolmogorov-Smirnov Test Statistic	0.195	95% Percentile Bootstrap UCL	243888
Kolmogorov-Smirnov 5% Critical Value	0.0786	95% BCA Bootstrap UCL	243987
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	272065
		97.5% Chebyshev(Mean, Sd) UCL	291722
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	330334
95% Approximate Gamma UCL	250234		
95% Adjusted Gamma UCL	250479		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	272065

Caprolactam

General Statistics			
Number of Valid Data	38	Number of Detected Data	11
Number of Distinct Detected Data	8	Number of Non-Detect Data	27
		Percent Non-Detects	71.05%

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.012	Minimum Detected	-4.423
Maximum Detected	0.05	Maximum Detected	-2.996
Mean of Detected	0.0244	Mean of Detected	-3.795
SD of Detected	0.0107	SD of Detected	0.415
Minimum Non-Detect	0.23	Minimum Non-Detect	-1.47
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	38
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.874	Shapiro Wilk Test Statistic	0.949
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.942	Mean	-1.421
SD	1.551	SD	1.849
95% DL/2 (t) UCL	1.367	95% H-Stat (DL/2) UCL	6.381
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.795
		SD in Log Scale	0.239
		Mean in Original Scale	0.0231
		SD in Original Scale	0.00609
		95% Percentile Bootstrap UCL	0.0249
		95% BCA Bootstrap UCL	0.0251
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	4.711	Data appear Normal at 5% Significance Level	
Theta Star	0.00517		
nu star	103.6		
A-D Test Statistic	0.374	Nonparametric Statistics	
5% A-D Critical Value	0.731	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.731	Mean	0.0244
5% K-S Critical Value	0.256	SD	0.0102
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00323
		95% KM (t) UCL	0.0298
Assuming Gamma Distribution		95% KM (z) UCL	0.0297
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.03
Minimum	0.012	95% KM (bootstrap t) UCL	0.032
Maximum	0.05	95% KM (BCA) UCL	0.0301
Mean	0.0255	95% KM (Percentile Bootstrap) UCL	0.0294
Median	0.0261	95% KM (Chebyshev) UCL	0.0385
SD	0.0061	97.5% KM (Chebyshev) UCL	0.0446
k star	16.56	99% KM (Chebyshev) UCL	0.0565
Theta star	0.00154		
Nu star	1259	Potential UCLs to Use	
AppChi2	1177	95% KM (t) UCL	0.0298
95% Gamma Approximate UCL	0.0272	95% KM (Percentile Bootstrap) UCL	0.0294
95% Adjusted Gamma UCL	0.0273		
Note: DL/2 is not a recommended method.			

Carbazole

General Statistics			
Number of Valid Data	146	Number of Detected Data	33
Number of Distinct Detected Data	27	Number of Non-Detect Data	113
		Percent Non-Detects	77.40%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0016	Minimum Detected	-6.438
Maximum Detected	2	Maximum Detected	0.693
Mean of Detected	0.209	Mean of Detected	-2.798
SD of Detected	0.425	SD of Detected	1.79
Minimum Non-Detect	0.0083	Minimum Non-Detect	-4.791

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.466	Shapiro Wilk Test Statistic	0.928
5% Shapiro Wilk Critical Value	0.931	5% Shapiro Wilk Critical Value	0.931
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.554	Mean	-1.528
SD	0.978	SD	1.56
95% DL/2 (t) UCL	0.688	95% H-Stat (DL/2) UCL	1.519
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.324
		SD in Log Scale	1.14
		Mean in Original Scale	0.0802
		SD in Original Scale	0.214
		95% Percentile Bootstrap UCL	0.112
		95% BCA Bootstrap UCL	0.126
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.487	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	0.429		
nu star	32.13		
A-D Test Statistic	1.052	Nonparametric Statistics	
5% A-D Critical Value	0.81	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.81	Mean	0.113
5% K-S Critical Value	0.162	SD	0.232
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.0242
		95% KM (t) UCL	0.153
Assuming Gamma Distribution		95% KM (z) UCL	0.153
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.153
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.169
Maximum	2	95% KM (BCA) UCL	0.158
Mean	0.209	95% KM (Percentile Bootstrap) UCL	0.157
Median	0.183	95% KM (Chebyshev) UCL	0.219
SD	0.26	97.5% KM (Chebyshev) UCL	0.264
k star	0.276	99% KM (Chebyshev) UCL	0.354
Theta star	0.757		
Nu star	80.55	Potential UCLs to Use	
AppChi2	60.87	95% KM (t) UCL	0.153
95% Gamma Approximate UCL	0.276		
95% Adjusted Gamma UCL	0.277		
Note: DL/2 is not a recommended method.			

Chromium

General Statistics			
Number of Valid Observations	187	Number of Distinct Observations	137
Raw Statistics		Log-transformed Statistics	
Minimum	1.6	Minimum of Log Data	0.47
Maximum	14000	Maximum of Log Data	9.547
Mean	263.3	Mean of log Data	3.63
Median	20.4	SD of log Data	1.742
SD	1095		
Coefficient of Variation	4.158		
Skewness	10.91		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.406	Lilliefors Test Statistic	0.167
Lilliefors Critical Value	0.0648	Lilliefors Critical Value	0.0648
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	395.6	95% H-UCL	249.5
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	311.2
95% Adjusted-CLT UCL	463.2	97.5% Chebyshev (MVUE) UCL	373
95% Modified-t UCL	406.3	99% Chebyshev (MVUE) UCL	494.3
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.345	Data do not follow a Discernable Distribution (0.05)	
Theta Star	763.9		
MLE of Mean	263.3		
MLE of Standard Deviation	448.4		
nu star	128.9		
Approximate Chi Square Value (.05)	103.7	Nonparametric Statistics	
Adjusted Level of Significance	0.0487	95% CLT UCL	395
Adjusted Chi Square Value	103.5	95% Jackknife UCL	395.6
		95% Standard Bootstrap UCL	393.6
Anderson-Darling Test Statistic	19.27	95% Bootstrap-t UCL	599.3
Anderson-Darling 5% Critical Value	0.858	95% Hall's Bootstrap UCL	907.2
Kolmogorov-Smirnov Test Statistic	0.264	95% Percentile Bootstrap UCL	413.4
Kolmogorov-Smirnov 5% Critical Value	0.0723	95% BCA Bootstrap UCL	484.6
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	612.2
		97.5% Chebyshev(Mean, Sd) UCL	763.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1060
95% Approximate Gamma UCL	327.3		
95% Adjusted Gamma UCL	327.9		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	763.2

Chromium VI

General Statistics			
Number of Valid Data	187	Number of Detected Data	145
Number of Distinct Detected Data	108	Number of Non-Detect Data	42
		Percent Non-Detects	22.46%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.037	Minimum Detected	-3.297
Maximum Detected	236.5	Maximum Detected	5.466
Mean of Detected	14.57	Mean of Detected	-0.374
SD of Detected	40.01	SD of Detected	2.355
Minimum Non-Detect	0.4	Minimum Non-Detect	-0.916
Maximum Non-Detect	5.8	Maximum Non-Detect	1.758
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	163
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	24
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	87.17%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.427	Lilliefors Test Statistic	0.169
5% Lilliefors Critical Value	0.0736	5% Lilliefors Critical Value	0.0736
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	11.46	Mean	-0.489
SD	35.68	SD	2.14
95% DL/2 (t) UCL	15.77	95% H-Stat (DL/2) UCL	15.64
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.661
		SD in Log Scale	2.208
		Mean in Original Scale	11.36
		SD in Original Scale	35.71
		95% Percentile Bootstrap UCL	15.9
		95% BCA Bootstrap UCL	16.63
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.235	Data do not follow a Discernable Distribution (0.05)	
Theta Star	62.06		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

nu star	68.07		
A-D Test Statistic	17.93	Nonparametric Statistics	
5% A-D Critical Value	0.897	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.897	Mean	11.35
5% K-S Critical Value	0.0856	SD	35.62
Data not Gamma Distributed at 5% Significance Level		SE of Mean	2.614
		95% KM (t) UCL	15.67
Assuming Gamma Distribution		95% KM (z) UCL	15.65
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	15.67
Minimum	0.037	95% KM (bootstrap t) UCL	17.25
Maximum	236.5	95% KM (BCA) UCL	16.08
Mean	12.86	95% KM (Percentile Bootstrap) UCL	15.78
Median	0.97	95% KM (Chebyshev) UCL	22.74
SD	35.44	97.5% KM (Chebyshev) UCL	27.67
k star	0.282	99% KM (Chebyshev) UCL	37.35
Theta star	45.56		
Nu star	105.5	Potential UCLs to Use	
AppChi2	82.83	97.5% KM (Chebyshev) UCL	27.67
95% Gamma Approximate UCL	16.38		
95% Adjusted Gamma UCL	16.41		

Note: DL/2 is not a recommended method.

Chrysene

General Statistics			
Number of Valid Data	146	Number of Detected Data	91
Number of Distinct Detected Data	69	Number of Non-Detect Data	55
		Percent Non-Detects	37.67%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.013	Minimum Detected	-4.343
Maximum Detected	18	Maximum Detected	2.89
Mean of Detected	1.17	Mean of Detected	-1.157
SD of Detected	2.702	SD of Detected	1.665
Minimum Non-Detect	0.02	Minimum Non-Detect	-3.912
Maximum Non-Detect	3.5	Maximum Non-Detect	1.253
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	141
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	96.58%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.334	Lilliefors Test Statistic	0.0948
5% Lilliefors Critical Value	0.0929	5% Lilliefors Critical Value	0.0929
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.861	Mean	-1.179
SD	2.171	SD	1.37
95% DL/2 (t) UCL	1.159	95% H-Stat (DL/2) UCL	1.32
Maximum Likelihood Estimate(MLE) Method N/A		Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.556
		SD in Log Scale	1.453
		Mean in Original Scale	0.776
		SD in Original Scale	2.189
		95% Percentile Bootstrap UCL	1.101
		95% BCA Bootstrap UCL	1.198
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.477	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.453		
nu star	86.8		
A-D Test Statistic	3.089	Nonparametric Statistics	
5% A-D Critical Value	0.822	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.822	Mean	0.784
5% K-S Critical Value	0.0993	SD	2.182

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.182
		95% KM (t) UCL	1.085
Assuming Gamma Distribution		95% KM (z) UCL	1.083
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.084
Minimum	0.013	95% KM (bootstrap t) UCL	1.324
Maximum	18	95% KM (BCA) UCL	1.155
Mean	1.16	95% KM (Percentile Bootstrap) UCL	1.099
Median	1.072	95% KM (Chebyshev) UCL	1.577
SD	2.129	97.5% KM (Chebyshev) UCL	1.92
k star	0.722	99% KM (Chebyshev) UCL	2.593
Theta star	1.606		
Nu star	210.9	Potential UCLs to Use	
AppChi2	178.3	97.5% KM (Chebyshev) UCL	1.92
95% Gamma Approximate UCL	1.372		
95% Adjusted Gamma UCL	1.374		

Note: DL/2 is not a recommended method.

Cobalt

General Statistics			
Number of Valid Data	146	Number of Detected Data	115
Number of Distinct Detected Data	82	Number of Non-Detect Data	31
		Percent Non-Detects	21.23%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.2	Minimum Detected	-1.609
Maximum Detected	780	Maximum Detected	6.659
Mean of Detected	18.51	Mean of Detected	1.469
SD of Detected	77.11	SD of Detected	1.446
Minimum Non-Detect	6.9	Minimum Non-Detect	1.932
Maximum Non-Detect	52.3	Maximum Non-Detect	3.957
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	140
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	6
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	95.89%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.406	Lilliefors Test Statistic	0.0941
5% Lilliefors Critical Value	0.0826	5% Lilliefors Critical Value	0.0826
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	15.98	Mean	1.539
SD	68.57	SD	1.3
95% DL/2 (t) UCL	25.37	95% H-Stat (DL/2) UCL	18.36
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	1.358
		SD in Log Scale	1.326
		Mean in Original Scale	15.21
		SD in Original Scale	68.68
		95% Percentile Bootstrap UCL	25.67
		95% BCA Bootstrap UCL	33.56
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.44	Data do not follow a Discernable Distribution (0.05)	
Theta Star	42.02		
nu star	101.3		
A-D Test Statistic	8.754	Nonparametric Statistics	
5% A-D Critical Value	0.832	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.832	Mean	15.33
5% K-S Critical Value	0.0912	SD	68.43
Data not Gamma Distributed at 5% Significance Level		SE of Mean	5.69
		95% KM (t) UCL	24.75
Assuming Gamma Distribution		95% KM (z) UCL	24.69
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	24.74
Minimum	1.00E-09	95% KM (bootstrap t) UCL	49.19
Maximum	780	95% KM (BCA) UCL	26.53

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Mean	17.41	95% KM (Percentile Bootstrap) UCL	25.71
Median	5.348	95% KM (Chebyshev) UCL	40.13
SD	68.67	97.5% KM (Chebyshev) UCL	50.86
k star	0.34	99% KM (Chebyshev) UCL	71.94
Theta star	51.21		
Nu star	99.26	Potential UCLs to Use	
AppChi2	77.27	95% KM (Chebyshev) UCL	40.13
95% Gamma Approximate UCL	22.36		
95% Adjusted Gamma UCL	22.41		

Note: DL/2 is not a recommended method.

Constituents of Chlordane (alpha, beta, and gamma)

General Statistics			
Number of Valid Data	73	Number of Detected Data	10
Number of Distinct Detected Data	10	Number of Non-Detect Data	63
		Percent Non-Detects	86.30%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0043	Minimum Detected	-5.449
Maximum Detected	0.58	Maximum Detected	-0.545
Mean of Detected	0.252	Mean of Detected	-2.2
SD of Detected	0.205	SD of Detected	1.812
Minimum Non-Detect	0.0017	Minimum Non-Detect	-6.377
Maximum Non-Detect	0.097	Maximum Non-Detect	-2.333
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	66
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	7
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.41%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.918	Shapiro Wilk Test Statistic	0.802
5% Shapiro Wilk Critical Value	0.842	5% Shapiro Wilk Critical Value	0.842
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0379	Mean	-5.681
SD	0.113	SD	1.754
95% DL/2 (t) UCL	0.0598	95% H-Stat (DL/2) UCL	0.0302
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	0.376	Mean in Log Scale	-8.434
SD	0.135	SD in Log Scale	3.002
95% MLE (t) UCL	0.403	Mean in Original Scale	0.0347
95% MLE (Tiku) UCL	0.461	SD in Original Scale	0.113
		95% Percentile Bootstrap UCL	0.0586
		95% BCA Bootstrap UCL	0.064
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.579	Data appear Normal at 5% Significance Level	
Theta Star	0.434		
nu star	11.59		
A-D Test Statistic	0.775	Nonparametric Statistics	
5% A-D Critical Value	0.758	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.758	Mean	0.0382
5% K-S Critical Value	0.276	SD	0.111
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.0138
		95% KM (t) UCL	0.0611
Assuming Gamma Distribution		95% KM (z) UCL	0.0608
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0568
Minimum	0.0043	95% KM (bootstrap t) UCL	0.0649
Maximum	0.58	95% KM (BCA) UCL	0.2
Mean	0.243	95% KM (Percentile Bootstrap) UCL	0.0799
Median	0.233	95% KM (Chebyshev) UCL	0.0982
SD	0.119	97.5% KM (Chebyshev) UCL	0.124
k star	2.639	99% KM (Chebyshev) UCL	0.175
Theta star	0.0921		
Nu star	385.3	Potential UCLs to Use	

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

AppChi2	340.8	95% KM (t) UCL	0.0611
95% Gamma Approximate UCL	0.275	95% KM (Percentile Bootstrap) UCL	0.0799
95% Adjusted Gamma UCL	0.276		

Note: DL/2 is not a recommended method.

Copper

General Statistics			
Number of Valid Observations	146	Number of Distinct Observations	102
Raw Statistics		Log-transformed Statistics	
Minimum	2.8	Minimum of Log Data	1.03
Maximum	1980	Maximum of Log Data	7.591
Mean	131.9	Mean of log Data	3.082
Median	14	SD of log Data	1.502
SD	357.2		
Coefficient of Variation	2.708		
Skewness	3.242		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.448	Lilliefors Test Statistic	0.171
Lilliefors Critical Value	0.0733	Lilliefors Critical Value	0.0733
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	180.8	95% H-UCL	94.49
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	116.9
95% Adjusted-CLT UCL	189	97.5% Chebyshev (MVUE) UCL	138.8
95% Modified-t UCL	182.2	99% Chebyshev (MVUE) UCL	181.8
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.367	Data do not follow a Discernable Distribution (0.05)	
Theta Star	359.3		
MLE of Mean	131.9		
MLE of Standard Deviation	217.7		
nu star	107.2		
Approximate Chi Square Value (.05)	84.3	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	180.5
Adjusted Chi Square Value	84.1	95% Jackknife UCL	180.8
		95% Standard Bootstrap UCL	179.5
Anderson-Darling Test Statistic	25.09	95% Bootstrap-t UCL	193.2
Anderson-Darling 5% Critical Value	0.851	95% Hall's Bootstrap UCL	190.8
Kolmogorov-Smirnov Test Statistic	0.339	95% Percentile Bootstrap UCL	180.6
Kolmogorov-Smirnov 5% Critical Value	0.0835	95% BCA Bootstrap UCL	192.2
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	260.8
		97.5% Chebyshev(Mean, Sd) UCL	316.5
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	426
95% Approximate Gamma UCL	167.7		
95% Adjusted Gamma UCL	168.1		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	316.5

Cyanide, Total

General Statistics			
Number of Valid Data	139	Number of Detected Data	101
Number of Distinct Detected Data	82	Number of Non-Detect Data	38
		Percent Non-Detects	27.34%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.41	Minimum Detected	-0.892
Maximum Detected	25	Maximum Detected	3.219
Mean of Detected	5.881	Mean of Detected	1.268
SD of Detected	5.437	SD of Detected	1.115
Minimum Non-Detect	0.36	Minimum Non-Detect	-1.022
Maximum Non-Detect	1.36	Maximum Non-Detect	0.307
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	60
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	79

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	43.17%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.157	Lilliefors Test Statistic	0.0813
5% Lilliefors Critical Value	0.0882	5% Lilliefors Critical Value	0.0882
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.378	Mean	0.638
SD	5.241	SD	1.417
95% DL/2 (t) UCL	5.114	95% H-Stat (DL/2) UCL	4.377
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	2.264	Mean in Log Scale	0.714
SD	7.617	SD in Log Scale	1.336
95% MLE (t) UCL	3.334	Mean in Original Scale	4.414
95% MLE (Tiku) UCL	3.498	SD in Original Scale	5.215
		95% Percentile Bootstrap UCL	5.128
		95% BCA Bootstrap UCL	5.159
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.103	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	5.331		
nu star	222.8		
A-D Test Statistic	0.603	Nonparametric Statistics	
5% A-D Critical Value	0.78	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.78	Mean	4.404
5% K-S Critical Value	0.0916	SD	5.202
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.443
		95% KM (t) UCL	5.139
Assuming Gamma Distribution		95% KM (z) UCL	5.134
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	5.137
Minimum	1.00E-09	95% KM (bootstrap t) UCL	5.218
Maximum	25	95% KM (BCA) UCL	5.112
Mean	4.695	95% KM (Percentile Bootstrap) UCL	5.147
Median	2.77	95% KM (Chebyshev) UCL	6.337
SD	5.062	97.5% KM (Chebyshev) UCL	7.174
k star	0.382	99% KM (Chebyshev) UCL	8.817
Theta star	12.29		
Nu star	106.2	Potential UCLs to Use	
AppChi2	83.38	95% KM (Percentile Bootstrap) UCL	5.147
95% Gamma Approximate UCL	5.977		
95% Adjusted Gamma UCL	5.992		

Note: DL/2 is not a recommended method.

delta-BHC

General Statistics			
Number of Valid Data	132	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	127
		Percent Non-Detects	96.21%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	5.40E-04	Minimum Detected	-7.524
Maximum Detected	0.0073	Maximum Detected	-4.92
Mean of Detected	0.00273	Mean of Detected	-6.296
SD of Detected	0.00272	SD of Detected	1.002
Minimum Non-Detect	4.30E-04	Minimum Non-Detect	-7.752
Maximum Non-Detect	0.19	Maximum Non-Detect	-1.661
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	132
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.836	Shapiro Wilk Test Statistic	0.992
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00695	Mean	-5.95
SD	0.014	SD	1.212
95% DL/2 (t) UCL	0.00897	95% H-Stat (DL/2) UCL	0.00709
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-7.573
		SD in Log Scale	0.589
		Mean in Original Scale	6.36E-04
		SD in Original Scale	6.89E-04
		95% Percentile Bootstrap UCL	7.43E-04
		95% BCA Bootstrap UCL	7.94E-04
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.701	Data appear Normal at 5% Significance Level	
Theta Star	0.00389		
nu star	7.01		
A-D Test Statistic	0.227	Nonparametric Statistics	
5% A-D Critical Value	0.687	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.687	Mean	8.48E-04
5% K-S Critical Value	0.362	SD	7.78E-04
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	1.64E-04
		95% KM (t) UCL	0.00112
Assuming Gamma Distribution		95% KM (z) UCL	0.00112
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0012
Minimum	5.40E-04	95% KM (bootstrap t) UCL	0.00116
Maximum	0.0073	95% KM (BCA) UCL	0.00304
Mean	0.00278	95% KM (Percentile Bootstrap) UCL	0.00203
Median	0.00277	95% KM (Chebyshev) UCL	0.00156
SD	5.00E-04	97.5% KM (Chebyshev) UCL	0.00187
k star	30.02	99% KM (Chebyshev) UCL	0.00248
Theta star	9.26E-05		
Nu star	7925	Potential UCLs to Use	
AppChi2	7719	95% KM (t) UCL	0.00112
95% Gamma Approximate UCL	0.00285	95% KM (Percentile Bootstrap) UCL	0.00203
95% Adjusted Gamma UCL	0.00285		

Note: DL/2 is not a recommended method.

Dibenz(a,h)anthracene

General Statistics			
Number of Valid Data	146	Number of Detected Data	43
Number of Distinct Detected Data	39	Number of Non-Detect Data	103
		Percent Non-Detects	70.55%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.002	Minimum Detected	-6.215
Maximum Detected	2.3	Maximum Detected	0.833
Mean of Detected	0.34	Mean of Detected	-2.189
SD of Detected	0.511	SD of Detected	1.813
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.652	Shapiro Wilk Test Statistic	0.93

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
5% Shapiro Wilk Critical Value	0.943	5% Shapiro Wilk Critical Value	0.943
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.563	Mean	-1.457
SD	0.971	SD	1.511
95% DL/2 (t) UCL	0.696	95% H-Stat (DL/2) UCL	1.573
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.793
		SD in Log Scale	1.236
		Mean in Original Scale	0.144
		SD in Original Scale	0.305
		95% Percentile Bootstrap UCL	0.187
		95% BCA Bootstrap UCL	0.201
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.539	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.63		
nu star	46.34		
A-D Test Statistic	0.512	Nonparametric Statistics	
5% A-D Critical Value	0.807	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.807	Mean	0.191
5% K-S Critical Value	0.142	SD	0.323
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.032
		95% KM (t) UCL	0.244
Assuming Gamma Distribution		95% KM (z) UCL	0.243
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.244
Minimum	0.002	95% KM (bootstrap t) UCL	0.255
Maximum	2.3	95% KM (BCA) UCL	0.246
Mean	0.314	95% KM (Percentile Bootstrap) UCL	0.245
Median	0.298	95% KM (Chebyshev) UCL	0.33
SD	0.307	97.5% KM (Chebyshev) UCL	0.39
k star	1.215	99% KM (Chebyshev) UCL	0.509
Theta star	0.259		
Nu star	354.8	Potential UCLs to Use	
AppChi2	312.2	95% KM (t) UCL	0.244
95% Gamma Approximate UCL	0.357		
95% Adjusted Gamma UCL	0.358		
Note: DL/2 is not a recommended method.			

Dibenzofuran

General Statistics			
Number of Valid Data	146	Number of Detected Data	42
Number of Distinct Detected Data	36	Number of Non-Detect Data	104
		Percent Non-Detects	71.23%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0018	Minimum Detected	-6.32
Maximum Detected	3.6	Maximum Detected	1.281
Mean of Detected	0.34	Mean of Detected	-2.727
SD of Detected	0.754	SD of Detected	1.966
Minimum Non-Detect	0.026	Minimum Non-Detect	-3.65
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.483	Shapiro Wilk Test Statistic	0.907
5% Shapiro Wilk Critical Value	0.942	5% Shapiro Wilk Critical Value	0.942
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.625	Mean	-1.436

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
SD	1.04	SD	1.57
95% DL/2 (t) UCL	0.768	95% H-Stat (DL/2) UCL	1.755
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.099
		SD in Log Scale	1.254
		Mean in Original Scale	0.135
		SD in Original Scale	0.424
		95% Percentile Bootstrap UCL	0.195
		95% BCA Bootstrap UCL	0.216
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.387	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.88		
nu star	32.48		
A-D Test Statistic	2.058	Nonparametric Statistics	
5% A-D Critical Value	0.836	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.836	Mean	0.165
5% K-S Critical Value	0.146	SD	0.445
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0409
		95% KM (t) UCL	0.233
Assuming Gamma Distribution		95% KM (z) UCL	0.233
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.233
Minimum	0.0018	95% KM (bootstrap t) UCL	0.282
Maximum	3.6	95% KM (BCA) UCL	0.236
Mean	0.345	95% KM (Percentile Bootstrap) UCL	0.237
Median	0.348	95% KM (Chebyshev) UCL	0.343
SD	0.401	97.5% KM (Chebyshev) UCL	0.421
k star	1.171	99% KM (Chebyshev) UCL	0.572
Theta star	0.294		
Nu star	341.9	Potential UCLs to Use	
AppChi2	300.1	95% KM (Chebyshev) UCL	0.343
95% Gamma Approximate UCL	0.393		
95% Adjusted Gamma UCL	0.393		

Note: DL/2 is not a recommended method.

Dieldrin

General Statistics			
Number of Valid Data	132	Number of Detected Data	33
Number of Distinct Detected Data	32	Number of Non-Detect Data	99
		Percent Non-Detects	75.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.00E-04	Minimum Detected	-7.824
Maximum Detected	1.6	Maximum Detected	0.47
Mean of Detected	0.278	Mean of Detected	-2.84
SD of Detected	0.377	SD of Detected	2.331
Minimum Non-Detect	3.50E-04	Minimum Non-Detect	-7.958
Maximum Non-Detect	0.081	Maximum Non-Detect	-2.513
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	115
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	17
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	87.12%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.761	Shapiro Wilk Test Statistic	0.929
5% Shapiro Wilk Critical Value	0.931	5% Shapiro Wilk Critical Value	0.931
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0738	Mean	-4.923
SD	0.221	SD	1.809
95% DL/2 (t) UCL	0.106	95% H-Stat (DL/2) UCL	0.0527
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-6.599
		SD in Log Scale	2.709

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mean in Original Scale	0.0702
SD in Original Scale	0.222
95% Percentile Bootstrap UCL	0.106
95% BCA Bootstrap UCL	0.111

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.401	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.695		
nu star	26.43		
A-D Test Statistic	0.588	Nonparametric Statistics	
5% A-D Critical Value	0.829	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.829	Mean	0.0707
5% K-S Critical Value	0.164	SD	0.221
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0195
		95% KM (t) UCL	0.103
Assuming Gamma Distribution		95% KM (z) UCL	0.103
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.103
Minimum	4.00E-04	95% KM (bootstrap t) UCL	0.114
Maximum	1.6	95% KM (BCA) UCL	0.108
Mean	0.278	95% KM (Percentile Bootstrap) UCL	0.103
Median	0.276	95% KM (Chebyshev) UCL	0.156
SD	0.187	97.5% KM (Chebyshev) UCL	0.193
k star	1.396	99% KM (Chebyshev) UCL	0.265
Theta star	0.199		
Nu star	368.4	Potential UCLs to Use	
AppChi2	325	95% KM (t) UCL	0.103
95% Gamma Approximate UCL	0.315		
95% Adjusted Gamma UCL	0.316		

Note: DL/2 is not a recommended method.

Endosulfan I

General Statistics			
Number of Valid Data	132	Number of Detected Data	3
Number of Distinct Detected Data	2	Number of Non-Detect Data	129
		Percent Non-Detects	97.73%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0037	Minimum Detected	-5.599
Maximum Detected	0.0083	Maximum Detected	-4.791
Mean of Detected	0.00523	Mean of Detected	-5.33
SD of Detected	0.00266	SD of Detected	0.466
Minimum Non-Detect	0.0017	Minimum Non-Detect	-6.377
Maximum Non-Detect	0.19	Maximum Non-Detect	-1.661
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	132
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.75	Shapiro Wilk Test Statistic	0.75
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00697	Mean	-5.933
SD	0.014	SD	1.192
95% DL/2 (t) UCL	0.00899	95% H-Stat (DL/2) UCL	0.00715
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-8.313
		SD in Log Scale	0.884
		Mean in Original Scale	4.14E-04
		SD in Original Scale	8.41E-04
		95% Percentile Bootstrap UCL	5.48E-04
		95% BCA Bootstrap UCL	6.00E-04
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.00375
5% K-S Critical Value	N/A	SD	4.58E-04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	5.61E-05
		95% KM (t) UCL	0.00384
Assuming Gamma Distribution		95% KM (z) UCL	0.00384
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00382
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.0083
Median	N/A	95% KM (Chebyshev) UCL	0.00399
SD	N/A	97.5% KM (Chebyshev) UCL	0.0041
k star	N/A	99% KM (Chebyshev) UCL	0.0043
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.00384
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	0.0083
95% Adjusted Gamma UCL	N/A		
Note: DL/2 is not a recommended method.			

Ethylbenzene

General Statistics			
Number of Valid Data	145	Number of Detected Data	12
Number of Distinct Detected Data	12	Number of Non-Detect Data	133
		Percent Non-Detects	91.72%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0017	Minimum Detected	-6.377
Maximum Detected	1.8	Maximum Detected	0.588
Mean of Detected	0.173	Mean of Detected	-4.112
SD of Detected	0.514	SD of Detected	1.893
Minimum Non-Detect	0.0025	Minimum Non-Detect	-5.991
Maximum Non-Detect	0.023	Maximum Non-Detect	-3.772
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	142
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.93%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.376	Shapiro Wilk Test Statistic	0.829
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0168	Mean	-5.878
SD	0.15	SD	0.891
95% DL/2 (t) UCL	0.0374	95% H-Stat (DL/2) UCL	0.00434
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
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Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MLE yields a negative mean		Mean in Log Scale	-7.754
		SD in Log Scale	1.636
		Mean in Original Scale	0.0148
		SD in Original Scale	0.15
		95% Percentile Bootstrap UCL	0.0397
		95% BCA Bootstrap UCL	0.0525
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.276	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.627		
nu star	6.618		
A-D Test Statistic	2.011	Nonparametric Statistics	
5% A-D Critical Value	0.827	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.827	Mean	0.0159
5% K-S Critical Value	0.266	SD	0.149
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0129
		95% KM (t) UCL	0.0374
Assuming Gamma Distribution		95% KM (z) UCL	0.0372
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0342
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.37
Maximum	1.8	95% KM (BCA) UCL	0.0517
Mean	0.145	95% KM (Percentile Bootstrap) UCL	0.0419
Median	0.166	95% KM (Chebyshev) UCL	0.0724
SD	0.158	97.5% KM (Chebyshev) UCL	0.0968
k star	0.304	99% KM (Chebyshev) UCL	0.145
Theta star	0.478		
Nu star	88.24	Potential UCLs to Use	
AppChi2	67.58	95% KM (Chebyshev) UCL	0.0724
95% Gamma Approximate UCL	0.19		
95% Adjusted Gamma UCL	0.19		

Note: DL/2 is not a recommended method.

Fluoranthene

General Statistics			
Number of Valid Data	146	Number of Detected Data	108
Number of Distinct Detected Data	83	Number of Non-Detect Data	38
		Percent Non-Detects	26.03%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.02	Minimum Detected	-3.912
Maximum Detected	30	Maximum Detected	3.401
Mean of Detected	1.796	Mean of Detected	-0.921
SD of Detected	4.708	SD of Detected	1.729
Minimum Non-Detect	0.34	Minimum Non-Detect	-1.079
Maximum Non-Detect	3.5	Maximum Non-Detect	1.253
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	132
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	14
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.41%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.353	Lilliefors Test Statistic	0.108
5% Lilliefors Critical Value	0.0853	5% Lilliefors Critical Value	0.0853
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.428	Mean	-0.967
SD	4.094	SD	1.508
95% DL/2 (t) UCL	1.989	95% H-Stat (DL/2) UCL	1.981
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.169
		SD in Log Scale	1.553
		Mean in Original Scale	1.37
		SD in Original Scale	4.108
		95% Percentile Bootstrap UCL	2.013
		95% BCA Bootstrap UCL	2.168

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.426	Data do not follow a Discernable Distribution (0.05)	
Theta Star	4.218		
nu star	91.95		
A-D Test Statistic	5.055	Nonparametric Statistics	
5% A-D Critical Value	0.835	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.835	Mean	1.373
5% K-S Critical Value	0.0933	SD	4.095
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.341
		95% KM (t) UCL	1.937
Assuming Gamma Distribution		95% KM (z) UCL	1.933
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.936
Minimum	0.02	95% KM (bootstrap t) UCL	2.288
Maximum	30	95% KM (BCA) UCL	1.959
Mean	1.635	95% KM (Percentile Bootstrap) UCL	1.97
Median	0.825	95% KM (Chebyshev) UCL	2.858
SD	4.061	97.5% KM (Chebyshev) UCL	3.5
k star	0.537	99% KM (Chebyshev) UCL	4.762
Theta star	3.045		
Nu star	156.8	Potential UCLs to Use	
AppChi2	128.9	97.5% KM (Chebyshev) UCL	3.5
95% Gamma Approximate UCL	1.99		
95% Adjusted Gamma UCL	1.994		

Note: DL/2 is not a recommended method.

Fluorene

General Statistics			
Number of Valid Data	145	Number of Detected Data	26
Number of Distinct Detected Data	25	Number of Non-Detect Data	119
		Percent Non-Detects	82.07%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0046	Minimum Detected	-5.382
Maximum Detected	8.6	Maximum Detected	2.152
Mean of Detected	0.642	Mean of Detected	-1.622
SD of Detected	1.696	SD of Detected	1.413
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	145
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.36	Shapiro Wilk Test Statistic	0.939
5% Shapiro Wilk Critical Value	0.92	5% Shapiro Wilk Critical Value	0.92
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.609	Mean	-1.469
SD	1.184	SD	1.545
95% DL/2 (t) UCL	0.772	95% H-Stat (DL/2) UCL	1.287
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.765
		SD in Log Scale	1.051
		Mean in Original Scale	0.168
		SD in Original Scale	0.742
		95% Percentile Bootstrap UCL	0.281
		95% BCA Bootstrap UCL	0.381
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.498	Data appear Lognormal at 5% Significance Level	
Theta Star	1.29		
nu star	25.87		

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

A-D Test Statistic	2.364	Nonparametric Statistics	
5% A-D Critical Value	0.805	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.805	Mean	0.2
5% K-S Critical Value	0.181	SD	0.75
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0663
		95% KM (t) UCL	0.309
Assuming Gamma Distribution		95% KM (z) UCL	0.309
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.298
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.472
Maximum	8.6	95% KM (BCA) UCL	0.348
Mean	0.985	95% KM (Percentile Bootstrap) UCL	0.322
Median	1.017	95% KM (Chebyshev) UCL	0.488
SD	1.12	97.5% KM (Chebyshev) UCL	0.614
k star	0.213	99% KM (Chebyshev) UCL	0.859
Theta star	4.632		
Nu star	61.66	Potential UCLs to Use	
AppChi2	44.6	95% KM (BCA) UCL	0.348
95% Gamma Approximate UCL	1.362		
95% Adjusted Gamma UCL	1.366		

Note: DL/2 is not a recommended method.

Hexachlorobenzene

General Statistics			
Number of Valid Data	148	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	143
		Percent Non-Detects	96.62%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.51	Minimum Detected	-0.673
Maximum Detected	2.7	Maximum Detected	0.993
Mean of Detected	1.562	Mean of Detected	0.286
SD of Detected	0.907	SD of Detected	0.665
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	148
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.925	Shapiro Wilk Test Statistic	0.935
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.559	Mean	-1.369
SD	0.862	SD	1.475
95% DL/2 (t) UCL	0.676	95% H-Stat (DL/2) UCL	0.992
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.899
		SD in Log Scale	1.183
		Mean in Original Scale	0.0778
		SD in Original Scale	0.317
		95% Percentile Bootstrap UCL	0.122
		95% BCA Bootstrap UCL	0.149
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.447	Data appear Normal at 5% Significance Level	
Theta Star	1.079		
nu star	14.47		

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

A-D Test Statistic	0.292	Nonparametric Statistics	
5% A-D Critical Value	0.682	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.682	Mean	0.55
5% K-S Critical Value	0.359	SD	0.254
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0246
		95% KM (t) UCL	0.59
Assuming Gamma Distribution		95% KM (z) UCL	0.59
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.923
Minimum	0.51	95% KM (bootstrap t) UCL	0.592
Maximum	2.7	95% KM (BCA) UCL	2.3
Mean	1.562	95% KM (Percentile Bootstrap) UCL	2.3
Median	1.562	95% KM (Chebyshev) UCL	0.657
SD	0.15	97.5% KM (Chebyshev) UCL	0.703
k star	90.86	99% KM (Chebyshev) UCL	0.795
Theta star	0.0172		
Nu star	26895	Potential UCLs to Use	
AppChi2	26515	95% KM (t) UCL	0.59
95% Gamma Approximate UCL	1.584	95% KM (Percentile Bootstrap) UCL	2.3
95% Adjusted Gamma UCL	1.585		

Note: DL/2 is not a recommended method.

Indeno(1,2,3-c,d)pyrene

General Statistics			
Number of Valid Data	146	Number of Detected Data	68
Number of Distinct Detected Data	56	Number of Non-Detect Data	78
		Percent Non-Detects	53.42%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0051	Minimum Detected	-5.279
Maximum Detected	5.4	Maximum Detected	1.686
Mean of Detected	0.689	Mean of Detected	-1.366
SD of Detected	0.954	SD of Detected	1.667
Minimum Non-Detect	0.02	Minimum Non-Detect	-3.912
Maximum Non-Detect	3.8	Maximum Non-Detect	1.335
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	144
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.63%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.237	Lilliefors Test Statistic	0.129
5% Lilliefors Critical Value	0.107	5% Lilliefors Critical Value	0.107
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.507	Mean	-1.293
SD	0.7	SD	1.218
95% DL/2 (t) UCL	0.603	95% H-Stat (DL/2) UCL	0.925
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.973
		SD in Log Scale	1.346
		Mean in Original Scale	0.372
		SD in Original Scale	0.714
		95% Percentile Bootstrap UCL	0.477
		95% BCA Bootstrap UCL	0.495
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.602	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1.146		
nu star	81.81		
A-D Test Statistic	0.627	Nonparametric Statistics	
5% A-D Critical Value	0.805	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.805	Mean	0.398
5% K-S Critical Value	0.113	SD	0.713
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.061

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
		95% KM (t) UCL	0.499
Assuming Gamma Distribution		95% KM (z) UCL	0.498
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.499
Minimum	0.0051	95% KM (bootstrap t) UCL	0.533
Maximum	5.4	95% KM (BCA) UCL	0.508
Mean	0.683	95% KM (Percentile Bootstrap) UCL	0.502
Median	0.669	95% KM (Chebyshev) UCL	0.664
SD	0.653	97.5% KM (Chebyshev) UCL	0.779
k star	1.184	99% KM (Chebyshev) UCL	1.005
Theta star	0.577		
Nu star	345.7	Potential UCLs to Use	
AppChi2	303.6	95% KM (t) UCL	0.499
95% Gamma Approximate UCL	0.778		
95% Adjusted Gamma UCL	0.779		

Note: DL/2 is not a recommended method.

Iron

General Statistics			
Number of Valid Observations	146	Number of Distinct Observations	102
Raw Statistics		Log-transformed Statistics	
Minimum	1500	Minimum of Log Data	7.313
Maximum	180000	Maximum of Log Data	12.1
Mean	12916	Mean of log Data	9.105
Median	7710	SD of log Data	0.783
SD	17937		
Coefficient of Variation	1.389		
Skewness	6.789		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.262	Lilliefors Test Statistic	0.0986
Lilliefors Critical Value	0.0733	Lilliefors Critical Value	0.0733
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	15373	95% H-UCL	13946
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	16100
95% Adjusted-CLT UCL	16249	97.5% Chebyshev (MVUE) UCL	17789
95% Modified-t UCL	15512	99% Chebyshev (MVUE) UCL	21106
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.504	Data do not follow a Discernable Distribution (0.05)	
Theta Star	8589		
MLE of Mean	12916		
MLE of Standard Deviation	10533		
nu star	439.1		
Approximate Chi Square Value (.05)	391.5	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	15358
Adjusted Chi Square Value	391.1	95% Jackknife UCL	15373
		95% Standard Bootstrap UCL	15418
Anderson-Darling Test Statistic	3.425	95% Bootstrap-t UCL	17749
Anderson-Darling 5% Critical Value	0.77	95% Hall's Bootstrap UCL	27695
Kolmogorov-Smirnov Test Statistic	0.133	95% Percentile Bootstrap UCL	15495
Kolmogorov-Smirnov 5% Critical Value	0.079	95% BCA Bootstrap UCL	16481
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	19387
		97.5% Chebyshev(Mean, Sd) UCL	22187
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	27686
95% Approximate Gamma UCL	14486		
95% Adjusted Gamma UCL	14502		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	19387

Lead

General Statistics			
Number of Valid Observations	146	Number of Distinct Observations	98
Raw Statistics		Log-transformed Statistics	

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum	1.9	Minimum of Log Data	0.642
Maximum	1670	Maximum of Log Data	7.421
Mean	133.9	Mean of log Data	3.375
Median	21.6	SD of log Data	1.443
SD	335.6		
Coefficient of Variation	2.506		
Skewness	3.053		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.403	Lilliefors Test Statistic	0.15
Lilliefors Critical Value	0.0733	Lilliefors Critical Value	0.0733
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	179.9	95% H-UCL	113.6
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	140.3
95% Adjusted-CLT UCL	187.1	97.5% Chebyshev (MVUE) UCL	165.7
95% Modified-t UCL	181.1	99% Chebyshev (MVUE) UCL	215.6
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.424	Data do not follow a Discernable Distribution (0.05)	
Theta Star	316.2		
MLE of Mean	133.9		
MLE of Standard Deviation	205.8		
nu star	123.7		
Approximate Chi Square Value (.05)	98.99	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	179.6
Adjusted Chi Square Value	98.77	95% Jackknife UCL	179.9
		95% Standard Bootstrap UCL	180.7
Anderson-Darling Test Statistic	19.64	95% Bootstrap-t UCL	190
Anderson-Darling 5% Critical Value	0.837	95% Hall's Bootstrap UCL	188.4
Kolmogorov-Smirnov Test Statistic	0.28	95% Percentile Bootstrap UCL	183.6
Kolmogorov-Smirnov 5% Critical Value	0.0828	95% BCA Bootstrap UCL	191.4
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	255
		97.5% Chebyshev(Mean, Sd) UCL	307.4
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	410.2
95% Approximate Gamma UCL	167.3		
95% Adjusted Gamma UCL	167.7		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	307.4

Manganese

General Statistics			
Number of Valid Observations	146	Number of Distinct Observations	86
Raw Statistics		Log-transformed Statistics	
Minimum	41.2	Minimum of Log Data	3.718
Maximum	5100	Maximum of Log Data	8.537
Mean	394.6	Mean of log Data	5.709
Median	320	SD of log Data	0.667
SD	499.2		
Coefficient of Variation	1.265		
Skewness	7.076		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.266	Lilliefors Test Statistic	0.0798
Lilliefors Critical Value	0.0733	Lilliefors Critical Value	0.0733
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	463	95% H-UCL	419.3
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	475.3
95% Adjusted-CLT UCL	488.4	97.5% Chebyshev (MVUE) UCL	518.4
95% Modified-t UCL	467	99% Chebyshev (MVUE) UCL	602.8
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.973	Data do not follow a Discernable Distribution (0.05)	
Theta Star	200		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
MLE of Mean	394.6		
MLE of Standard Deviation	280.9		
nu star	576.2		
Approximate Chi Square Value (.05)	521.5	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	462.5
Adjusted Chi Square Value	521	95% Jackknife UCL	463
		95% Standard Bootstrap UCL	462.2
Anderson-Darling Test Statistic	3.53	95% Bootstrap-t UCL	531.7
Anderson-Darling 5% Critical Value	0.766	95% Hall's Bootstrap UCL	769.8
Kolmogorov-Smirnov Test Statistic	0.118	95% Percentile Bootstrap UCL	471.8
Kolmogorov-Smirnov 5% Critical Value	0.0786	95% BCA Bootstrap UCL	514.1
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	574.6
		97.5% Chebyshev(Mean, Sd) UCL	652.6
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	805.6
95% Approximate Gamma UCL	435.9		
95% Adjusted Gamma UCL	436.4		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	574.6

Mercury

General Statistics			
Number of Valid Observations	148	Number of Distinct Observations	89
Raw Statistics		Log-transformed Statistics	
Minimum	0.012	Minimum of Log Data	-4.423
Maximum	11.5	Maximum of Log Data	2.442
Mean	0.873	Mean of log Data	-1.91
Median	0.11	SD of log Data	1.536
SD	2.349		
Coefficient of Variation	2.691		
Skewness	3.094		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.433	Lilliefors Test Statistic	0.177
Lilliefors Critical Value	0.0728	Lilliefors Critical Value	0.0728
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1.193	95% H-UCL	0.683
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.845
95% Adjusted-CLT UCL	1.243	97.5% Chebyshev (MVUE) UCL	1.005
95% Modified-t UCL	1.201	99% Chebyshev (MVUE) UCL	1.321
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.372	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.348		
MLE of Mean	0.873		
MLE of Standard Deviation	1.432		
nu star	110		
Approximate Chi Square Value (.05)	86.81	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	1.191
Adjusted Chi Square Value	86.61	95% Jackknife UCL	1.193
		95% Standard Bootstrap UCL	1.185
Anderson-Darling Test Statistic	22.27	95% Bootstrap-t UCL	1.268
Anderson-Darling 5% Critical Value	0.85	95% Hall's Bootstrap UCL	1.244
Kolmogorov-Smirnov Test Statistic	0.337	95% Percentile Bootstrap UCL	1.194
Kolmogorov-Smirnov 5% Critical Value	0.0829	95% BCA Bootstrap UCL	1.293
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1.715
		97.5% Chebyshev(Mean, Sd) UCL	2.079
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	2.794
95% Approximate Gamma UCL	1.106		
95% Adjusted Gamma UCL	1.109		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	2.079

Methyl Mercury (Derived)

General Statistics

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Valid Observations	147	Number of Distinct Observations	89
Raw Statistics		Log-transformed Statistics	
Minimum	1.20E-04	Minimum of Log Data	-9.028
Maximum	0.115	Maximum of Log Data	-2.163
Mean	0.00879	Mean of log Data	-6.501
Median	0.0011	SD of log Data	1.532
SD	0.0236		
Coefficient of Variation	2.681		
Skewness	3.08		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.433	Lilliefors Test Statistic	0.179
Lilliefors Critical Value	0.0731	Lilliefors Critical Value	0.0731
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.012	95% H-UCL	0.00687
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0085
95% Adjusted-CLT UCL	0.0125	97.5% Chebyshev (MVUE) UCL	0.0101
95% Modified-t UCL	0.0121	99% Chebyshev (MVUE) UCL	0.0133
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.373	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0236		
MLE of Mean	0.00879		
MLE of Standard Deviation	0.0144		
nu star	109.7		
Approximate Chi Square Value (.05)	86.5	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	0.012
Adjusted Chi Square Value	86.3	95% Jackknife UCL	0.012
		95% Standard Bootstrap UCL	0.0121
Anderson-Darling Test Statistic	22.24	95% Bootstrap-t UCL	0.0128
Anderson-Darling 5% Critical Value	0.85	95% Hall's Bootstrap UCL	0.0122
Kolmogorov-Smirnov Test Statistic	0.338	95% Percentile Bootstrap UCL	0.0123
Kolmogorov-Smirnov 5% Critical Value	0.0831	95% BCA Bootstrap UCL	0.0128
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0173
		97.5% Chebyshev(Mean, Sd) UCL	0.0209
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0281
95% Approximate Gamma UCL	0.0111		
95% Adjusted Gamma UCL	0.0112		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	0.0209

Naphthalene

General Statistics			
Number of Valid Data	146	Number of Detected Data	58
Number of Distinct Detected Data	50	Number of Non-Detect Data	88
		Percent Non-Detects	60.27%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.018	Minimum Detected	-4.017
Maximum Detected	360	Maximum Detected	5.886
Mean of Detected	8.701	Mean of Detected	-1.211
SD of Detected	47.63	SD of Detected	2.058
Minimum Non-Detect	0.34	Minimum Non-Detect	-1.079
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	141
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	96.58%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.455	Lilliefors Test Statistic	0.147
5% Lilliefors Critical Value	0.116	5% Lilliefors Critical Value	0.116
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

DL/2 Substitution Method		DL/2 Substitution Method	
Mean	3.931	Mean	-1.007
SD	30.13	SD	1.503
95% DL/2 (t) UCL	8.059	95% H-Stat (DL/2) UCL	1.882
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.733
		SD in Log Scale	1.459
		Mean in Original Scale	3.55
		SD in Original Scale	30.16
		95% Percentile Bootstrap UCL	8.466
		95% BCA Bootstrap UCL	12.97
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.216	Data do not follow a Discernable Distribution (0.05)	
Theta Star	40.3		
nu star	25.04		
A-D Test Statistic	9.509	Nonparametric Statistics	
5% A-D Critical Value	0.902	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.902	Mean	3.556
5% K-S Critical Value	0.129	SD	30.06
Data not Gamma Distributed at 5% Significance Level		SE of Mean	2.509
		95% KM (t) UCL	7.71
Assuming Gamma Distribution		95% KM (z) UCL	7.683
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	7.688
Minimum	0.018	95% KM (bootstrap t) UCL	33.72
Maximum	360	95% KM (BCA) UCL	8.743
Mean	8.61	95% KM (Percentile Bootstrap) UCL	8.408
Median	8.397	95% KM (Chebyshev) UCL	14.49
SD	29.87	97.5% KM (Chebyshev) UCL	19.23
k star	0.472	99% KM (Chebyshev) UCL	28.52
Theta star	18.24		
Nu star	137.8	Potential UCLs to Use	
AppChi2	111.7	97.5% KM (Chebyshev) UCL	19.23
95% Gamma Approximate UCL	10.62		
95% Adjusted Gamma UCL	10.65		

Note: DL/2 is not a recommended method.

n-Butylbenzene

General Statistics			
Number of Valid Data	2	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	1
		Percent Non-Detects	50.00%

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable n-Butylbenzene was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Nickel

General Statistics			
Number of Valid Observations	146	Number of Distinct Observations	89
Raw Statistics		Log-transformed Statistics	
Minimum	3.2	Minimum of Log Data	1.163
Maximum	9800	Maximum of Log Data	9.19
Mean	152.7	Mean of log Data	3.234
Median	15	SD of log Data	1.291
SD	932.5		
Coefficient of Variation	6.106		
Skewness	9.212		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Lilliefors Test Statistic	0.436	Lilliefors Test Statistic	0.17
Lilliefors Critical Value	0.0733	Lilliefors Critical Value	0.0733
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	280.5	95% H-UCL	76.22
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	93.33
95% Adjusted-CLT UCL	342.5	97.5% Chebyshev (MVUE) UCL	108.7
95% Modified-t UCL	290.3	99% Chebyshev (MVUE) UCL	138.9
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.368	Data do not follow a Discernable Distribution (0.05)	
Theta Star	415		
MLE of Mean	152.7		
MLE of Standard Deviation	251.8		
nu star	107.5		
Approximate Chi Square Value (.05)	84.53	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	279.7
Adjusted Chi Square Value	84.33	95% Jackknife UCL	280.5
		95% Standard Bootstrap UCL	279.9
Anderson-Darling Test Statistic	21.87	95% Bootstrap-t UCL	1714
Anderson-Darling 5% Critical Value	0.851	95% Hall's Bootstrap UCL	926.5
Kolmogorov-Smirnov Test Statistic	0.265	95% Percentile Bootstrap UCL	294.3
Kolmogorov-Smirnov 5% Critical Value	0.0835	95% BCA Bootstrap UCL	366.5
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	489.1
		97.5% Chebyshev(Mean, Sd) UCL	634.7
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	920.6
95% Approximate Gamma UCL	194.2		
95% Adjusted Gamma UCL	194.6		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	634.7

Phenanthrene

General Statistics			
Number of Valid Data	146	Number of Detected Data	104
Number of Distinct Detected Data	73	Number of Non-Detect Data	42
		Percent Non-Detects	28.77%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.011	Minimum Detected	-4.51
Maximum Detected	32	Maximum Detected	3.466
Mean of Detected	1.385	Mean of Detected	-1.106
SD of Detected	3.959	SD of Detected	1.686
Minimum Non-Detect	0.34	Minimum Non-Detect	-1.079
Maximum Non-Detect	3.5	Maximum Non-Detect	1.253
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	142
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.26%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.364	Lilliefors Test Statistic	0.0712
5% Lilliefors Critical Value	0.0869	5% Lilliefors Critical Value	0.0869
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.084	Mean	-1.138
SD	3.374	SD	1.441
95% DL/2 (t) UCL	1.546	95% H-Stat (DL/2) UCL	1.374
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	21.53	Mean in Log Scale	-1.39
SD	10.11	SD in Log Scale	1.515
95% MLE (t) UCL	22.91	Mean in Original Scale	1.027
95% MLE (Tiku) UCL	29.76	SD in Original Scale	3.385
		95% Percentile Bootstrap UCL	1.525
		95% BCA Bootstrap UCL	1.79

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.444	Data appear Lognormal at 5% Significance Level	
Theta Star	3.119		
nu star	92.4		
A-D Test Statistic	3.816	Nonparametric Statistics	
5% A-D Critical Value	0.831	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.831	Mean	1.034
5% K-S Critical Value	0.0941	SD	3.373
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.281
		95% KM (t) UCL	1.499
Assuming Gamma Distribution		95% KM (z) UCL	1.496
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.498
Minimum	0.011	95% KM (bootstrap t) UCL	2.217
Maximum	32	95% KM (BCA) UCL	1.572
Mean	1.293	95% KM (Percentile Bootstrap) UCL	1.562
Median	0.663	95% KM (Chebyshev) UCL	2.258
SD	3.348	97.5% KM (Chebyshev) UCL	2.787
k star	0.582	99% KM (Chebyshev) UCL	3.827
Theta star	2.222		
Nu star	169.8	Potential UCLs to Use	
AppChi2	140.7	97.5% KM (Chebyshev) UCL	2.787
95% Gamma Approximate UCL	1.56		
95% Adjusted Gamma UCL	1.563		

Note: DL/2 is not a recommended method.

Phenol

General Statistics			
Number of Valid Data	148	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	144
		Percent Non-Detects	97.30%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.059	Minimum Detected	-2.83
Maximum Detected	0.12	Maximum Detected	-2.12
Mean of Detected	0.0843	Mean of Detected	-2.511
SD of Detected	0.0269	SD of Detected	0.311
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	148
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.944	Shapiro Wilk Test Statistic	0.972
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.59	Mean	-1.367
SD	0.976	SD	1.471
95% DL/2 (t) UCL	0.723	95% H-Stat (DL/2) UCL	1.058
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.632
		SD in Log Scale	0.47
		Mean in Original Scale	0.0297
		SD in Original Scale	0.0167
		95% Percentile Bootstrap UCL	0.032
		95% BCA Bootstrap UCL	0.0324

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	3.6	Data appear Normal at 5% Significance Level	
Theta Star	0.0234		
nu star	28.8		
A-D Test Statistic	0.249	Nonparametric Statistics	
5% A-D Critical Value	0.657	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.657	Mean	0.0649
5% K-S Critical Value	0.395	SD	0.0156
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00436
		95% KM (t) UCL	0.0722
Assuming Gamma Distribution		95% KM (z) UCL	0.0721
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0723
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.0733
Maximum	0.12	95% KM (BCA) UCL	0.12
Mean	0.00228	95% KM (Percentile Bootstrap) UCL	0.0948
Median	1.00E-09	95% KM (Chebyshev) UCL	0.0839
SD	0.0142	97.5% KM (Chebyshev) UCL	0.0922
k star	0.064	99% KM (Chebyshev) UCL	0.108
Theta star	0.0356		
Nu star	18.95	Potential UCLs to Use	
AppChi2	10.08	95% KM (t) UCL	0.0722
95% Gamma Approximate UCL	0.00428	95% KM (Percentile Bootstrap) UCL	0.0948
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Pyrene

General Statistics			
Number of Valid Data	146	Number of Detected Data	103
Number of Distinct Detected Data	78	Number of Non-Detect Data	43
		Percent Non-Detects	29.45%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.014	Minimum Detected	-4.269
Maximum Detected	33	Maximum Detected	3.497
Mean of Detected	1.79	Mean of Detected	-0.983
SD of Detected	4.846	SD of Detected	1.79
Minimum Non-Detect	0.02	Minimum Non-Detect	-3.912
Maximum Non-Detect	3.5	Maximum Non-Detect	1.253
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	135
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	11
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	92.47%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.357	Lilliefors Test Statistic	0.097
5% Lilliefors Critical Value	0.0873	5% Lilliefors Critical Value	0.0873
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.369	Mean	-1.051
SD	4.119	SD	1.554
95% DL/2 (t) UCL	1.934	95% H-Stat (DL/2) UCL	1.962
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.323
		SD in Log Scale	1.625
		Mean in Original Scale	1.302
		SD in Original Scale	4.134
		95% Percentile Bootstrap UCL	1.921
		95% BCA Bootstrap UCL	2.145
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.412	Data do not follow a Discernable Distribution (0.05)	
Theta Star	4.345		
nu star	84.86		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
A-D Test Statistic	4.216	Nonparametric Statistics	
5% A-D Critical Value	0.839	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.839	Mean	1.308
5% K-S Critical Value	0.0948	SD	4.12
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.343
		95% KM (t) UCL	1.876
Assuming Gamma Distribution		95% KM (z) UCL	1.872
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.875
Minimum	0.014	95% KM (bootstrap t) UCL	2.303
Maximum	33	95% KM (BCA) UCL	1.998
Mean	1.766	95% KM (Percentile Bootstrap) UCL	1.883
Median	1.3	95% KM (Chebyshev) UCL	2.802
SD	4.065	97.5% KM (Chebyshev) UCL	3.449
k star	0.557	99% KM (Chebyshev) UCL	4.719
Theta star	3.168		
Nu star	162.8	Potential UCLs to Use	
AppChi2	134.3	97.5% KM (Chebyshev) UCL	3.449
95% Gamma Approximate UCL	2.141		
95% Adjusted Gamma UCL	2.145		
Note: DL/2 is not a recommended method.			

Selenium

General Statistics			
Number of Valid Data	146	Number of Detected Data	74
Number of Distinct Detected Data	60	Number of Non-Detect Data	72
		Percent Non-Detects	49.32%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.21	Minimum Detected	-1.561
Maximum Detected	35	Maximum Detected	3.555
Mean of Detected	2.044	Mean of Detected	-0.00811
SD of Detected	4.78	SD of Detected	1.001
Minimum Non-Detect	0.29	Minimum Non-Detect	-1.238
Maximum Non-Detect	10.5	Maximum Non-Detect	2.351
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	144
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.63%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.351	Lilliefors Test Statistic	0.105
5% Lilliefors Critical Value	0.103	5% Lilliefors Critical Value	0.103
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.29	Mean	-0.424
SD	3.502	SD	0.904
95% DL/2 (t) UCL	1.77	95% H-Stat (DL/2) UCL	1.13
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.499
		SD in Log Scale	0.93
		Mean in Original Scale	1.238
		SD in Original Scale	3.492
		95% Percentile Bootstrap UCL	1.751
		95% BCA Bootstrap UCL	1.981
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.794	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.574		
nu star	117.5		
A-D Test Statistic	4.96	Nonparametric Statistics	
5% A-D Critical Value	0.79	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.79	Mean	1.249
5% K-S Critical Value	0.108	SD	3.479
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.29
		95% KM (t) UCL	1.73

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Gamma Distribution		95% KM (z) UCL	1.727
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.728
Minimum	1.00E-09	95% KM (bootstrap t) UCL	2.88
Maximum	35	95% KM (BCA) UCL	1.758
Mean	1.9	95% KM (Percentile Bootstrap) UCL	1.745
Median	1.1	95% KM (Chebyshev) UCL	2.515
SD	3.507	97.5% KM (Chebyshev) UCL	3.062
k star	0.816	99% KM (Chebyshev) UCL	4.138
Theta star	2.327		
Nu star	238.4	Potential UCLs to Use	
AppChi2	203.6	95% KM (Chebyshev) UCL	2.515
95% Gamma Approximate UCL	2.224		
95% Adjusted Gamma UCL	2.227		

Note: DL/2 is not a recommended method.

Silver

General Statistics			
Number of Valid Data	146	Number of Detected Data	31
Number of Distinct Detected Data	31	Number of Non-Detect Data	115
		Percent Non-Detects	78.77%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.12	Minimum Detected	-2.12
Maximum Detected	80.2	Maximum Detected	4.385
Mean of Detected	24.1	Mean of Detected	1.194
SD of Detected	29.12	SD of Detected	2.584
Minimum Non-Detect	0.1	Minimum Non-Detect	-2.303
Maximum Non-Detect	10	Maximum Non-Detect	2.303
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	132
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	14
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.41%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.765	Shapiro Wilk Test Statistic	0.797
5% Shapiro Wilk Critical Value	0.929	5% Shapiro Wilk Critical Value	0.929
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	5.803	Mean	0.0371
SD	16.33	SD	1.406
95% DL/2 (t) UCL	8.04	95% H-Stat (DL/2) UCL	3.341
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.841
		SD in Log Scale	2.108
		Mean in Original Scale	5.634
		SD in Original Scale	16.39
		95% Percentile Bootstrap UCL	7.875
		95% BCA Bootstrap UCL	8.398
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.328	Data do not follow a Discernable Distribution (0.05)	
Theta Star	73.38		
nu star	20.36		
A-D Test Statistic	2.619	Nonparametric Statistics	
5% A-D Critical Value	0.845	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.845	Mean	5.335
5% K-S Critical Value	0.17	SD	16.41
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.381
		95% KM (t) UCL	7.621
Assuming Gamma Distribution		95% KM (z) UCL	7.606
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	7.588
Minimum	0.12	95% KM (bootstrap t) UCL	8.223
Maximum	80.2	95% KM (BCA) UCL	7.66
Mean	23.79	95% KM (Percentile Bootstrap) UCL	7.776
Median	22.17	95% KM (Chebyshev) UCL	11.35

	General UCL Statistics for Data Sets with Non-Detects		
User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
SD	13.74	97.5% KM (Chebyshev) UCL	13.96
k star	1.274	99% KM (Chebyshev) UCL	19.07
Theta star	18.67		
Nu star	372	Potential UCLs to Use	
AppChi2	328.3	97.5% KM (Chebyshev) UCL	13.96
95% Gamma Approximate UCL	26.96		
95% Adjusted Gamma UCL	26.99		
Note: DL/2 is not a recommended method.			

Sodium

General Statistics			
Number of Valid Data	146	Number of Detected Data	139
Number of Distinct Detected Data	91	Number of Non-Detect Data	7
		Percent Non-Detects	4.79%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	49	Minimum Detected	3.892
Maximum Detected	5700	Maximum Detected	8.648
Mean of Detected	1120	Mean of Detected	6.387
SD of Detected	1096	SD of Detected	1.265
Minimum Non-Detect	118	Minimum Non-Detect	4.771
Maximum Non-Detect	1045	Maximum Non-Detect	6.952
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	89
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	57
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	60.96%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.164	Lilliefors Test Statistic	0.113
5% Lilliefors Critical Value	0.0751	5% Lilliefors Critical Value	0.0751
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1073	Mean	6.3
SD	1090	SD	1.305
95% DL/2 (t) UCL	1222	95% H-Stat (DL/2) UCL	1576
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	600	Mean in Log Scale	6.311
SD	1626	SD in Log Scale	1.285
95% MLE (t) UCL	822.7	Mean in Original Scale	1073
95% MLE (Tiku) UCL	919.2	SD in Original Scale	1090
		95% Percentile Bootstrap UCL	1231
		95% BCA Bootstrap UCL	1228
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.905	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1238		
nu star	251.5		
A-D Test Statistic	2.382	Nonparametric Statistics	
5% A-D Critical Value	0.787	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.787	Mean	1072
5% K-S Critical Value	0.082	SD	1087
Data not Gamma Distributed at 5% Significance Level		SE of Mean	90.29
		95% KM (t) UCL	1222
Assuming Gamma Distribution		95% KM (z) UCL	1221
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1222
Minimum	1.00E-09	95% KM (bootstrap t) UCL	1235
Maximum	5700	95% KM (BCA) UCL	1217
Mean	1069	95% KM (Percentile Bootstrap) UCL	1227
Median	690.5	95% KM (Chebyshev) UCL	1466
SD	1093	97.5% KM (Chebyshev) UCL	1636
k star	0.385	99% KM (Chebyshev) UCL	1971
Theta star	2779		
Nu star	112.3	Potential UCLs to Use	
AppChi2	88.88	95% KM (Chebyshev) UCL	1466
95% Gamma Approximate UCL	1352		

	General UCL Statistics for Data Sets with Non-Detects
User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

95% Adjusted Gamma UCL	1355

Note: DL/2 is not a recommended method.

Thallium

General Statistics			
Number of Valid Data	146	Number of Detected Data	35
Number of Distinct Detected Data	24	Number of Non-Detect Data	111
		Percent Non-Detects	76.03%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.31	Minimum Detected	-1.171
Maximum Detected	3.9	Maximum Detected	1.361
Mean of Detected	1.427	Mean of Detected	0.165
SD of Detected	0.867	SD of Detected	0.653
Minimum Non-Detect	0.16	Minimum Non-Detect	-1.833
Maximum Non-Detect	10.5	Maximum Non-Detect	2.351
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	146
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.922	Shapiro Wilk Test Statistic	0.965
5% Shapiro Wilk Critical Value	0.934	5% Shapiro Wilk Critical Value	0.934
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.998	Mean	-0.177
SD	0.699	SD	0.579
95% DL/2 (t) UCL	1.093	95% H-Stat (DL/2) UCL	1.048
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.442
		SD in Log Scale	0.595
		Mean in Original Scale	0.782
		SD in Original Scale	0.593
		95% Percentile Bootstrap UCL	0.864
		95% BCA Bootstrap UCL	0.87
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	2.56	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.557		
nu star	179.2		
A-D Test Statistic	0.249	Nonparametric Statistics	
5% A-D Critical Value	0.755	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.755	Mean	0.805
5% K-S Critical Value	0.15	SD	0.621
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0656
		95% KM (t) UCL	0.914
Assuming Gamma Distribution		95% KM (z) UCL	0.913
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.911
Minimum	0.31	95% KM (bootstrap t) UCL	0.921
Maximum	3.9	95% KM (BCA) UCL	0.921
Mean	1.502	95% KM (Percentile Bootstrap) UCL	0.912
Median	1.528	95% KM (Chebyshev) UCL	1.091
SD	0.531	97.5% KM (Chebyshev) UCL	1.215
k star	6.872	99% KM (Chebyshev) UCL	1.458
Theta star	0.219		
Nu star	2007	Potential UCLs to Use	
AppChi2	1904	95% KM (t) UCL	0.914
95% Gamma Approximate UCL	1.584		
95% Adjusted Gamma UCL	1.584		

Note: DL/2 is not a recommended method.

Total PCBs

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
General Statistics			
Number of Valid Observations	42	Number of Distinct Observations	39
Raw Statistics		Log-transformed Statistics	
Minimum	0.002	Minimum of Log Data	-6.215
Maximum	38.8	Maximum of Log Data	3.658
Mean	2.369	Mean of log Data	-2.643
Median	0.034	SD of log Data	2.653
SD	6.853		
Coefficient of Variation	2.893		
Skewness	4.151		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.411	Shapiro Wilk Test Statistic	0.855
Shapiro Wilk Critical Value	0.942	Shapiro Wilk Critical Value	0.942
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	4.148	95% H-UCL	16.25
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	6.468
95% Adjusted-CLT UCL	4.832	97.5% Chebyshev (MVUE) UCL	8.507
95% Modified-t UCL	4.261	99% Chebyshev (MVUE) UCL	12.51
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.21	Data do not follow a Discernable Distribution (0.05)	
Theta Star	11.3		
MLE of Mean	2.369		
MLE of Standard Deviation	5.174		
nu star	17.6		
Approximate Chi Square Value (.05)	9.103	Nonparametric Statistics	
Adjusted Level of Significance	0.0443	95% CLT UCL	4.108
Adjusted Chi Square Value	8.885	95% Jackknife UCL	4.148
		95% Standard Bootstrap UCL	4.092
Anderson-Darling Test Statistic	5.105	95% Bootstrap-t UCL	6.091
Anderson-Darling 5% Critical Value	0.9	95% Hall's Bootstrap UCL	9.585
Kolmogorov-Smirnov Test Statistic	0.315	95% Percentile Bootstrap UCL	4.22
Kolmogorov-Smirnov 5% Critical Value	0.151	95% BCA Bootstrap UCL	4.942
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	6.978
		97.5% Chebyshev(Mean, Sd) UCL	8.973
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	12.89
95% Approximate Gamma UCL	4.58		
95% Adjusted Gamma UCL	4.692		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	12.89

Vanadium

General Statistics			
Number of Valid Data	146	Number of Detected Data	145
Number of Distinct Detected Data	81	Number of Non-Detect Data	1
		Percent Non-Detects	0.68%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	3.7	Minimum Detected	1.308
Maximum Detected	830	Maximum Detected	6.721
Mean of Detected	26.71	Mean of Detected	2.787
SD of Detected	72.67	SD of Detected	0.763
Minimum Non-Detect	52.3	Minimum Non-Detect	3.957
Maximum Non-Detect	52.3	Maximum Non-Detect	3.957
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.376	Lilliefors Test Statistic	0.0864
5% Lilliefors Critical Value	0.0736	5% Lilliefors Critical Value	0.0736
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	26.7	Mean	2.79

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
SD	72.42	SD	0.761
95% DL/2 (t) UCL	36.62	95% H-Stat (DL/2) UCL	24.89
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.786
		SD in Log Scale	0.76
		Mean in Original Scale	26.63
		SD in Original Scale	72.43
		95% Percentile Bootstrap UCL	38.46
		95% BCA Bootstrap UCL	45.39
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.122	Data do not follow a Discernable Distribution (0.05)	
Theta Star	23.79		
nu star	325.5		
A-D Test Statistic	9.338	Nonparametric Statistics	
5% A-D Critical Value	0.78	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.78	Mean	26.65
5% K-S Critical Value	0.0799	SD	72.18
Data not Gamma Distributed at 5% Significance Level		SE of Mean	5.995
		95% KM (t) UCL	36.57
Assuming Gamma Distribution		95% KM (z) UCL	36.51
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	36.57
Minimum	3.7	95% KM (bootstrap t) UCL	71.64
Maximum	830	95% KM (BCA) UCL	37.67
Mean	26.7	95% KM (Percentile Bootstrap) UCL	37.98
Median	15.75	95% KM (Chebyshev) UCL	52.78
SD	72.42	97.5% KM (Chebyshev) UCL	64.09
k star	1.129	99% KM (Chebyshev) UCL	86.3
Theta star	23.64		
Nu star	329.8	Potential UCLs to Use	
AppChi2	288.7	95% KM (BCA) UCL	37.67
95% Gamma Approximate UCL	30.5		
95% Adjusted Gamma UCL	30.54		

Note: DL/2 is not a recommended method.

Xylenes (total)

General Statistics			
Number of Valid Data	122	Number of Detected Data	18
Number of Distinct Detected Data	18	Number of Non-Detect Data	104
		Percent Non-Detects	85.25%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.001	Minimum Detected	-6.908
Maximum Detected	50	Maximum Detected	3.912
Mean of Detected	3.178	Mean of Detected	-2.377
SD of Detected	11.73	SD of Detected	2.663
Minimum Non-Detect	0.0025	Minimum Non-Detect	-5.991
Maximum Non-Detect	0.038	Maximum Non-Detect	-3.27
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	110
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	12
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.16%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.296	Shapiro Wilk Test Statistic	0.961
5% Shapiro Wilk Critical Value	0.897	5% Shapiro Wilk Critical Value	0.897
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.472	Mean	-5.505
SD	4.541	SD	1.768
95% DL/2 (t) UCL	1.153	95% H-Stat (DL/2) UCL	0.0204
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-7.057
		SD in Log Scale	2.676

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

		Mean in Original Scale	0.47
		SD in Original Scale	4.541
		95% Percentile Bootstrap UCL	1.28
		95% BCA Bootstrap UCL	2.085
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.21	Data appear Lognormal at 5% Significance Level	
Theta Star	15.16		
nu star	7.548		
A-D Test Statistic	2.153	Nonparametric Statistics	
5% A-D Critical Value	0.881	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.881	Mean	0.47
5% K-S Critical Value	0.225	SD	4.522
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.421
		95% KM (t) UCL	1.169
Assuming Gamma Distribution		95% KM (z) UCL	1.163
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.152
Minimum	0.001	95% KM (bootstrap t) UCL	20.43
Maximum	50	95% KM (BCA) UCL	1.316
Mean	3.566	95% KM (Percentile Bootstrap) UCL	1.274
Median	2.975	95% KM (Chebyshev) UCL	2.307
SD	4.617	97.5% KM (Chebyshev) UCL	3.101
k star	0.984	99% KM (Chebyshev) UCL	4.662
Theta star	3.625		
Nu star	240	Potential UCLs to Use	
AppChi2	205.2	97.5% KM (Chebyshev) UCL	3.101
95% Gamma Approximate UCL	4.172		
95% Adjusted Gamma UCL	4.18		

Note: DL/2 is not a recommended method.

Zinc

General Statistics			
Number of Valid Observations	146	Number of Distinct Observations	100
Raw Statistics		Log-transformed Statistics	
Minimum	5.7	Minimum of Log Data	1.74
Maximum	8880	Maximum of Log Data	9.092
Mean	421.8	Mean of log Data	3.9
Median	31.5	SD of log Data	1.554
SD	1308		
Coefficient of Variation	3.101		
Skewness	3.873		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.482	Lilliefors Test Statistic	0.22
Lilliefors Critical Value	0.0733	Lilliefors Critical Value	0.0733
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	601	95% H-UCL	236.3
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	292.6
95% Adjusted-CLT UCL	636.9	97.5% Chebyshev (MVUE) UCL	349
95% Modified-t UCL	606.7	99% Chebyshev (MVUE) UCL	459.6
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.317	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1333		
MLE of Mean	421.8		
MLE of Standard Deviation	749.7		
nu star	92.42		
Approximate Chi Square Value (.05)	71.25	Nonparametric Statistics	
Adjusted Level of Significance	0.0484	95% CLT UCL	599.8
Adjusted Chi Square Value	71.07	95% Jackknife UCL	601
		95% Standard Bootstrap UCL	594.1
Anderson-Darling Test Statistic	29.64	95% Bootstrap-t UCL	649.6
Anderson-Darling 5% Critical Value	0.864	95% Hall's Bootstrap UCL	640.5
Kolmogorov-Smirnov Test Statistic	0.388	95% Percentile Bootstrap UCL	615.6
Kolmogorov-Smirnov 5% Critical Value	0.084	95% BCA Bootstrap UCL	625.5

Electronic Appendix F6, Table 1
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Surface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SurfSoil ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	893.6
		97.5% Chebyshev(Mean, Sd) UCL	1098
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1499
95% Approximate Gamma UCL	547.1		
95% Adjusted Gamma UCL	548.5		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	1098

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4-Trichlorobenzene

General Statistics

Number of Valid Data	202	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	201
		Percent Non-Detects	99.50%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 1,2,4-Trichlorobenzene was not processed!

1,2-Dichlorobenzene

General Statistics

Number of Valid Data	203	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	201
		Percent Non-Detects	99.01%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.067	Minimum Detected	-2.703
Maximum Detected	1.5	Maximum Detected	0.405
Mean of Detected	0.784	Mean of Detected	-1.149
SD of Detected	1.013	SD of Detected	2.198
Minimum Non-Detect	0.0056	Minimum Non-Detect	-5.185
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	203
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.423	Mean	-2.044
SD	0.677	SD	2.012
95% DL/2 (t) UCL	0.501	95% H-Stat (DL/2) UCL	1.515

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.0749
5% K-S Critical Value	N/A	SD	0.106
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0112
		95% KM (t) UCL	0.0934
Assuming Gamma Distribution		95% KM (z) UCL	0.0933
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	1.5
Mean	N/A	95% KM (Percentile Bootstrap) UCL	1.5
Median	N/A	95% KM (Chebyshev) UCL	0.124
SD	N/A	97.5% KM (Chebyshev) UCL	0.145
k star	N/A	99% KM (Chebyshev) UCL	0.186
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	97.5% KM (Chebyshev) UCL	0.145
95% Gamma Approximate UCL	N/A		
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

1,4-Dichlorobenzene

General Statistics			
Number of Valid Data	203	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	201
		Percent Non-Detects	99.01%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.12	Minimum Detected	-2.12
Maximum Detected	1.4	Maximum Detected	0.336
Mean of Detected	0.76	Mean of Detected	-0.892
SD of Detected	0.905	SD of Detected	1.737
Minimum Non-Detect	0.0056	Minimum Non-Detect	-5.185
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	203
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.423	Mean	-2.042
SD	0.676	SD	2.011
95% DL/2 (t) UCL	0.501	95% H-Stat (DL/2) UCL	1.512
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.127
5% K-S Critical Value	N/A	SD	0.0951
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.01
		95% KM (t) UCL	0.144
Assuming Gamma Distribution		95% KM (z) UCL	0.144
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.954
Minimum	N/A	95% KM (bootstrap t) UCL	0.128
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	1.4
Median	N/A	95% KM (Chebyshev) UCL	0.171
SD	N/A	97.5% KM (Chebyshev) UCL	0.19
k star	N/A	99% KM (Chebyshev) UCL	0.227
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (Chebyshev) UCL	0.171
95% Gamma Approximate UCL	N/A		
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

1-Phenyl-1-(2,4-Dimethylphenyl)ethane

General Statistics			
Number of Valid Data	25	Number of Detected Data	14
Number of Distinct Detected Data	13	Number of Non-Detect Data	11
		Percent Non-Detects	44.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.034	Minimum Detected	-3.381
Maximum Detected	2.1	Maximum Detected	0.742
Mean of Detected	0.532	Mean of Detected	-1.293
SD of Detected	0.658	SD of Detected	1.207
Minimum Non-Detect	0.41	Minimum Non-Detect	-0.892
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	25
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.713	Shapiro Wilk Test Statistic	0.96
5% Shapiro Wilk Critical Value	0.874	5% Shapiro Wilk Critical Value	0.874

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.923	Mean	-0.922
SD	1.543	SD	1.256
95% DL/2 (t) UCL	1.452	95% H-Stat (DL/2) UCL	1.727
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.46
		SD in Log Scale	0.921
		Mean in Original Scale	0.382
		SD in Original Scale	0.515
		95% Percentile Bootstrap UCL	0.559
		95% BCA Bootstrap UCL	0.616
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.744	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.715		
nu star	20.82		
A-D Test Statistic	0.668	Nonparametric Statistics	
5% A-D Critical Value	0.765	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.765	Mean	0.413
5% K-S Critical Value	0.236	SD	0.535
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.12
		95% KM (t) UCL	0.619
Assuming Gamma Distribution		95% KM (z) UCL	0.611
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.617
Minimum	0.034	95% KM (bootstrap t) UCL	0.732
Maximum	2.1	95% KM (BCA) UCL	0.643
Mean	0.529	95% KM (Percentile Bootstrap) UCL	0.621
Median	0.507	95% KM (Chebyshev) UCL	0.937
SD	0.488	97.5% KM (Chebyshev) UCL	1.165
k star	1.321	99% KM (Chebyshev) UCL	1.61
Theta star	0.401		
Nu star	66.03	Potential UCLs to Use	
AppChi2	48.33	95% KM (BCA) UCL	0.643
95% Gamma Approximate UCL	0.723		
95% Adjusted Gamma UCL	0.739		

Note: DL/2 is not a recommended method.

1-Phenyl-1-(4-methylphenyl)ethane

General Statistics			
Number of Valid Data	25	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	21
		Percent Non-Detects	84.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.023	Minimum Detected	-3.772
Maximum Detected	0.72	Maximum Detected	-0.329
Mean of Detected	0.376	Mean of Detected	-1.531
SD of Detected	0.298	SD of Detected	1.548
Minimum Non-Detect	0.39	Minimum Non-Detect	-0.942
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	25
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.996	Shapiro Wilk Test Statistic	0.846
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.216	Mean	-0.546
SD	1.668	SD	1.264
95% DL/2 (t) UCL	1.787	95% H-Stat (DL/2) UCL	2.729
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.26
		SD in Log Scale	0.728
		Mean in Original Scale	0.142
		SD in Original Scale	0.153
		95% Percentile Bootstrap UCL	0.194
		95% BCA Bootstrap UCL	0.212
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.427	Data appear Normal at 5% Significance Level	
Theta Star	0.88		
nu star	3.415		
A-D Test Statistic	0.351	Nonparametric Statistics	
5% A-D Critical Value	0.666	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.666	Mean	0.234
5% K-S Critical Value	0.402	SD	0.213
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.104
		95% KM (t) UCL	0.411
Assuming Gamma Distribution		95% KM (z) UCL	0.404
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.485
Minimum	0.023	95% KM (bootstrap t) UCL	0.387
Maximum	0.854	95% KM (BCA) UCL	N/A
Mean	0.426	95% KM (Percentile Bootstrap) UCL	0.536
Median	0.452	95% KM (Chebyshev) UCL	0.685
SD	0.155	97.5% KM (Chebyshev) UCL	0.881
k star	3.89	99% KM (Chebyshev) UCL	1.265
Theta star	0.109		
Nu star	194.5	Potential UCLs to Use	
AppChi2	163.2	95% KM (t) UCL	0.411
95% Gamma Approximate UCL	0.507	95% KM (Percentile Bootstrap) UCL	0.536
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

2-Methylnaphthalene

General Statistics			
Number of Valid Data	204	Number of Detected Data	89
Number of Distinct Detected Data	72	Number of Non-Detect Data	115
		Percent Non-Detects	56.37%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0049	Minimum Detected	-5.319
Maximum Detected	61	Maximum Detected	4.111
Mean of Detected	2.715	Mean of Detected	-1.492
SD of Detected	9.534	SD of Detected	2.1
Minimum Non-Detect	0.0078	Minimum Non-Detect	-4.854
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	199

Electronic Appendix F6, Table 2
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.55%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.39	Lilliefors Test Statistic	0.0973
5% Lilliefors Critical Value	0.0939	5% Lilliefors Critical Value	0.0939
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.599	Mean	-1.241
SD	6.41	SD	1.7
95% DL/2 (t) UCL	2.341	95% H-Stat (DL/2) UCL	1.947
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-2.256
		SD in Log Scale	1.702
		Mean in Original Scale	1.231
		SD in Original Scale	6.412
		95% Percentile Bootstrap UCL	2.055
		95% BCA Bootstrap UCL	2.398
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.278	Data do not follow a Discernable Distribution (0.05)	
Theta Star	9.766		
nu star	49.49		
A-D Test Statistic	8.035	Nonparametric Statistics	
5% A-D Critical Value	0.876	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.876	Mean	1.26
5% K-S Critical Value	0.103	SD	6.396
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.451
		95% KM (t) UCL	2.005
Assuming Gamma Distribution		95% KM (z) UCL	2.002
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.003
Minimum	0.0049	95% KM (bootstrap t) UCL	2.862
Maximum	61	95% KM (BCA) UCL	2.145
Mean	2.521	95% KM (Percentile Bootstrap) UCL	2.084
Median	1.67	95% KM (Chebyshev) UCL	3.225
SD	6.313	97.5% KM (Chebyshev) UCL	4.075
k star	0.553	99% KM (Chebyshev) UCL	5.745
Theta star	4.558		
Nu star	225.7	Potential UCLs to Use	
AppChi2	191.9	97.5% KM (Chebyshev) UCL	4.075
95% Gamma Approximate UCL	2.965		
95% Adjusted Gamma UCL	2.968		
Note: DL/2 is not a recommended method.			

2-Methylphenol

General Statistics			
Number of Valid Data	186	Number of Detected Data	28
Number of Distinct Detected Data	24	Number of Non-Detect Data	158
		Percent Non-Detects	84.95%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0013	Minimum Detected	-6.645
Maximum Detected	0.43	Maximum Detected	-0.844
Mean of Detected	0.138	Mean of Detected	-2.7
SD of Detected	0.118	SD of Detected	1.617
Minimum Non-Detect	0.028	Minimum Non-Detect	-3.576
Maximum Non-Detect	18	Maximum Non-Detect	2.89
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	186

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Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.907	Shapiro Wilk Test Statistic	0.849
5% Shapiro Wilk Critical Value	0.924	5% Shapiro Wilk Critical Value	0.924
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.611	Mean	-1.431
SD	1.164	SD	1.411
95% DL/2 (t) UCL	0.752	95% H-Stat (DL/2) UCL	0.983
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.532
		SD in Log Scale	0.993
		Mean in Original Scale	0.0497
		SD in Original Scale	0.0658
		95% Percentile Bootstrap UCL	0.0576
		95% BCA Bootstrap UCL	0.059
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.756	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.183		
nu star	42.33		
A-D Test Statistic	0.923	Nonparametric Statistics	
5% A-D Critical Value	0.782	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.782	Mean	0.0799
5% K-S Critical Value	0.171	SD	0.098
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0137
		95% KM (t) UCL	0.103
Assuming Gamma Distribution		95% KM (z) UCL	0.102
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.103
Minimum	0.0013	95% KM (bootstrap t) UCL	0.103
Maximum	0.43	95% KM (BCA) UCL	0.102
Mean	0.184	95% KM (Percentile Bootstrap) UCL	0.104
Median	0.199	95% KM (Chebyshev) UCL	0.14
SD	0.0773	97.5% KM (Chebyshev) UCL	0.165
k star	3.14	99% KM (Chebyshev) UCL	0.216
Theta star	0.0585		
Nu star	1168	Potential UCLs to Use	
AppChi2	1090	95% KM (Chebyshev) UCL	0.14
95% Gamma Approximate UCL	0.197		
95% Adjusted Gamma UCL	0.197		
Note: DL/2 is not a recommended method.			

4,4'-DDD

General Statistics			
Number of Valid Data	148	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	144
		Percent Non-Detects	97.30%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0037	Minimum Detected	-5.599
Maximum Detected	0.13	Maximum Detected	-2.04
Mean of Detected	0.0397	Mean of Detected	-4.176
SD of Detected	0.0606	SD of Detected	1.58
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.37	Maximum Non-Detect	-0.994
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	148

Electronic Appendix F6, Table 2
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.719	Shapiro Wilk Test Statistic	0.929
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0173	Mean	-4.997
SD	0.0291	SD	1.289
95% DL/2 (t) UCL	0.0213	95% H-Stat (DL/2) UCL	0.0206
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-11
		SD in Log Scale	1.873
		Mean in Original Scale	0.00111
		SD in Original Scale	0.0108
		95% Percentile Bootstrap UCL	0.0028
		95% BCA Bootstrap UCL	0.00458
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.328	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.121		
nu star	2.622		
A-D Test Statistic	0.427	Nonparametric Statistics	
5% A-D Critical Value	0.675	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.675	Mean	0.00479
5% K-S Critical Value	0.407	SD	0.0107
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00105
		95% KM (t) UCL	0.00654
Assuming Gamma Distribution		95% KM (z) UCL	0.00652
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00661
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.0106
Maximum	0.344	95% KM (BCA) UCL	0.13
Mean	0.0774	95% KM (Percentile Bootstrap) UCL	0.0207
Median	0.0561	95% KM (Chebyshev) UCL	0.00938
SD	0.0775	97.5% KM (Chebyshev) UCL	0.0114
k star	0.295	99% KM (Chebyshev) UCL	0.0153
Theta star	0.262		
Nu star	87.44	Potential UCLs to Use	
AppChi2	66.88	95% KM (t) UCL	0.00654
95% Gamma Approximate UCL	0.101		
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

4,4'-DDE

General Statistics			
Number of Valid Data	148	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	145
		Percent Non-Detects	97.97%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0059	Minimum Detected	-5.133

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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Maximum Detected	0.16	Maximum Detected	-1.833
Mean of Detected	0.0576	Mean of Detected	-3.976
SD of Detected	0.0887	SD of Detected	1.858
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.37	Maximum Non-Detect	-0.994

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	148
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.755	Shapiro Wilk Test Statistic	0.789
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0176	Mean	-4.995
SD	0.0301	SD	1.292
95% DL/2 (t) UCL	0.0217	95% H-Stat (DL/2) UCL	0.02
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-13.55
		SD in Log Scale	2.429
		Mean in Original Scale	0.00117
		SD in Original Scale	0.0132
		95% Percentile Bootstrap UCL	0.00333
		95% BCA Bootstrap UCL	0.00554
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Lognormal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.00702
5% K-S Critical Value	N/A	SD	0.013
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00134
		95% KM (t) UCL	0.00924
Assuming Gamma Distribution		95% KM (z) UCL	0.00923
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0085
Minimum	N/A	95% KM (bootstrap t) UCL	0.0831
Maximum	N/A	95% KM (BCA) UCL	0.16
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	0.0129
SD	N/A	97.5% KM (Chebyshev) UCL	0.0154
k star	N/A	99% KM (Chebyshev) UCL	0.0204
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (Chebyshev) UCL	0.0129
95% Gamma Approximate UCL	N/A		
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

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Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

4,4'-DDT

General Statistics			
Number of Valid Data	148	Number of Detected Data	29
Number of Distinct Detected Data	27	Number of Non-Detect Data	119
		Percent Non-Detects	80.41%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.30E-04	Minimum Detected	-7.752
Maximum Detected	0.12	Maximum Detected	-2.12
Mean of Detected	0.0141	Mean of Detected	-5.393
SD of Detected	0.0258	SD of Detected	1.509
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.37	Maximum Non-Detect	-0.994
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	148
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.572	Shapiro Wilk Test Statistic	0.959
5% Shapiro Wilk Critical Value	0.926	5% Shapiro Wilk Critical Value	0.926
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.018	Mean	-4.961
SD	0.0286	SD	1.352
95% DL/2 (t) UCL	0.0219	95% H-Stat (DL/2) UCL	0.0256
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-6.138
		SD in Log Scale	0.88
		Mean in Original Scale	0.00441
		SD in Original Scale	0.0123
		95% Percentile Bootstrap UCL	0.0062
		95% BCA Bootstrap UCL	0.00709
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.518	Data appear Lognormal at 5% Significance Level	
Theta Star	0.0273		
nu star	30.05		
A-D Test Statistic	1.359	Nonparametric Statistics	
5% A-D Critical Value	0.806	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.806	Mean	0.00485
5% K-S Critical Value	0.171	SD	0.013
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00119
		95% KM (t) UCL	0.00682
Assuming Gamma Distribution		95% KM (z) UCL	0.00681
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0068
Minimum	4.30E-04	95% KM (bootstrap t) UCL	0.00815
Maximum	0.12	95% KM (BCA) UCL	0.00688
Mean	0.0141	95% KM (Percentile Bootstrap) UCL	0.00704
Median	0.014	95% KM (Chebyshev) UCL	0.01
SD	0.0113	97.5% KM (Chebyshev) UCL	0.0123
k star	2.341	99% KM (Chebyshev) UCL	0.0167
Theta star	0.006		
Nu star	693	Potential UCLs to Use	
AppChi2	633	95% KM (Chebyshev) UCL	0.01
95% Gamma Approximate UCL	0.0154		
95% Adjusted Gamma UCL	0.0154		

Note: DL/2 is not a recommended method.

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Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

4-Chloroaniline

General Statistics			
Number of Valid Data	203	Number of Detected Data	15
Number of Distinct Detected Data	15	Number of Non-Detect Data	188
		Percent Non-Detects	92.61%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.46	Minimum Detected	-0.777
Maximum Detected	16	Maximum Detected	2.773
Mean of Detected	4.754	Mean of Detected	1.22
SD of Detected	4.23	SD of Detected	0.91
Minimum Non-Detect	0.026	Minimum Non-Detect	-3.65
Maximum Non-Detect	18	Maximum Non-Detect	2.89
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	203
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.738	Shapiro Wilk Test Statistic	0.907
5% Shapiro Wilk Critical Value	0.881	5% Shapiro Wilk Critical Value	0.881
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.778	Mean	-1.261
SD	1.809	SD	1.314
95% DL/2 (t) UCL	0.987	95% H-Stat (DL/2) UCL	0.771
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.685
		SD in Log Scale	1.452
		Mean in Original Scale	0.422
		SD in Original Scale	1.659
		95% Percentile Bootstrap UCL	0.62
		95% BCA Bootstrap UCL	0.703
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.343	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	3.539		
nu star	40.3		
A-D Test Statistic	0.725	Nonparametric Statistics	
5% A-D Critical Value	0.752	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.752	Mean	0.785
5% K-S Critical Value	0.225	SD	1.588
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.116
		95% KM (t) UCL	0.977
Assuming Gamma Distribution		95% KM (z) UCL	0.976
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1
Minimum	0.46	95% KM (bootstrap t) UCL	1.089
Maximum	16	95% KM (BCA) UCL	2.868
Mean	4.754	95% KM (Percentile Bootstrap) UCL	2.713
Median	4.761	95% KM (Chebyshev) UCL	1.291
SD	1.124	97.5% KM (Chebyshev) UCL	1.51
k star	19.45	99% KM (Chebyshev) UCL	1.94
Theta star	0.244		
Nu star	7896	Potential UCLs to Use	
AppChi2	7690	95% KM (t) UCL	0.977
95% Gamma Approximate UCL	4.881		
95% Adjusted Gamma UCL	4.881		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

4-Methylphenol

General Statistics			
Number of Valid Data	188	Number of Detected Data	36
Number of Distinct Detected Data	29	Number of Non-Detect Data	152
		Percent Non-Detects	80.85%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0018	Minimum Detected	-6.32
Maximum Detected	5.2	Maximum Detected	1.649
Mean of Detected	0.484	Mean of Detected	-2.123
SD of Detected	0.974	SD of Detected	1.906
Minimum Non-Detect	0.028	Minimum Non-Detect	-3.576
Maximum Non-Detect	18	Maximum Non-Detect	2.89
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	188
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.516	Shapiro Wilk Test Statistic	0.973
5% Shapiro Wilk Critical Value	0.935	5% Shapiro Wilk Critical Value	0.935
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.667	Mean	-1.332
SD	1.212	SD	1.409
95% DL/2 (t) UCL	0.813	95% H-Stat (DL/2) UCL	1.074
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.186
		SD in Log Scale	1.204
		Mean in Original Scale	0.128
		SD in Original Scale	0.457
		95% Percentile Bootstrap UCL	0.185
		95% BCA Bootstrap UCL	0.214
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.44	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1.1		
nu star	31.72		
A-D Test Statistic	0.702	Nonparametric Statistics	
5% A-D Critical Value	0.821	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.821	Mean	0.167
5% K-S Critical Value	0.156	SD	0.479
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0394
		95% KM (t) UCL	0.232
Assuming Gamma Distribution		95% KM (z) UCL	0.231
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.231
Minimum	0.0018	95% KM (bootstrap t) UCL	0.27
Maximum	5.2	95% KM (BCA) UCL	0.242
Mean	0.508	95% KM (Percentile Bootstrap) UCL	0.233
Median	0.504	95% KM (Chebyshev) UCL	0.338
SD	0.429	97.5% KM (Chebyshev) UCL	0.412
k star	1.913	99% KM (Chebyshev) UCL	0.558
Theta star	0.266		
Nu star	719.3	Potential UCLs to Use	
AppChi2	658	95% KM (t) UCL	0.232
95% Gamma Approximate UCL	0.556		
95% Adjusted Gamma UCL	0.556		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Acenaphthene

General Statistics			
Number of Valid Data	204	Number of Detected Data	43
Number of Distinct Detected Data	37	Number of Non-Detect Data	161
		Percent Non-Detects	78.92%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	9.70E-04	Minimum Detected	-6.938
Maximum Detected	2.7	Maximum Detected	0.993
Mean of Detected	0.237	Mean of Detected	-3.471
SD of Detected	0.614	SD of Detected	2.121
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.407	Shapiro Wilk Test Statistic	0.939
5% Shapiro Wilk Critical Value	0.943	5% Shapiro Wilk Critical Value	0.943
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.541	Mean	-1.853
SD	0.987	SD	1.845
95% DL/2 (t) UCL	0.655	95% H-Stat (DL/2) UCL	1.822
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.285
		SD in Log Scale	1.321
		Mean in Original Scale	0.0634
		SD in Original Scale	0.294
		95% Percentile Bootstrap UCL	0.102
		95% BCA Bootstrap UCL	0.112
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.326	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.727		
nu star	28.02		
A-D Test Statistic	2.401	Nonparametric Statistics	
5% A-D Critical Value	0.852	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.852	Mean	0.0856
5% K-S Critical Value	0.146	SD	0.314
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0247
		95% KM (t) UCL	0.126
Assuming Gamma Distribution		95% KM (z) UCL	0.126
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.126
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.157
Maximum	2.7	95% KM (BCA) UCL	0.129
Mean	0.338	95% KM (Percentile Bootstrap) UCL	0.129
Median	0.285	95% KM (Chebyshev) UCL	0.193
SD	0.449	97.5% KM (Chebyshev) UCL	0.24
k star	0.403	99% KM (Chebyshev) UCL	0.331
Theta star	0.84		
Nu star	164.2	Potential UCLs to Use	
AppChi2	135.6	97.5% KM (Chebyshev) UCL	0.24
95% Gamma Approximate UCL	0.409		
95% Adjusted Gamma UCL	0.41		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Acenaphthylene

General Statistics			
Number of Valid Data	204	Number of Detected Data	69
Number of Distinct Detected Data	61	Number of Non-Detect Data	135
		Percent Non-Detects	66.18%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0045	Minimum Detected	-5.404
Maximum Detected	6.3	Maximum Detected	1.841
Mean of Detected	0.37	Mean of Detected	-2.26
SD of Detected	0.811	SD of Detected	1.726
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	9.7	Maximum Non-Detect	2.272
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.326	Lilliefors Test Statistic	0.0918
5% Lilliefors Critical Value	0.107	5% Lilliefors Critical Value	0.107
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.45	Mean	-1.821
SD	0.841	SD	1.594
95% DL/2 (t) UCL	0.547	95% H-Stat (DL/2) UCL	1.078
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.199
		SD in Log Scale	1.415
		Mean in Original Scale	0.149
		SD in Original Scale	0.496
		95% Percentile Bootstrap UCL	0.213
		95% BCA Bootstrap UCL	0.241
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.49	Data appear Lognormal at 5% Significance Level	
Theta Star	0.756		
nu star	67.56		
A-D Test Statistic	1.368	Nonparametric Statistics	
5% A-D Critical Value	0.816	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.816	Mean	0.177
5% K-S Critical Value	0.113	SD	0.506
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0374
		95% KM (t) UCL	0.239
Assuming Gamma Distribution		95% KM (z) UCL	0.239
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.238
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.29
Maximum	6.3	95% KM (BCA) UCL	0.253
Mean	0.398	95% KM (Percentile Bootstrap) UCL	0.246
Median	0.284	95% KM (Chebyshev) UCL	0.34
SD	0.55	97.5% KM (Chebyshev) UCL	0.41
k star	0.341	99% KM (Chebyshev) UCL	0.549
Theta star	1.165		
Nu star	139.2	Potential UCLs to Use	
AppChi2	112.9	95% KM (Chebyshev) UCL	0.34
95% Gamma Approximate UCL	0.49		
95% Adjusted Gamma UCL	0.491		

Note: DL/2 is not a recommended method.

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Acetophenone

General Statistics			
Number of Valid Data	95	Number of Detected Data	34
Number of Distinct Detected Data	30	Number of Non-Detect Data	61
		Percent Non-Detects	64.21%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0025	Minimum Detected	-5.991
Maximum Detected	0.55	Maximum Detected	-0.598
Mean of Detected	0.105	Mean of Detected	-2.7
SD of Detected	0.112	SD of Detected	1.056
Minimum Non-Detect	0.026	Minimum Non-Detect	-3.65
Maximum Non-Detect	18	Maximum Non-Detect	2.89
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	95
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.695	Shapiro Wilk Test Statistic	0.925
5% Shapiro Wilk Critical Value	0.933	5% Shapiro Wilk Critical Value	0.933
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.634	Mean	-1.73
SD	1.385	SD	1.586
95% DL/2 (t) UCL	0.87	95% H-Stat (DL/2) UCL	1.309
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.045
		SD in Log Scale	0.774
		Mean in Original Scale	0.0655
		SD in Original Scale	0.0744
		95% Percentile Bootstrap UCL	0.0785
		95% BCA Bootstrap UCL	0.0828
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.171	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	0.0896		
nu star	79.6		
A-D Test Statistic	0.794	Nonparametric Statistics	
5% A-D Critical Value	0.771	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.771	Mean	0.0808
5% K-S Critical Value	0.155	SD	0.0946
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.0133
		95% KM (t) UCL	0.103
Assuming Gamma Distribution		95% KM (z) UCL	0.103
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.103
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.112
Maximum	0.55	95% KM (BCA) UCL	0.102
Mean	0.121	95% KM (Percentile Bootstrap) UCL	0.103
Median	0.13	95% KM (Chebyshev) UCL	0.139
SD	0.0809	97.5% KM (Chebyshev) UCL	0.164
k star	1.213	99% KM (Chebyshev) UCL	0.213
Theta star	0.0994		
Nu star	230.5	Potential UCLs to Use	
AppChi2	196.3	95% KM (t) UCL	0.103
95% Gamma Approximate UCL	0.142		
95% Adjusted Gamma UCL	0.142		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

alpha-BHC

General Statistics			
Number of Valid Data	148	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	146
		Percent Non-Detects	98.65%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0018	Minimum Detected	-6.32
Maximum Detected	0.0033	Maximum Detected	-5.714
Mean of Detected	0.00255	Mean of Detected	-6.017
SD of Detected	0.00106	SD of Detected	0.429
Minimum Non-Detect	0.0017	Minimum Non-Detect	-6.377
Maximum Non-Detect	0.19	Maximum Non-Detect	-1.661
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	148
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0085	Mean	-5.683
SD	0.0141	SD	1.269
95% DL/2 (t) UCL	0.0104	95% H-Stat (DL/2) UCL	0.0101
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.00182
5% K-S Critical Value	N/A	SD	1.85E-04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	3.24E-05
		95% KM (t) UCL	0.00188
Assuming Gamma Distribution		95% KM (z) UCL	0.00188
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00279

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum	N/A	95% KM (bootstrap t) UCL	0.00183
Maximum	N/A	95% KM (BCA) UCL	0.0033
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	0.00196
SD	N/A	97.5% KM (Chebyshev) UCL	0.00203
k star	N/A	99% KM (Chebyshev) UCL	0.00215
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.00188
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	N/A
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Anthracene

General Statistics			
Number of Valid Data	204	Number of Detected Data	74
Number of Distinct Detected Data	65	Number of Non-Detect Data	130
		Percent Non-Detects	63.73%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0042	Minimum Detected	-5.473
Maximum Detected	7.7	Maximum Detected	2.041
Mean of Detected	0.538	Mean of Detected	-2.007
SD of Detected	1.146	SD of Detected	1.824
Minimum Non-Detect	0.0056	Minimum Non-Detect	-5.185
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.321	Lilliefors Test Statistic	0.106
5% Lilliefors Critical Value	0.103	5% Lilliefors Critical Value	0.103
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.507	Mean	-1.726
SD	0.983	SD	1.579
95% DL/2 (t) UCL	0.621	95% H-Stat (DL/2) UCL	1.102
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.99
		SD in Log Scale	1.499
		Mean in Original Scale	0.221
		SD in Original Scale	0.728
		95% Percentile Bootstrap UCL	0.31
		95% BCA Bootstrap UCL	0.343
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.453	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1.187		
nu star	67.11		
A-D Test Statistic	1.77	Nonparametric Statistics	
5% A-D Critical Value	0.826	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.826	Mean	0.248
5% K-S Critical Value	0.11	SD	0.738
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0536
		95% KM (t) UCL	0.337
Assuming Gamma Distribution		95% KM (z) UCL	0.337
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.337

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum	0.0042	95% KM (bootstrap t) UCL	0.398
Maximum	7.7	95% KM (BCA) UCL	0.345
Mean	0.504	95% KM (Percentile Bootstrap) UCL	0.338
Median	0.404	95% KM (Chebyshev) UCL	0.482
SD	0.738	97.5% KM (Chebyshev) UCL	0.583
k star	0.846	99% KM (Chebyshev) UCL	0.781
Theta star	0.596		
Nu star	345.1	Potential UCLs to Use	
AppChi2	303.1	95% KM (Chebyshev) UCL	0.482
95% Gamma Approximate UCL	0.574		
95% Adjusted Gamma UCL	0.574		

Note: DL/2 is not a recommended method.

Antimony

General Statistics			
Number of Valid Data	204	Number of Detected Data	79
Number of Distinct Detected Data	51	Number of Non-Detect Data	125
		Percent Non-Detects	61.27%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.14	Minimum Detected	-1.966
Maximum Detected	16.5	Maximum Detected	2.803
Mean of Detected	1.368	Mean of Detected	-0.598
SD of Detected	3.19	SD of Detected	1.064
Minimum Non-Detect	0.58	Minimum Non-Detect	-0.545
Maximum Non-Detect	62.7	Maximum Non-Detect	4.138
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.384	Lilliefors Test Statistic	0.234
5% Lilliefors Critical Value	0.0997	5% Lilliefors Critical Value	0.0997
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.868	Mean	0.221
SD	3.793	SD	1.337
95% DL/2 (t) UCL	3.306	95% H-Stat (DL/2) UCL	6.28
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.737
		SD in Log Scale	0.731
		Mean in Original Scale	0.818
		SD in Original Scale	2.031
		95% Percentile Bootstrap UCL	1.062
		95% BCA Bootstrap UCL	1.124
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.651	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.103		
nu star	102.8		
A-D Test Statistic	10.59	Nonparametric Statistics	
5% A-D Critical Value	0.802	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.802	Mean	0.857
5% K-S Critical Value	0.105	SD	2.125
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.16
		95% KM (t) UCL	1.121
Assuming Gamma Distribution		95% KM (z) UCL	1.12
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.12

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum	0.14	95% KM (bootstrap t) UCL	1.275
Maximum	16.5	95% KM (BCA) UCL	1.133
Mean	1.37	95% KM (Percentile Bootstrap) UCL	1.138
Median	1.361	95% KM (Chebyshev) UCL	1.553
SD	1.978	97.5% KM (Chebyshev) UCL	1.855
k star	1.542	99% KM (Chebyshev) UCL	2.447
Theta star	0.889		
Nu star	629	Potential UCLs to Use	
AppChi2	571.8	95% KM (BCA) UCL	1.133
95% Gamma Approximate UCL	1.507		
95% Adjusted Gamma UCL	1.508		

Note: DL/2 is not a recommended method.

Arsenic

General Statistics			
Number of Valid Data	204	Number of Detected Data	200
Number of Distinct Detected Data	109	Number of Non-Detect Data	4
		Percent Non-Detects	1.96%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.44	Minimum Detected	-0.821
Maximum Detected	77.3	Maximum Detected	4.348
Mean of Detected	8.667	Mean of Detected	1.809
SD of Detected	9.535	SD of Detected	0.86
Minimum Non-Detect	0.95	Minimum Non-Detect	-0.0513
Maximum Non-Detect	2.1	Maximum Non-Detect	0.742
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	25
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	179
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	12.25%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.259	Lilliefors Test Statistic	0.138
5% Lilliefors Critical Value	0.0626	5% Lilliefors Critical Value	0.0626
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	8.513	Mean	1.769
SD	9.504	SD	0.901
95% DL/2 (t) UCL	9.612	95% H-Stat (DL/2) UCL	9.94
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	7.841	Mean in Log Scale	1.779
SD	10.31	SD in Log Scale	0.878
95% MLE (t) UCL	9.035	Mean in Original Scale	8.523
95% MLE (Tiku) UCL	8.982	SD in Original Scale	9.496
		95% Percentile Bootstrap UCL	9.68
		95% BCA Bootstrap UCL	9.885
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.554	Data do not follow a Discernable Distribution (0.05)	
Theta Star	5.578		
nu star	621.6		
A-D Test Statistic	4.425	Nonparametric Statistics	
5% A-D Critical Value	0.771	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.771	Mean	8.514
5% K-S Critical Value	0.0648	SD	9.48
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.665
		95% KM (t) UCL	9.614
Assuming Gamma Distribution		95% KM (z) UCL	9.609
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	9.614

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum	1.00E-09	95% KM (bootstrap t) UCL	9.976
Maximum	77.3	95% KM (BCA) UCL	9.793
Mean	8.497	95% KM (Percentile Bootstrap) UCL	9.677
Median	6.55	95% KM (Chebyshev) UCL	11.41
SD	9.517	97.5% KM (Chebyshev) UCL	12.67
k star	0.764	99% KM (Chebyshev) UCL	15.13
Theta star	11.12		
Nu star	311.8	Potential UCLs to Use	
AppChi2	271.9	95% KM (BCA) UCL	9.793
95% Gamma Approximate UCL	9.745		
95% Adjusted Gamma UCL	9.754		

Note: DL/2 is not a recommended method.

Barium

General Statistics			
Number of Valid Observations	204	Number of Distinct Observations	157
Raw Statistics		Log-transformed Statistics	
Minimum	6.6	Minimum of Log Data	1.887
Maximum	7110	Maximum of Log Data	8.869
Mean	310.4	Mean of log Data	4.592
Median	91	SD of log Data	1.359
SD	798.6		
Coefficient of Variation	2.573		
Skewness	5.658		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.352	Lilliefors Test Statistic	0.0976
Lilliefors Critical Value	0.062	Lilliefors Critical Value	0.062
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	402.8	95% H-UCL	314.6
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	385.3
95% Adjusted-CLT UCL	426	97.5% Chebyshev (MVUE) UCL	445.4
95% Modified-t UCL	406.5	99% Chebyshev (MVUE) UCL	563.4
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.542	Data do not follow a Discernable Distribution (0.05)	
Theta Star	572.6		
MLE of Mean	310.4		
MLE of Standard Deviation	421.6		
nu star	221.2		
Approximate Chi Square Value (.05)	187.8	Nonparametric Statistics	
Adjusted Level of Significance	0.0488	95% CLT UCL	402.4
Adjusted Chi Square Value	187.5	95% Jackknife UCL	402.8
		95% Standard Bootstrap UCL	401.5
Anderson-Darling Test Statistic	12.53	95% Bootstrap-t UCL	441.9
Anderson-Darling 5% Critical Value	0.816	95% Hall's Bootstrap UCL	443.1
Kolmogorov-Smirnov Test Statistic	0.205	95% Percentile Bootstrap UCL	407.4
Kolmogorov-Smirnov 5% Critical Value	0.0666	95% BCA Bootstrap UCL	430.8
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	554.1
		97.5% Chebyshev(Mean, Sd) UCL	659.6
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	866.7
95% Approximate Gamma UCL	365.6		
95% Adjusted Gamma UCL	366.1		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	659.6

Benz(a)anthracene

General Statistics

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Valid Data	204	Number of Detected Data	97
Number of Distinct Detected Data	72	Number of Non-Detect Data	107
		Percent Non-Detects	52.45%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0023	Minimum Detected	-6.075
Maximum Detected	19	Maximum Detected	2.944
Mean of Detected	1.108	Mean of Detected	-1.397
SD of Detected	2.687	SD of Detected	1.838
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	201
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.53%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.34	Lilliefors Test Statistic	0.106
5% Lilliefors Critical Value	0.09	5% Lilliefors Critical Value	0.09
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.711	Mean	-1.575
SD	1.93	SD	1.593
95% DL/2 (t) UCL	0.934	95% H-Stat (DL/2) UCL	1.179
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.408
		SD in Log Scale	1.742
		Mean in Original Scale	0.555
		SD in Original Scale	1.922
		95% Percentile Bootstrap UCL	0.789
		95% BCA Bootstrap UCL	0.901
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.427	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.596		
nu star	82.8		
A-D Test Statistic	3.051	Nonparametric Statistics	
5% A-D Critical Value	0.835	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.835	Mean	0.572
5% K-S Critical Value	0.097	SD	1.918
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.135
		95% KM (t) UCL	0.796
Assuming Gamma Distribution		95% KM (z) UCL	0.795
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.795
Minimum	0.0023	95% KM (bootstrap t) UCL	1.007
Maximum	19	95% KM (BCA) UCL	0.792
Mean	1.07	95% KM (Percentile Bootstrap) UCL	0.81
Median	0.886	95% KM (Chebyshev) UCL	1.162
SD	1.854	97.5% KM (Chebyshev) UCL	1.417
k star	0.81	99% KM (Chebyshev) UCL	1.919
Theta star	1.322		
Nu star	330.3	Potential UCLs to Use	
AppChi2	289.2	95% KM (Chebyshev) UCL	1.162
95% Gamma Approximate UCL	1.222		
95% Adjusted Gamma UCL	1.224		

Note: DL/2 is not a recommended method.

Benzaldehyde

General Statistics

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Valid Data	92	Number of Detected Data	26
Number of Distinct Detected Data	22	Number of Non-Detect Data	66
		Percent Non-Detects	71.74%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.028	Minimum Detected	-3.576
Maximum Detected	0.56	Maximum Detected	-0.58
Mean of Detected	0.124	Mean of Detected	-2.396
SD of Detected	0.12	SD of Detected	0.75
Minimum Non-Detect	0.043	Minimum Non-Detect	-3.147
Maximum Non-Detect	18	Maximum Non-Detect	2.89
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	92
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.714	Shapiro Wilk Test Statistic	0.945
5% Shapiro Wilk Critical Value	0.92	5% Shapiro Wilk Critical Value	0.92
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.671	Mean	-1.447
SD	1.396	SD	1.345
95% DL/2 (t) UCL	0.913	95% H-Stat (DL/2) UCL	1.241
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.612
		SD in Log Scale	0.482
		Mean in Original Scale	0.0853
		SD in Original Scale	0.0692
		95% Percentile Bootstrap UCL	0.098
		95% BCA Bootstrap UCL	0.102
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.593	Data appear Lognormal at 5% Significance Level	
Theta Star	0.0778		
nu star	82.83		
A-D Test Statistic	1.112	Nonparametric Statistics	
5% A-D Critical Value	0.759	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.759	Mean	0.0972
5% K-S Critical Value	0.174	SD	0.0935
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0144
		95% KM (t) UCL	0.121
Assuming Gamma Distribution		95% KM (z) UCL	0.121
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.121
Minimum	0.028	95% KM (bootstrap t) UCL	0.13
Maximum	0.56	95% KM (BCA) UCL	0.122
Mean	0.134	95% KM (Percentile Bootstrap) UCL	0.12
Median	0.145	95% KM (Chebyshev) UCL	0.16
SD	0.0682	97.5% KM (Chebyshev) UCL	0.187
k star	4.525	99% KM (Chebyshev) UCL	0.24
Theta star	0.0296		
Nu star	832.7	Potential UCLs to Use	
AppChi2	766.7	95% KM (t) UCL	0.121
95% Gamma Approximate UCL	0.145	95% KM (% Bootstrap) UCL	0.12
95% Adjusted Gamma UCL	0.145		

Note: DL/2 is not a recommended method.

Benzo(a)pyrene

General Statistics

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Valid Data	204	Number of Detected Data	94
Number of Distinct Detected Data	70	Number of Non-Detect Data	110
		Percent Non-Detects	53.92%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0029	Minimum Detected	-5.843
Maximum Detected	17	Maximum Detected	2.833
Mean of Detected	1.095	Mean of Detected	-1.388
SD of Detected	2.437	SD of Detected	1.895
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	202
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	99.02%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.327	Lilliefors Test Statistic	0.111
5% Lilliefors Critical Value	0.0914	5% Lilliefors Critical Value	0.0914
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.697	Mean	-1.545
SD	1.738	SD	1.602
95% DL/2 (t) UCL	0.898	95% H-Stat (DL/2) UCL	1.209
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.406
		SD in Log Scale	1.728
		Mean in Original Scale	0.534
		SD in Original Scale	1.73
		95% Percentile Bootstrap UCL	0.745
		95% BCA Bootstrap UCL	0.822
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.432	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.537		
nu star	81.14		
A-D Test Statistic	2.237	Nonparametric Statistics	
5% A-D Critical Value	0.834	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.834	Mean	0.552
5% K-S Critical Value	0.0984	SD	1.726
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.122
		95% KM (t) UCL	0.754
Assuming Gamma Distribution		95% KM (z) UCL	0.753
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.753
Minimum	0.0029	95% KM (bootstrap t) UCL	0.909
Maximum	17	95% KM (BCA) UCL	0.784
Mean	1.025	95% KM (Percentile Bootstrap) UCL	0.763
Median	0.785	95% KM (Chebyshev) UCL	1.084
SD	1.671	97.5% KM (Chebyshev) UCL	1.314
k star	0.815	99% KM (Chebyshev) UCL	1.766
Theta star	1.258		
Nu star	332.4	Potential UCLs to Use	
AppChi2	291.2	95% KM (Chebyshev) UCL	1.084
95% Gamma Approximate UCL	1.17		
95% Adjusted Gamma UCL	1.171		
Note: DL/2 is not a recommended method.			

Benzo(b)fluoranthene

General Statistics

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Valid Data	204	Number of Detected Data	103
Number of Distinct Detected Data	80	Number of Non-Detect Data	101
		Percent Non-Detects	49.51%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0052	Minimum Detected	-5.259
Maximum Detected	18	Maximum Detected	2.89
Mean of Detected	0.975	Mean of Detected	-1.479
SD of Detected	2.352	SD of Detected	1.75
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	202
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	99.02%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.34	Lilliefors Test Statistic	0.104
5% Lilliefors Critical Value	0.0873	5% Lilliefors Critical Value	0.0873
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.734	Mean	-1.49
SD	1.811	SD	1.55
95% DL/2 (t) UCL	0.944	95% H-Stat (DL/2) UCL	1.215
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.22
		SD in Log Scale	1.578
		Mean in Original Scale	0.526
		SD in Original Scale	1.728
		95% Percentile Bootstrap UCL	0.736
		95% BCA Bootstrap UCL	0.808
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.439	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.222		
nu star	90.35		
A-D Test Statistic	3.919	Nonparametric Statistics	
5% A-D Critical Value	0.832	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.832	Mean	0.546
5% K-S Critical Value	0.0945	SD	1.727
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.122
		95% KM (t) UCL	0.748
Assuming Gamma Distribution		95% KM (z) UCL	0.747
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.748
Minimum	0.0052	95% KM (bootstrap t) UCL	0.888
Maximum	18	95% KM (BCA) UCL	0.788
Mean	0.896	95% KM (Percentile Bootstrap) UCL	0.776
Median	0.543	95% KM (Chebyshev) UCL	1.079
SD	1.69	97.5% KM (Chebyshev) UCL	1.309
k star	0.747	99% KM (Chebyshev) UCL	1.762
Theta star	1.199		
Nu star	304.9	Potential UCLs to Use	
AppChi2	265.5	97.5% KM (Chebyshev) UCL	1.309
95% Gamma Approximate UCL	1.029		
95% Adjusted Gamma UCL	1.03		
Note: DL/2 is not a recommended method.			

Benzo(g,h,i)perylene

General Statistics

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Valid Data	204	Number of Detected Data	82
Number of Distinct Detected Data	62	Number of Non-Detect Data	122
		Percent Non-Detects	59.80%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0024	Minimum Detected	-6.032
Maximum Detected	4.4	Maximum Detected	1.482
Mean of Detected	0.731	Mean of Detected	-1.529
SD of Detected	0.96	SD of Detected	1.871
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.224	Lilliefors Test Statistic	0.109
5% Lilliefors Critical Value	0.0978	5% Lilliefors Critical Value	0.0978
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.508	Mean	-1.602
SD	0.758	SD	1.537
95% DL/2 (t) UCL	0.596	95% H-Stat (DL/2) UCL	1.03
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.655
		SD in Log Scale	1.662
		Mean in Original Scale	0.322
		SD in Original Scale	0.694
		95% Percentile Bootstrap UCL	0.405
		95% BCA Bootstrap UCL	0.419
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.508	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1.438		
nu star	83.37		
A-D Test Statistic	1.238	Nonparametric Statistics	
5% A-D Critical Value	0.817	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.817	Mean	0.346
5% K-S Critical Value	0.104	SD	0.699
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0506
		95% KM (t) UCL	0.429
Assuming Gamma Distribution		95% KM (z) UCL	0.429
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.429
Minimum	0.0024	95% KM (bootstrap t) UCL	0.446
Maximum	4.4	95% KM (BCA) UCL	0.425
Mean	0.715	95% KM (Percentile Bootstrap) UCL	0.433
Median	0.641	95% KM (Chebyshev) UCL	0.566
SD	0.622	97.5% KM (Chebyshev) UCL	0.661
k star	1.109	99% KM (Chebyshev) UCL	0.849
Theta star	0.644		
Nu star	452.6	Potential UCLs to Use	
AppChi2	404.3	95% KM (Chebyshev) UCL	0.566
95% Gamma Approximate UCL	0.8		
95% Adjusted Gamma UCL	0.801		

Note: DL/2 is not a recommended method.

Benzo(k)fluoranthene

General Statistics

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Valid Data	204	Number of Detected Data	66
Number of Distinct Detected Data	50	Number of Non-Detect Data	138
		Percent Non-Detects	67.65%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.036	Minimum Detected	-3.324
Maximum Detected	15	Maximum Detected	2.708
Mean of Detected	1.287	Mean of Detected	-0.659
SD of Detected	2.443	SD of Detected	1.362
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	203
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	99.51%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.304	Lilliefors Test Statistic	0.0839
5% Lilliefors Critical Value	0.109	5% Lilliefors Critical Value	0.109
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.665	Mean	-1.732
SD	1.602	SD	1.819
95% DL/2 (t) UCL	0.85	95% H-Stat (DL/2) UCL	1.39
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.633
		SD in Log Scale	1.71
		Mean in Original Scale	0.443
		SD in Original Scale	1.501
		95% Percentile Bootstrap UCL	0.626
		95% BCA Bootstrap UCL	0.68
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.647	Data appear Lognormal at 5% Significance Level	
Theta Star	1.99		
nu star	85.41		
A-D Test Statistic	1.734	Nonparametric Statistics	
5% A-D Critical Value	0.8	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.8	Mean	0.477
5% K-S Critical Value	0.115	SD	1.498
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.106
		95% KM (t) UCL	0.653
Assuming Gamma Distribution		95% KM (z) UCL	0.652
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.644
Minimum	0.036	95% KM (bootstrap t) UCL	0.793
Maximum	15	95% KM (BCA) UCL	0.696
Mean	1.335	95% KM (Percentile Bootstrap) UCL	0.664
Median	1.071	95% KM (Chebyshev) UCL	0.941
SD	1.449	97.5% KM (Chebyshev) UCL	1.141
k star	1.574	99% KM (Chebyshev) UCL	1.536
Theta star	0.848		
Nu star	642.3	Potential UCLs to Use	
AppChi2	584.5	95% KM (BCA) UCL	0.696
95% Gamma Approximate UCL	1.467		
95% Adjusted Gamma UCL	1.468		

Note: DL/2 is not a recommended method.

beta-BHC

General Statistics

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Number of Valid Data	148	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	147
		Percent Non-Detects	99.32%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable beta-BHC was not processed!

bis(2-Ethylhexyl)phthalate

General Statistics			
Number of Valid Data	204	Number of Detected Data	48
Number of Distinct Detected Data	41	Number of Non-Detect Data	156
		Percent Non-Detects	76.47%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.033	Minimum Detected	-3.411
Maximum Detected	21	Maximum Detected	3.045
Mean of Detected	0.921	Mean of Detected	-1.46
SD of Detected	3.027	SD of Detected	1.463
Minimum Non-Detect	0.028	Minimum Non-Detect	-3.576
Maximum Non-Detect	18	Maximum Non-Detect	2.89
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	203
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	99.51%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.284	Shapiro Wilk Test Statistic	0.907
5% Shapiro Wilk Critical Value	0.947	5% Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.652	Mean	-1.382
SD	1.769	SD	1.256
95% DL/2 (t) UCL	0.857	95% H-Stat (DL/2) UCL	0.754
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.636
		SD in Log Scale	1.15
		Mean in Original Scale	0.265
		SD in Original Scale	1.502
		95% Percentile Bootstrap UCL	0.479
		95% BCA Bootstrap UCL	0.607
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.451	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.041		
nu star	43.3		
A-D Test Statistic	3.767	Nonparametric Statistics	
5% A-D Critical Value	0.822	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.822	Mean	0.289
5% K-S Critical Value	0.136	SD	1.501
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.107
		95% KM (t) UCL	0.465
Assuming Gamma Distribution		95% KM (z) UCL	0.464
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.463
Minimum	0.033	95% KM (bootstrap t) UCL	0.874
Maximum	21	95% KM (BCA) UCL	0.519
Mean	0.919	95% KM (Percentile Bootstrap) UCL	0.49

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Median	0.919	95% KM (Chebyshev) UCL	0.754
SD	1.457	97.5% KM (Chebyshev) UCL	0.955
k star	1.669	99% KM (Chebyshev) UCL	1.351
Theta star	0.551		
Nu star	680.8	Potential UCLs to Use	
AppChi2	621.3	95% KM (BCA) UCL	0.519
95% Gamma Approximate UCL	1.008		
95% Adjusted Gamma UCL	1.008		

Note: DL/2 is not a recommended method.

Cadmium

General Statistics			
Number of Valid Data	204	Number of Detected Data	89
Number of Distinct Detected Data	66	Number of Non-Detect Data	115
		Percent Non-Detects	56.37%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.028	Minimum Detected	-3.576
Maximum Detected	203	Maximum Detected	5.313
Mean of Detected	19.55	Mean of Detected	-0.22
SD of Detected	44.96	SD of Detected	2.516
Minimum Non-Detect	0.35	Minimum Non-Detect	-1.05
Maximum Non-Detect	10	Maximum Non-Detect	2.303
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	186
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	18
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	91.18%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.417	Lilliefors Test Statistic	0.235
5% Lilliefors Critical Value	0.0939	5% Lilliefors Critical Value	0.0939
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	8.946	Mean	-0.385
SD	31.05	SD	1.729
95% DL/2 (t) UCL	12.54	95% H-Stat (DL/2) UCL	4.023
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.815
		SD in Log Scale	1.891
		Mean in Original Scale	8.777
		SD in Original Scale	31.09
		95% Percentile Bootstrap UCL	12.69
		95% BCA Bootstrap UCL	13.14
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.226	Data do not follow a Discernable Distribution (0.05)	
Theta Star	86.54		
nu star	40.21		
A-D Test Statistic	12.43	Nonparametric Statistics	
5% A-D Critical Value	0.9	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.9	Mean	8.668
5% K-S Critical Value	0.104	SD	31.04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	2.186
		95% KM (t) UCL	12.28
Assuming Gamma Distribution		95% KM (z) UCL	12.26
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	12.27
Minimum	0.028	95% KM (bootstrap t) UCL	13.15
Maximum	203	95% KM (BCA) UCL	12.16
Mean	18.91	95% KM (Percentile Bootstrap) UCL	12.37

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Median	15.56	95% KM (Chebyshev) UCL	18.2
SD	29.78	97.5% KM (Chebyshev) UCL	22.32
k star	0.455	99% KM (Chebyshev) UCL	30.42
Theta star	41.6		
Nu star	185.5	Potential UCLs to Use	
AppChi2	155	97.5% KM (Chebyshev) UCL	22.32
95% Gamma Approximate UCL	22.63		
95% Adjusted Gamma UCL	22.66		

Note: DL/2 is not a recommended method.

Calcium

General Statistics			
Number of Valid Observations	204	Number of Distinct Observations	119
Raw Statistics		Log-transformed Statistics	
Minimum	10000	Minimum of Log Data	9.21
Maximum	429000	Maximum of Log Data	12.97
Mean	242015	Mean of log Data	12.2
Median	281500	SD of log Data	0.767
SD	110971		
Coefficient of Variation	0.459		
Skewness	-0.713		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.172	Lilliefors Test Statistic	0.259
Lilliefors Critical Value	0.062	Lilliefors Critical Value	0.062
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	254853	95% H-UCL	295291
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	335326
95% Adjusted-CLT UCL	254380	97.5% Chebyshev (MVUE) UCL	365685
95% Modified-t UCL	254788	99% Chebyshev (MVUE) UCL	425320
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.609	Data do not follow a Discernable Distribution (0.05)	
Theta Star	92745		
MLE of Mean	242015		
MLE of Standard Deviation	149819		
nu star	1065		
Approximate Chi Square Value (.05)	989.9	Nonparametric Statistics	
Adjusted Level of Significance	0.0488	95% CLT UCL	254794
Adjusted Chi Square Value	989.4	95% Jackknife UCL	254853
		95% Standard Bootstrap UCL	254874
Anderson-Darling Test Statistic	16.08	95% Bootstrap-t UCL	254700
Anderson-Darling 5% Critical Value	0.762	95% Hall's Bootstrap UCL	254239
Kolmogorov-Smirnov Test Statistic	0.235	95% Percentile Bootstrap UCL	254007
Kolmogorov-Smirnov 5% Critical Value	0.0637	95% BCA Bootstrap UCL	253547
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	275881
		97.5% Chebyshev(Mean, Sd) UCL	290535
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	319320
95% Approximate Gamma UCL	260289		
95% Adjusted Gamma UCL	260422		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	275881

Constituents of Chlordane (alpha, beta, and gamma)

General Statistics			
Number of Valid Data	99	Number of Detected Data	15
Number of Distinct Detected Data	15	Number of Non-Detect Data	84
		Percent Non-Detects	84.85%

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.003	Minimum Detected	-5.809
Maximum Detected	0.58	Maximum Detected	-0.545
Mean of Detected	0.181	Mean of Detected	-2.801
SD of Detected	0.196	SD of Detected	1.897
Minimum Non-Detect	0.0036	Minimum Non-Detect	-5.627
Maximum Non-Detect	0.362	Maximum Non-Detect	-1.016
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	97
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.98%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.849	Shapiro Wilk Test Statistic	0.885
5% Shapiro Wilk Critical Value	0.881	5% Shapiro Wilk Critical Value	0.881
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.043	Mean	-4.505
SD	0.0988	SD	1.462
95% DL/2 (t) UCL	0.0595	95% H-Stat (DL/2) UCL	0.0383
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.531
		SD in Log Scale	1.505
		Mean in Original Scale	0.0301
		SD in Original Scale	0.098
		95% Percentile Bootstrap UCL	0.0465
		95% BCA Bootstrap UCL	0.0525
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.5	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.363		
nu star	14.99		
A-D Test Statistic	0.567	Nonparametric Statistics	
5% A-D Critical Value	0.788	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.788	Mean	0.0312
5% K-S Critical Value	0.233	SD	0.0976
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0102
		95% KM (t) UCL	0.0481
Assuming Gamma Distribution		95% KM (z) UCL	0.048
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0473
Minimum	0.003	95% KM (bootstrap t) UCL	0.0543
Maximum	0.58	95% KM (BCA) UCL	0.0532
Mean	0.181	95% KM (Percentile Bootstrap) UCL	0.0503
Median	0.181	95% KM (Chebyshev) UCL	0.0757
SD	0.074	97.5% KM (Chebyshev) UCL	0.0949
k star	3.081	99% KM (Chebyshev) UCL	0.133
Theta star	0.0589		
Nu star	610.1	Potential UCLs to Use	
AppChi2	553.8	95% KM (t) UCL	0.0481
95% Gamma Approximate UCL	0.2		
95% Adjusted Gamma UCL	0.2		

Caprolactam

General Statistics			
Number of Valid Data	95	Number of Detected Data	11
Number of Distinct Detected Data	8	Number of Non-Detect Data	84
		Percent Non-Detects	88.42%

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.012	Minimum Detected	-4.423
Maximum Detected	0.05	Maximum Detected	-2.996
Mean of Detected	0.0244	Mean of Detected	-3.795
SD of Detected	0.0107	SD of Detected	0.415
Minimum Non-Detect	0.14	Minimum Non-Detect	-1.966
Maximum Non-Detect	93	Maximum Non-Detect	4.533
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	95
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.874	Shapiro Wilk Test Statistic	0.949
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.367	Mean	-0.899
SD	4.831	SD	1.51
95% DL/2 (t) UCL	2.19	95% H-Stat (DL/2) UCL	3.095
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.795
		SD in Log Scale	0.215
		Mean in Original Scale	0.023
		SD in Original Scale	0.00524
		95% Percentile Bootstrap UCL	0.0239
		95% BCA Bootstrap UCL	0.024
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	4.711	Data appear Normal at 5% Significance Level	
Theta Star	0.00517		
nu star	103.6		
A-D Test Statistic	0.374	Nonparametric Statistics	
5% A-D Critical Value	0.731	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.731	Mean	0.0244
5% K-S Critical Value	0.256	SD	0.0102
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00323
		95% KM (t) UCL	0.0297
Assuming Gamma Distribution		95% KM (z) UCL	0.0297
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.03
Minimum	0.012	95% KM (bootstrap t) UCL	0.032
Maximum	0.05	95% KM (BCA) UCL	0.0304
Mean	0.0256	95% KM (Percentile Bootstrap) UCL	0.0301
Median	0.0262	95% KM (Chebyshev) UCL	0.0385
SD	0.00523	97.5% KM (Chebyshev) UCL	0.0446
k star	22.2	99% KM (Chebyshev) UCL	0.0565
Theta star	0.00115		
Nu star	4218	Potential UCLs to Use	
AppChi2	4068	95% KM (t) UCL	0.0297
95% Gamma Approximate UCL	0.0265	95% KM (Percentile Bootstrap) UCL	0.0301
95% Adjusted Gamma UCL	0.0265		
Note: DL/2 is not a recommended method.			

Carbazole

General Statistics			
Number of Valid Data	204	Number of Detected Data	40
Number of Distinct Detected Data	34	Number of Non-Detect Data	164
		Percent Non-Detects	80.39%

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0016	Minimum Detected	-6.438
Maximum Detected	2	Maximum Detected	0.693
Mean of Detected	0.17	Mean of Detected	-3.135
SD of Detected	0.393	SD of Detected	1.717
Minimum Non-Detect	0.0056	Minimum Non-Detect	-5.185
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.431	Shapiro Wilk Test Statistic	0.973
5% Shapiro Wilk Critical Value	0.94	5% Shapiro Wilk Critical Value	0.94
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.538	Mean	-1.828
SD	1.009	SD	1.75
95% DL/2 (t) UCL	0.655	95% H-Stat (DL/2) UCL	1.403
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.087
		SD in Log Scale	1.162
		Mean in Original Scale	0.0487
		SD in Original Scale	0.183
		95% Percentile Bootstrap UCL	0.0716
		95% BCA Bootstrap UCL	0.084
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.452	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	0.376		
nu star	36.16		
A-D Test Statistic	1.383	Nonparametric Statistics	
5% A-D Critical Value	0.82	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.82	Mean	0.0678
5% K-S Critical Value	0.148	SD	0.2
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.0166
		95% KM (t) UCL	0.0952
Assuming Gamma Distribution		95% KM (z) UCL	0.0951
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.095
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.112
Maximum	2	95% KM (BCA) UCL	0.0971
Mean	0.274	95% KM (Percentile Bootstrap) UCL	0.097
Median	0.251	95% KM (Chebyshev) UCL	0.14
SD	0.305	97.5% KM (Chebyshev) UCL	0.171
k star	0.307	99% KM (Chebyshev) UCL	0.233
Theta star	0.892		
Nu star	125.2	Potential UCLs to Use	
AppChi2	100.3	95% KM (t) UCL	0.0952
95% Gamma Approximate UCL	0.341		
95% Adjusted Gamma UCL	0.342		
Note: DL/2 is not a recommended method.			

Carbon disulfide

General Statistics			
Number of Valid Data	203	Number of Detected Data	11
Number of Distinct Detected Data	10	Number of Non-Detect Data	192
		Percent Non-Detects	94.58%

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	8.50E-04	Minimum Detected	-7.07
Maximum Detected	0.041	Maximum Detected	-3.194
Mean of Detected	0.0166	Mean of Detected	-4.567
SD of Detected	0.0136	SD of Detected	1.198
Minimum Non-Detect	0.0025	Minimum Non-Detect	-5.991
Maximum Non-Detect	3.9	Maximum Non-Detect	1.361
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	203
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.917	Shapiro Wilk Test Statistic	0.922
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.138	Mean	-4.505
SD	0.325	SD	2.255
95% DL/2 (t) UCL	0.176	95% H-Stat (DL/2) UCL	0.263
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-7.231
		SD in Log Scale	1.006
		Mean in Original Scale	0.00166
		SD in Original Scale	0.00473
		95% Percentile Bootstrap UCL	0.00227
		95% BCA Bootstrap UCL	0.00249
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.936	Data appear Normal at 5% Significance Level	
Theta Star	0.0178		
nu star	20.58		
A-D Test Statistic	0.213	Nonparametric Statistics	
5% A-D Critical Value	0.748	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.748	Mean	0.00215
5% K-S Critical Value	0.261	SD	0.00546
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	4.79E-04
		95% KM (t) UCL	0.00294
Assuming Gamma Distribution		95% KM (z) UCL	0.00294
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00334
Minimum	8.50E-04	95% KM (bootstrap t) UCL	0.00311
Maximum	0.041	95% KM (BCA) UCL	0.00946
Mean	0.013	95% KM (Percentile Bootstrap) UCL	0.0085
Median	0.0128	95% KM (Chebyshev) UCL	0.00424
SD	0.00493	97.5% KM (Chebyshev) UCL	0.00514
k star	6.512	99% KM (Chebyshev) UCL	0.00691
Theta star	0.00199		
Nu star	2644	Potential UCLs to Use	
AppChi2	2525	95% KM (t) UCL	0.00294
95% Gamma Approximate UCL	0.0136	95% KM (Percentile Bootstrap) UCL	0.0085
95% Adjusted Gamma UCL	0.0136		
Note: DL/2 is not a recommended method.			

Chromium

General Statistics			
Number of Valid Observations	252	Number of Distinct Observations	179
Raw Statistics		Log-transformed Statistics	
Minimum	1.6	Minimum of Log Data	0.47

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	14000	Maximum of Log Data	9.547
Mean	207.3	Mean of log Data	3.24
Median	14	SD of log Data	1.782
SD	951.2		
Coefficient of Variation	4.588		
Skewness	12.48		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.414	Lilliefors Test Statistic	0.157
Lilliefors Critical Value	0.0558	Lilliefors Critical Value	0.0558
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	306.3	95% H-UCL	172.8
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	216.9
95% Adjusted-CLT UCL	356.2	97.5% Chebyshev (MVUE) UCL	257.6
95% Modified-t UCL	314.1	99% Chebyshev (MVUE) UCL	337.4
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.324	Data do not follow a Discernable Distribution (0.05)	
Theta Star	640.4		
MLE of Mean	207.3		
MLE of Standard Deviation	364.4		
nu star	163.2		
Approximate Chi Square Value (.05)	134.6	Nonparametric Statistics	
Adjusted Level of Significance	0.049	95% CLT UCL	305.9
Adjusted Chi Square Value	134.5	95% Jackknife UCL	306.3
		95% Standard Bootstrap UCL	305.6
Anderson-Darling Test Statistic	27.93	95% Bootstrap-t UCL	451.5
Anderson-Darling 5% Critical Value	0.864	95% Hall's Bootstrap UCL	687.1
Kolmogorov-Smirnov Test Statistic	0.272	95% Percentile Bootstrap UCL	314.1
Kolmogorov-Smirnov 5% Critical Value	0.0624	95% BCA Bootstrap UCL	371.3
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	468.5
		97.5% Chebyshev(Mean, Sd) UCL	581.6
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	803.6
95% Approximate Gamma UCL	251.3		
95% Adjusted Gamma UCL	251.6		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	581.6

Chromium VI

General Statistics			
Number of Valid Data	252	Number of Detected Data	206
Number of Distinct Detected Data	155	Number of Non-Detect Data	46
		Percent Non-Detects	18.25%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.016	Minimum Detected	-4.135
Maximum Detected	236.5	Maximum Detected	5.466
Mean of Detected	10.94	Mean of Detected	-0.906
SD of Detected	34.45	SD of Detected	2.356
Minimum Non-Detect	0.4	Minimum Non-Detect	-0.916
Maximum Non-Detect	5.8	Maximum Non-Detect	1.758
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	224
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	28
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	88.89%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.427	Lilliefors Test Statistic	0.172
5% Lilliefors Critical Value	0.0617	5% Lilliefors Critical Value	0.0617
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	9.068	Mean	-0.914
SD	31.39	SD	2.172
95% DL/2 (t) UCL	12.33	95% H-Stat (DL/2) UCL	10.04
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.099
		SD in Log Scale	2.229
		Mean in Original Scale	8.984
		SD in Original Scale	31.41
		95% Percentile Bootstrap UCL	12.34
		95% BCA Bootstrap UCL	13.24
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.22	Data do not follow a Discernable Distribution (0.05)	
Theta Star	49.75		
nu star	90.58		
A-D Test Statistic	28.24	Nonparametric Statistics	
5% A-D Critical Value	0.905	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.905	Mean	8.976
5% K-S Critical Value	0.0695	SD	31.35
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.979
		95% KM (t) UCL	12.24
Assuming Gamma Distribution		95% KM (z) UCL	12.23
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	12.24
Minimum	0.016	95% KM (bootstrap t) UCL	13
Maximum	236.5	95% KM (BCA) UCL	12.31
Mean	9.85	95% KM (Percentile Bootstrap) UCL	12.4
Median	0.295	95% KM (Chebyshev) UCL	17.6
SD	31.29	97.5% KM (Chebyshev) UCL	21.34
k star	0.253	99% KM (Chebyshev) UCL	28.67
Theta star	38.98		
Nu star	127.4	Potential UCLs to Use	
AppChi2	102.3	97.5% KM (Chebyshev) UCL	21.34
95% Gamma Approximate UCL	12.26		
95% Adjusted Gamma UCL	12.28		

Note: DL/2 is not a recommended method.

Chrysene

General Statistics			
Number of Valid Data	204	Number of Detected Data	110
Number of Distinct Detected Data	79	Number of Non-Detect Data	94
		Percent Non-Detects	46.08%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0038	Minimum Detected	-5.573
Maximum Detected	18	Maximum Detected	2.89
Mean of Detected	1.047	Mean of Detected	-1.419
SD of Detected	2.548	SD of Detected	1.736
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	201
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.53%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.341	Lilliefors Test Statistic	0.115
5% Lilliefors Critical Value	0.0845	5% Lilliefors Critical Value	0.0845
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

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Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.731	Mean	-1.592
SD	1.942	SD	1.596
95% DL/2 (t) UCL	0.955	95% H-Stat (DL/2) UCL	1.196
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.233
		SD in Log Scale	1.685
		Mean in Original Scale	0.592
		SD in Original Scale	1.932
		95% Percentile Bootstrap UCL	0.847
		95% BCA Bootstrap UCL	0.894
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.436	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.4		
nu star	95.96		
A-D Test Statistic	4.844	Nonparametric Statistics	
5% A-D Critical Value	0.833	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.833	Mean	0.606
5% K-S Critical Value	0.0926	SD	1.928
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.136
		95% KM (t) UCL	0.831
Assuming Gamma Distribution		95% KM (z) UCL	0.83
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.83
Minimum	0.0038	95% KM (bootstrap t) UCL	0.937
Maximum	18	95% KM (BCA) UCL	0.851
Mean	0.99	95% KM (Percentile Bootstrap) UCL	0.864
Median	0.751	95% KM (Chebyshev) UCL	1.199
SD	1.876	97.5% KM (Chebyshev) UCL	1.455
k star	0.735	99% KM (Chebyshev) UCL	1.959
Theta star	1.347		
Nu star	300	Potential UCLs to Use	
AppChi2	260.8	97.5% KM (Chebyshev) UCL	1.455
95% Gamma Approximate UCL	1.139		
95% Adjusted Gamma UCL	1.14		

Note: DL/2 is not a recommended method.

Cobalt

General Statistics			
Number of Valid Data	204	Number of Detected Data	165
Number of Distinct Detected Data	101	Number of Non-Detect Data	39
		Percent Non-Detects	19.12%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.2	Minimum Detected	-1.609
Maximum Detected	780	Maximum Detected	6.659
Mean of Detected	13.6	Mean of Detected	1.16
SD of Detected	64.76	SD of Detected	1.354
Minimum Non-Detect	4.9	Minimum Non-Detect	1.589
Maximum Non-Detect	52.3	Maximum Non-Detect	3.957
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	198
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	6
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.06%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.418	Lilliefors Test Statistic	0.141
5% Lilliefors Critical Value	0.069	5% Lilliefors Critical Value	0.069
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	12.14	Mean	1.262
SD	58.31	SD	1.246
95% DL/2 (t) UCL	18.88	95% H-Stat (DL/2) UCL	11.65
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	1.087
		SD in Log Scale	1.241
		Mean in Original Scale	11.46
		SD in Original Scale	58.38
		95% Percentile Bootstrap UCL	19.28
		95% BCA Bootstrap UCL	24.8
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.442	Data do not follow a Discernable Distribution (0.05)	
Theta Star	30.78		
nu star	145.8		
A-D Test Statistic	15.7	Nonparametric Statistics	
5% A-D Critical Value	0.833	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.833	Mean	11.52
5% K-S Critical Value	0.0774	SD	58.23
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.091
		95% KM (t) UCL	18.28
Assuming Gamma Distribution		95% KM (z) UCL	18.25
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	18.28
Minimum	1.00E-09	95% KM (bootstrap t) UCL	35.42
Maximum	780	95% KM (BCA) UCL	19.05
Mean	12.68	95% KM (Percentile Bootstrap) UCL	19.31
Median	2.65	95% KM (Chebyshev) UCL	29.35
SD	58.35	97.5% KM (Chebyshev) UCL	37.07
k star	0.39	99% KM (Chebyshev) UCL	52.22
Theta star	32.53		
Nu star	159.1	Potential UCLs to Use	
AppChi2	130.9	95% KM (Chebyshev) UCL	29.35
95% Gamma Approximate UCL	15.41		
95% Adjusted Gamma UCL	15.43		

Note: DL/2 is not a recommended method.

Constituents of Chlordane

General Statistics			
Number of Valid Data	1	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	1
		Percent Non-Detects	100.00%

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable Constituents of Chlordane was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Copper

General Statistics			
Number of Valid Observations	204	Number of Distinct Observations	142
Raw Statistics		Log-transformed Statistics	
Minimum	1.7	Minimum of Log Data	0.531
Maximum	1980	Maximum of Log Data	7.591

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Mean	104.9	Mean of log Data	2.891
Median	12.4	SD of log Data	1.438
SD	310.7		
Coefficient of Variation	2.962		
Skewness	3.785		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.446	Lilliefors Test Statistic	0.178
Lilliefors Critical Value	0.062	Lilliefors Critical Value	0.062
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	140.8	95% H-UCL	65.48
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	80.77
95% Adjusted-CLT UCL	146.8	97.5% Chebyshev (MVUE) UCL	94.03
95% Modified-t UCL	141.8	99% Chebyshev (MVUE) UCL	120.1
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.375	Data do not follow a Discernable Distribution (0.05)	
Theta Star	279.9		
MLE of Mean	104.9		
MLE of Standard Deviation	171.3		
nu star	152.9		
Approximate Chi Square Value (.05)	125.3	Nonparametric Statistics	
Adjusted Level of Significance	0.0488	95% CLT UCL	140.7
Adjusted Chi Square Value	125.1	95% Jackknife UCL	140.8
		95% Standard Bootstrap UCL	140.2
Anderson-Darling Test Statistic	35.82	95% Bootstrap-t UCL	152.1
Anderson-Darling 5% Critical Value	0.851	95% Hall's Bootstrap UCL	147.9
Kolmogorov-Smirnov Test Statistic	0.332	95% Percentile Bootstrap UCL	140.7
Kolmogorov-Smirnov 5% Critical Value	0.0679	95% BCA Bootstrap UCL	150.3
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	199.7
		97.5% Chebyshev(Mean, Sd) UCL	240.7
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	321.3
95% Approximate Gamma UCL	128		
95% Adjusted Gamma UCL	128.1		
Potential UCL to Use		Use 97.5% Chebyshev (Mean, Sd) UCL	240.7

Cyanide, Total

General Statistics			
Number of Valid Data	195	Number of Detected Data	153
Number of Distinct Detected Data	119	Number of Non-Detect Data	42
		Percent Non-Detects	21.54%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.15	Minimum Detected	-1.897
Maximum Detected	53	Maximum Detected	3.97
Mean of Detected	7.408	Mean of Detected	1.347
SD of Detected	8.133	SD of Detected	1.29
Minimum Non-Detect	0.51	Minimum Non-Detect	-0.673
Maximum Non-Detect	1.7	Maximum Non-Detect	0.531
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	83
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	112
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	42.56%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.186	Lilliefors Test Statistic	0.0932
5% Lilliefors Critical Value	0.0716	5% Lilliefors Critical Value	0.0716
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	5.904	Mean	0.853
SD	7.754	SD	1.496
95% DL/2 (t) UCL	6.821	95% H-Stat (DL/2) UCL	6.725
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	2.726	Mean in Log Scale	0.903
SD	11.21	SD in Log Scale	1.44
95% MLE (t) UCL	4.052	Mean in Original Scale	5.928
95% MLE (Tiku) UCL	4.247	SD in Original Scale	7.737
		95% Percentile Bootstrap UCL	6.911
		95% BCA Bootstrap UCL	6.968
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.88	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	8.418		
nu star	269.3		
A-D Test Statistic	0.833	Nonparametric Statistics	
5% A-D Critical Value	0.789	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.789	Mean	5.909
5% K-S Critical Value	0.0783	SD	7.73
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.555
		95% KM (t) UCL	6.827
Assuming Gamma Distribution		95% KM (z) UCL	6.823
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	6.826
Minimum	1.00E-09	95% KM (bootstrap t) UCL	7.022
Maximum	53	95% KM (BCA) UCL	6.903
Mean	5.982	95% KM (Percentile Bootstrap) UCL	6.88
Median	2.81	95% KM (Chebyshev) UCL	8.33
SD	7.712	97.5% KM (Chebyshev) UCL	9.378
k star	0.274	99% KM (Chebyshev) UCL	11.44
Theta star	21.84		
Nu star	106.8	Potential UCLs to Use	
AppChi2	83.98	95% KM (Chebyshev) UCL	8.33
95% Gamma Approximate UCL	7.611		
95% Adjusted Gamma UCL	7.624		

Note: DL/2 is not a recommended method.

delta-BHC

General Statistics			
Number of Valid Data	148	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	142
		Percent Non-Detects	95.95%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.001	Minimum Detected	-6.908
Maximum Detected	0.0073	Maximum Detected	-4.92
Mean of Detected	0.00297	Mean of Detected	-6.066
SD of Detected	0.00236	SD of Detected	0.762
Minimum Non-Detect	4.30E-04	Minimum Non-Detect	-7.752
Maximum Non-Detect	0.19	Maximum Non-Detect	-1.661
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	148
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.846	Shapiro Wilk Test Statistic	0.945
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00852	Mean	-5.69
SD	0.0141	SD	1.291
95% DL/2 (t) UCL	0.0104	95% H-Stat (DL/2) UCL	0.0105
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-7.134
		SD in Log Scale	0.468
		Mean in Original Scale	9.09E-04
		SD in Original Scale	6.85E-04
		95% Percentile Bootstrap UCL	0.00101
		95% BCA Bootstrap UCL	0.00104
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.205	Data appear Normal at 5% Significance Level	
Theta Star	0.00246		
nu star	14.46		
A-D Test Statistic	0.288	Nonparametric Statistics	
5% A-D Critical Value	0.704	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.704	Mean	0.0012
5% K-S Critical Value	0.336	SD	7.45E-04
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	9.70E-05
		95% KM (t) UCL	0.00136
Assuming Gamma Distribution		95% KM (z) UCL	0.00136
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00134
Minimum	0.001	95% KM (bootstrap t) UCL	0.00137
Maximum	0.0073	95% KM (BCA) UCL	0.00315
Mean	0.0031	95% KM (Percentile Bootstrap) UCL	0.003
Median	0.00319	95% KM (Chebyshev) UCL	0.00162
SD	9.27E-04	97.5% KM (Chebyshev) UCL	0.00181
k star	9.984	99% KM (Chebyshev) UCL	0.00217
Theta star	3.10E-04		
Nu star	2955	Potential UCLs to Use	
AppChi2	2830	95% KM (t) UCL	0.00136
95% Gamma Approximate UCL	0.00323	95% KM (Percentile Bootstrap) UCL	0.003
95% Adjusted Gamma UCL	0.00323		

Note: DL/2 is not a recommended method.

Dibenz(a,h)anthracene

General Statistics			
Number of Valid Data	204	Number of Detected Data	44
Number of Distinct Detected Data	39	Number of Non-Detect Data	160
		Percent Non-Detects	78.43%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.002	Minimum Detected	-6.215
Maximum Detected	2.3	Maximum Detected	0.833
Mean of Detected	0.358	Mean of Detected	-2.221
SD of Detected	0.532	SD of Detected	1.88
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.675	Shapiro Wilk Test Statistic	0.935
5% Shapiro Wilk Critical Value	0.944	5% Shapiro Wilk Critical Value	0.944
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.527	Mean	-1.789
SD	0.959	SD	1.725
95% DL/2 (t) UCL	0.638	95% H-Stat (DL/2) UCL	1.371
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.731
		SD in Log Scale	1.422
		Mean in Original Scale	0.0961
		SD in Original Scale	0.282
		95% Percentile Bootstrap UCL	0.129
		95% BCA Bootstrap UCL	0.137
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.507	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.707		
nu star	44.59		
A-D Test Statistic	0.475	Nonparametric Statistics	
5% A-D Critical Value	0.811	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.811	Mean	0.125
5% K-S Critical Value	0.141	SD	0.302
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0242
		95% KM (t) UCL	0.165
Assuming Gamma Distribution		95% KM (z) UCL	0.165
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.165
Minimum	0.002	95% KM (bootstrap t) UCL	0.175
Maximum	2.3	95% KM (BCA) UCL	0.166
Mean	0.478	95% KM (Percentile Bootstrap) UCL	0.166
Median	0.404	95% KM (Chebyshev) UCL	0.231
SD	0.351	97.5% KM (Chebyshev) UCL	0.277
k star	1.45	99% KM (Chebyshev) UCL	0.366
Theta star	0.33		
Nu star	591.4	Potential UCLs to Use	
AppChi2	536	95% KM (t) UCL	0.165
95% Gamma Approximate UCL	0.527		
95% Adjusted Gamma UCL	0.527		

Note: DL/2 is not a recommended method.

Dibenzofuran

General Statistics			
Number of Valid Data	204	Number of Detected Data	72
Number of Distinct Detected Data	61	Number of Non-Detect Data	132
		Percent Non-Detects	64.71%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0018	Minimum Detected	-6.32
Maximum Detected	3.9	Maximum Detected	1.361
Mean of Detected	0.348	Mean of Detected	-2.844
SD of Detected	0.795	SD of Detected	1.934
Minimum Non-Detect	0.026	Minimum Non-Detect	-3.65
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.388	Lilliefors Test Statistic	0.0765
5% Lilliefors Critical Value	0.104	5% Lilliefors Critical Value	0.104
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.602	Mean	-1.575
SD	1.019	SD	1.669
95% DL/2 (t) UCL	0.72	95% H-Stat (DL/2) UCL	1.717
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.143
		SD in Log Scale	1.332
		Mean in Original Scale	0.155
		SD in Original Scale	0.492
		95% Percentile Bootstrap UCL	0.213
		95% BCA Bootstrap UCL	0.223
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.366	Data appear Lognormal at 5% Significance Level	
Theta Star	0.949		
nu star	52.74		
A-D Test Statistic	4.242	Nonparametric Statistics	
5% A-D Critical Value	0.848	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.848	Mean	0.182
5% K-S Critical Value	0.113	SD	0.515
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.039
		95% KM (t) UCL	0.246
Assuming Gamma Distribution		95% KM (z) UCL	0.246
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.246
Minimum	0.0018	95% KM (bootstrap t) UCL	0.27
Maximum	3.9	95% KM (BCA) UCL	0.254
Mean	0.349	95% KM (Percentile Bootstrap) UCL	0.251
Median	0.35	95% KM (Chebyshev) UCL	0.352
SD	0.47	97.5% KM (Chebyshev) UCL	0.425
k star	0.913	99% KM (Chebyshev) UCL	0.57
Theta star	0.382		
Nu star	372.7	Potential UCLs to Use	
AppChi2	328.9	95% KM (Chebyshev) UCL	0.352
95% Gamma Approximate UCL	0.395		
95% Adjusted Gamma UCL	0.396		

Note: DL/2 is not a recommended method.

Dieldrin

General Statistics			
Number of Valid Data	148	Number of Detected Data	34
Number of Distinct Detected Data	31	Number of Non-Detect Data	114
		Percent Non-Detects	77.03%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.00E-04	Minimum Detected	-7.824
Maximum Detected	1.6	Maximum Detected	0.47
Mean of Detected	0.281	Mean of Detected	-2.697
SD of Detected	0.369	SD of Detected	2.273
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.19	Maximum Non-Detect	-1.661
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	133
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	15
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	89.86%

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.77	Shapiro Wilk Test Statistic	0.923
5% Shapiro Wilk Critical Value	0.933	5% Shapiro Wilk Critical Value	0.933
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0724	Mean	-4.666
SD	0.209	SD	1.774
95% DL/2 (t) UCL	0.101	95% H-Stat (DL/2) UCL	0.0558
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-6.038
		SD in Log Scale	2.35
		Mean in Original Scale	0.0658
		SD in Original Scale	0.211
		95% Percentile Bootstrap UCL	0.0953
		95% BCA Bootstrap UCL	0.101
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.432	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.652		
nu star	29.34		
A-D Test Statistic	0.385	Nonparametric Statistics	
5% A-D Critical Value	0.822	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.822	Mean	0.0661
5% K-S Critical Value	0.161	SD	0.21
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0176
		95% KM (t) UCL	0.0951
Assuming Gamma Distribution		95% KM (z) UCL	0.0949
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0948
Minimum	4.00E-04	95% KM (bootstrap t) UCL	0.109
Maximum	1.6	95% KM (BCA) UCL	0.101
Mean	0.282	95% KM (Percentile Bootstrap) UCL	0.0946
Median	0.281	95% KM (Chebyshev) UCL	0.143
SD	0.175	97.5% KM (Chebyshev) UCL	0.176
k star	1.641	99% KM (Chebyshev) UCL	0.241
Theta star	0.172		
Nu star	485.6	Potential UCLs to Use	
AppChi2	435.5	95% KM (t) UCL	0.0951
95% Gamma Approximate UCL	0.314		
95% Adjusted Gamma UCL	0.314		

Note: DL/2 is not a recommended method.

Endosulfan I

General Statistics			
Number of Valid Data	147	Number of Detected Data	3
Number of Distinct Detected Data	2	Number of Non-Detect Data	144
		Percent Non-Detects	97.96%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0037	Minimum Detected	-5.599
Maximum Detected	0.0083	Maximum Detected	-4.791
Mean of Detected	0.00523	Mean of Detected	-5.33
SD of Detected	0.00266	SD of Detected	0.466
Minimum Non-Detect	0.0017	Minimum Non-Detect	-6.377
Maximum Non-Detect	0.19	Maximum Non-Detect	-1.661
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	147
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.75	Shapiro Wilk Test Statistic	0.75
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00858	Mean	-5.675
SD	0.0141	SD	1.279
95% DL/2 (t) UCL	0.0105	95% H-Stat (DL/2) UCL	0.0103
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-8.248
		SD in Log Scale	0.829
		Mean in Original Scale	4.16E-04
		SD in Original Scale	7.99E-04
		95% Percentile Bootstrap UCL	5.32E-04
		95% BCA Bootstrap UCL	5.93E-04
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.00375
5% K-S Critical Value	N/A	SD	4.60E-04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	5.66E-05
		95% KM (t) UCL	0.00384
Assuming Gamma Distribution		95% KM (z) UCL	0.00384
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00382
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.0083
Median	N/A	95% KM (Chebyshev) UCL	0.00399
SD	N/A	97.5% KM (Chebyshev) UCL	0.0041
k star	N/A	99% KM (Chebyshev) UCL	0.00431
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.00384
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	0.0083
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Ethylbenzene

General Statistics

Number of Valid Data	203	Number of Detected Data	41

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Distinct Detected Data	34	Number of Non-Detect Data	162
		Percent Non-Detects	79.80%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0017	Minimum Detected	-6.377
Maximum Detected	3.5	Maximum Detected	1.253
Mean of Detected	0.335	Mean of Detected	-2.161
SD of Detected	0.588	SD of Detected	1.727
Minimum Non-Detect	0.0025	Minimum Non-Detect	-5.991
Maximum Non-Detect	1.3	Maximum Non-Detect	0.262
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	201
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	99.01%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.544	Shapiro Wilk Test Statistic	0.956
5% Shapiro Wilk Critical Value	0.941	5% Shapiro Wilk Critical Value	0.941
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.108	Mean	-4.682
SD	0.308	SD	2.165
95% DL/2 (t) UCL	0.144	95% H-Stat (DL/2) UCL	0.104
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.854
		SD in Log Scale	2.292
		Mean in Original Scale	0.0693
		SD in Original Scale	0.294
		95% Percentile Bootstrap UCL	0.106
		95% BCA Bootstrap UCL	0.125
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.556	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.603		
nu star	45.56		
A-D Test Statistic	0.339	Nonparametric Statistics	
5% A-D Critical Value	0.805	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.805	Mean	0.0727
5% K-S Critical Value	0.145	SD	0.295
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0211
		95% KM (t) UCL	0.108
Assuming Gamma Distribution		95% KM (z) UCL	0.107
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.106
Minimum	0.0017	95% KM (bootstrap t) UCL	0.137
Maximum	3.5	95% KM (BCA) UCL	0.116
Mean	0.334	95% KM (Percentile Bootstrap) UCL	0.111
Median	0.336	95% KM (Chebyshev) UCL	0.165
SD	0.262	97.5% KM (Chebyshev) UCL	0.204
k star	2.435	99% KM (Chebyshev) UCL	0.282
Theta star	0.137		
Nu star	988.8	Potential UCLs to Use	
AppChi2	916.8	95% KM (t) UCL	0.108
95% Gamma Approximate UCL	0.361		
95% Adjusted Gamma UCL	0.361		

Note: DL/2 is not a recommended method.

Fluoranthene

General Statistics			
Number of Valid Data	204	Number of Detected Data	148

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Distinct Detected Data	98	Number of Non-Detect Data	56
		Percent Non-Detects	27.45%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0025	Minimum Detected	-5.991
Maximum Detected	30	Maximum Detected	3.401
Mean of Detected	1.456	Mean of Detected	-1.248
SD of Detected	4.209	SD of Detected	1.75
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	200
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.04%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.365	Lilliefors Test Statistic	0.131
5% Lilliefors Critical Value	0.0728	5% Lilliefors Critical Value	0.0728
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.175	Mean	-1.355
SD	3.635	SD	1.662
95% DL/2 (t) UCL	1.595	95% H-Stat (DL/2) UCL	1.518
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.623
		SD in Log Scale	1.684
		Mean in Original Scale	1.083
		SD in Original Scale	3.633
		95% Percentile Bootstrap UCL	1.521
		95% BCA Bootstrap UCL	1.655
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.401	Data do not follow a Discernable Distribution (0.05)	
Theta Star	3.631		
nu star	118.6		
A-D Test Statistic	8.979	Nonparametric Statistics	
5% A-D Critical Value	0.843	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.843	Mean	1.094
5% K-S Critical Value	0.0825	SD	3.624
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.255
		95% KM (t) UCL	1.515
Assuming Gamma Distribution		95% KM (z) UCL	1.513
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.514
Minimum	0.0025	95% KM (bootstrap t) UCL	1.817
Maximum	30	95% KM (BCA) UCL	1.513
Mean	1.306	95% KM (Percentile Bootstrap) UCL	1.551
Median	0.385	95% KM (Chebyshev) UCL	2.204
SD	3.6	97.5% KM (Chebyshev) UCL	2.685
k star	0.503	99% KM (Chebyshev) UCL	3.629
Theta star	2.595		
Nu star	205.4	Potential UCLs to Use	
AppChi2	173.2	97.5% KM (Chebyshev) UCL	2.685
95% Gamma Approximate UCL	1.549		
95% Adjusted Gamma UCL	1.551		
Note: DL/2 is not a recommended method.			

Fluorene

General Statistics			
Number of Valid Data	203	Number of Detected Data	34

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Distinct Detected Data	32	Number of Non-Detect Data	169
		Percent Non-Detects	83.25%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0087	Minimum Detected	-4.744
Maximum Detected	8.6	Maximum Detected	2.152
Mean of Detected	0.645	Mean of Detected	-1.697
SD of Detected	1.555	SD of Detected	1.598
Minimum Non-Detect	0.0046	Minimum Non-Detect	-5.382
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	203
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.409	Shapiro Wilk Test Statistic	0.954
5% Shapiro Wilk Critical Value	0.933	5% Shapiro Wilk Critical Value	0.933
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.566	Mean	-1.784
SD	1.124	SD	1.745
95% DL/2 (t) UCL	0.696	95% H-Stat (DL/2) UCL	1.175
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.057
		SD in Log Scale	1.55
		Mean in Original Scale	0.123
		SD in Original Scale	0.671
		95% Percentile Bootstrap UCL	0.206
		95% BCA Bootstrap UCL	0.258
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.479	Data appear Lognormal at 5% Significance Level	
Theta Star	1.345		
nu star	32.59		
A-D Test Statistic	1.841	Nonparametric Statistics	
5% A-D Critical Value	0.811	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.811	Mean	0.158
5% K-S Critical Value	0.16	SD	0.681
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0503
		95% KM (t) UCL	0.241
Assuming Gamma Distribution		95% KM (z) UCL	0.24
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.238
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.339
Maximum	8.6	95% KM (BCA) UCL	0.254
Mean	1.006	95% KM (Percentile Bootstrap) UCL	0.249
Median	0.664	95% KM (Chebyshev) UCL	0.377
SD	1.116	97.5% KM (Chebyshev) UCL	0.472
k star	0.323	99% KM (Chebyshev) UCL	0.658
Theta star	3.116		
Nu star	131.1	Potential UCLs to Use	
AppChi2	105.7	95% KM (Chebyshev) UCL	0.377
95% Gamma Approximate UCL	1.249		
95% Adjusted Gamma UCL	1.251		
Note: DL/2 is not a recommended method.			

Hexachlorobenzene

General Statistics			
Number of Valid Data	206	Number of Detected Data	5

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Distinct Detected Data	5	Number of Non-Detect Data	201
		Percent Non-Detects	97.57%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.51	Minimum Detected	-0.673
Maximum Detected	2.7	Maximum Detected	0.993
Mean of Detected	1.562	Mean of Detected	0.286
SD of Detected	0.907	SD of Detected	0.665
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	206
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.925	Shapiro Wilk Test Statistic	0.935
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.54	Mean	-1.732
SD	0.93	SD	1.74
95% DL/2 (t) UCL	0.647	95% H-Stat (DL/2) UCL	1.096
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-3.854
		SD in Log Scale	1.053
		Mean in Original Scale	0.0642
		SD in Original Scale	0.27
		95% Percentile Bootstrap UCL	0.0986
		95% BCA Bootstrap UCL	0.11
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.447	Data appear Normal at 5% Significance Level	
Theta Star	1.079		
nu star	14.47		
A-D Test Statistic	0.292	Nonparametric Statistics	
5% A-D Critical Value	0.682	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.682	Mean	0.539
5% K-S Critical Value	0.359	SD	0.218
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.018
		95% KM (t) UCL	0.569
Assuming Gamma Distribution		95% KM (z) UCL	0.568
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.914
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.561
Maximum	2.7	95% KM (BCA) UCL	2.302
Mean	0.0379	95% KM (Percentile Bootstrap) UCL	2.3
Median	1.00E-09	95% KM (Chebyshev) UCL	0.617
SD	0.272	97.5% KM (Chebyshev) UCL	0.651
k star	0.054	99% KM (Chebyshev) UCL	0.718
Theta star	0.702		
Nu star	22.25	Potential UCLs to Use	
AppChi2	12.53	95% KM (t) UCL	0.569
95% Gamma Approximate UCL	0.0673	95% KM (Percentile Bootstrap) UCL	2.3
95% Adjusted Gamma UCL	0.0676		

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Note: DL/2 is not a recommended method.

Indeno(1,2,3-c,d)pyrene

General Statistics			
Number of Valid Data	204	Number of Detected Data	78
Number of Distinct Detected Data	63	Number of Non-Detect Data	126
		Percent Non-Detects	61.76%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0051	Minimum Detected	-5.279
Maximum Detected	5.4	Maximum Detected	1.686
Mean of Detected	0.646	Mean of Detected	-1.65
SD of Detected	0.941	SD of Detected	1.851
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.248	Lilliefors Test Statistic	0.132
5% Lilliefors Critical Value	0.1	5% Lilliefors Critical Value	0.1
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.491	Mean	-1.644
SD	0.778	SD	1.541
95% DL/2 (t) UCL	0.581	95% H-Stat (DL/2) UCL	1.021
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.747
		SD in Log Scale	1.582
		Mean in Original Scale	0.275
		SD in Original Scale	0.65
		95% Percentile Bootstrap UCL	0.355
		95% BCA Bootstrap UCL	0.369
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.509	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	1.27		
nu star	79.39		
A-D Test Statistic	1.099	Nonparametric Statistics	
5% A-D Critical Value	0.816	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.816	Mean	0.299
5% K-S Critical Value	0.107	SD	0.657
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.0477
		95% KM (t) UCL	0.378
Assuming Gamma Distribution		95% KM (z) UCL	0.377
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.377
Minimum	0.0051	95% KM (bootstrap t) UCL	0.402
Maximum	5.4	95% KM (BCA) UCL	0.382
Mean	0.611	95% KM (Percentile Bootstrap) UCL	0.379
Median	0.515	95% KM (Chebyshev) UCL	0.507
SD	0.614	97.5% KM (Chebyshev) UCL	0.597
k star	1.08	99% KM (Chebyshev) UCL	0.773
Theta star	0.566		
Nu star	440.8	Potential UCLs to Use	
AppChi2	393.1	95% KM (t) UCL	0.378
95% Gamma Approximate UCL	0.686		
95% Adjusted Gamma UCL	0.686		

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Note: DL/2 is not a recommended method.

Iron

General Statistics			
Number of Valid Observations	204	Number of Distinct Observations	152
Raw Statistics		Log-transformed Statistics	
Minimum	1690	Minimum of Log Data	7.432
Maximum	180000	Maximum of Log Data	12.1
Mean	10879	Mean of log Data	8.963
Median	6795	SD of log Data	0.726
SD	15504		
Coefficient of Variation	1.425		
Skewness	7.845		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.279	Lilliefors Test Statistic	0.112
Lilliefors Critical Value	0.062	Lilliefors Critical Value	0.062
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	12673	95% H-UCL	11218
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	12661
95% Adjusted-CLT UCL	13301	97.5% Chebyshev (MVUE) UCL	13750
95% Modified-t UCL	12772	99% Chebyshev (MVUE) UCL	15887
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.633	Data do not follow a Discernable Distribution (0.05)	
Theta Star	6661		
MLE of Mean	10879		
MLE of Standard Deviation	8512		
nu star	666.4		
Approximate Chi Square Value (.05)	607.5	Nonparametric Statistics	
Adjusted Level of Significance	0.0488	95% CLT UCL	12664
Adjusted Chi Square Value	607.1	95% Jackknife UCL	12673
		95% Standard Bootstrap UCL	12681
Anderson-Darling Test Statistic	6.713	95% Bootstrap-t UCL	14081
Anderson-Darling 5% Critical Value	0.77	95% Hall's Bootstrap UCL	21409
Kolmogorov-Smirnov Test Statistic	0.161	95% Percentile Bootstrap UCL	12829
Kolmogorov-Smirnov 5% Critical Value	0.0643	95% BCA Bootstrap UCL	13582
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	15611
		97.5% Chebyshev(Mean, Sd) UCL	17658
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	21680
95% Approximate Gamma UCL	11933		
95% Adjusted Gamma UCL	11941		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	15611

Isopropylbenzene

General Statistics			
Number of Valid Data	93	Number of Detected Data	9
Number of Distinct Detected Data	7	Number of Non-Detect Data	84
		Percent Non-Detects	90.32%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.012	Minimum Detected	-4.423
Maximum Detected	1.5	Maximum Detected	0.405
Mean of Detected	0.39	Mean of Detected	-2.078
SD of Detected	0.558	SD of Detected	1.765
Minimum Non-Detect	0.0056	Minimum Non-Detect	-5.185
Maximum Non-Detect	2.2	Maximum Non-Detect	0.788

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	93
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 9 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.704	Shapiro Wilk Test Statistic	0.931
5% Shapiro Wilk Critical Value	0.829	5% Shapiro Wilk Critical Value	0.829
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.203	Mean	-3.32
SD	0.292	SD	2.244
95% DL/2 (t) UCL	0.253	95% H-Stat (DL/2) UCL	0.967
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-7.464
		SD in Log Scale	2.162
		Mean in Original Scale	0.0383
		SD in Original Scale	0.201
		95% Percentile Bootstrap UCL	0.0738
		95% BCA Bootstrap UCL	0.0925
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.441	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.884		
nu star	7.941		
A-D Test Statistic	0.42	Nonparametric Statistics	
5% A-D Critical Value	0.767	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.767	Mean	0.0558
5% K-S Critical Value	0.293	SD	0.204
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0235
		95% KM (t) UCL	0.0949
Assuming Gamma Distribution		95% KM (z) UCL	0.0945
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0929
Minimum	0.012	95% KM (bootstrap t) UCL	0.153
Maximum	1.5	95% KM (BCA) UCL	0.151
Mean	0.41	95% KM (Percentile Bootstrap) UCL	0.117
Median	0.37	95% KM (Chebyshev) UCL	0.158
SD	0.224	97.5% KM (Chebyshev) UCL	0.203
k star	2.921	99% KM (Chebyshev) UCL	0.29
Theta star	0.14		
Nu star	543.3	Potential UCLs to Use	
AppChi2	490.2	95% KM (t) UCL	0.0949
95% Gamma Approximate UCL	0.454		
95% Adjusted Gamma UCL	0.455		

Note: DL/2 is not a recommended method.

Lead

General Statistics

Number of Valid Data	204	Number of Detected Data	196
Number of Distinct Detected Data	135	Number of Non-Detect Data	8
		Percent Non-Detects	3.92%

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.56	Minimum Detected	-0.58
Maximum Detected	1670	Maximum Detected	7.421
Mean of Detected	112.7	Mean of Detected	2.951
SD of Detected	307.1	SD of Detected	1.626
Minimum Non-Detect	7.8	Minimum Non-Detect	2.054
Maximum Non-Detect	16.4	Maximum Non-Detect	2.797
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	113
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	91
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	55.39%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.413	Lilliefors Test Statistic	0.118
5% Lilliefors Critical Value	0.0633	5% Lilliefors Critical Value	0.0633
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	108.5	Mean	2.9
SD	301.7	SD	1.614
95% DL/2 (t) UCL	143.4	95% H-Stat (DL/2) UCL	93.62
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.894
		SD in Log Scale	1.62
		Mean in Original Scale	108.5
		SD in Original Scale	301.7
		95% Percentile Bootstrap UCL	144.3
		95% BCA Bootstrap UCL	150.1
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.372	Data do not follow a Discernable Distribution (0.05)	
Theta Star	302.7		
nu star	146		
A-D Test Statistic	23.57	Nonparametric Statistics	
5% A-D Critical Value	0.851	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.851	Mean	108.5
5% K-S Critical Value	0.0696	SD	300.9
Data not Gamma Distributed at 5% Significance Level		SE of Mean	21.12
		95% KM (t) UCL	143.4
Assuming Gamma Distribution		95% KM (z) UCL	143.3
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	143.4
Minimum	1.00E-09	95% KM (bootstrap t) UCL	148.7
Maximum	1670	95% KM (BCA) UCL	149.1
Mean	108.3	95% KM (Percentile Bootstrap) UCL	145.3
Median	14	95% KM (Chebyshev) UCL	200.6
SD	301.7	97.5% KM (Chebyshev) UCL	240.4
k star	0.264	99% KM (Chebyshev) UCL	318.7
Theta star	410.7		
Nu star	107.6	Potential UCLs to Use	
AppChi2	84.66	97.5% KM (Chebyshev) UCL	240.4
95% Gamma Approximate UCL	137.7		
95% Adjusted Gamma UCL	137.9		
Note: DL/2 is not a recommended method.			

Xylenes, m & p

General Statistics			
Number of Valid Data	39	Number of Detected Data	12
Number of Distinct Detected Data	11	Number of Non-Detect Data	27
		Percent Non-Detects	69.23%

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.22	Minimum Detected	-1.514
Maximum Detected	18	Maximum Detected	2.89
Mean of Detected	4.463	Mean of Detected	0.553
SD of Detected	5.402	SD of Detected	1.607
Minimum Non-Detect	0.0056	Minimum Non-Detect	-5.185
Maximum Non-Detect	0.014	Maximum Non-Detect	-4.269
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	27
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	12
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	69.23%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.799	Shapiro Wilk Test Statistic	0.887
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.376	Mean	-3.679
SD	3.577	SD	2.996
95% DL/2 (t) UCL	2.342	95% H-Stat (DL/2) UCL	4.382
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-3.115
		SD in Log Scale	2.768
		Mean in Original Scale	1.383
		SD in Original Scale	3.574
		95% Percentile Bootstrap UCL	2.407
		95% BCA Bootstrap UCL	2.753
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.542	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	8.238		
nu star	13		
A-D Test Statistic	0.576	Nonparametric Statistics	
5% A-D Critical Value	0.773	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.773	Mean	1.525
5% K-S Critical Value	0.256	SD	3.474
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.581
		95% KM (t) UCL	2.505
Assuming Gamma Distribution		95% KM (z) UCL	2.481
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.435
Minimum	0.22	95% KM (bootstrap t) UCL	3.255
Maximum	18	95% KM (BCA) UCL	2.72
Mean	4.43	95% KM (Percentile Bootstrap) UCL	2.552
Median	4.515	95% KM (Chebyshev) UCL	4.058
SD	2.981	97.5% KM (Chebyshev) UCL	5.153
k star	1.681	99% KM (Chebyshev) UCL	7.306
Theta star	2.635		
Nu star	131.1	Potential UCLs to Use	
AppChi2	105.7	95% KM (t) UCL	2.505
95% Gamma Approximate UCL	5.496		
95% Adjusted Gamma UCL	5.544		
Note: DL/2 is not a recommended method.			

Manganese

General Statistics			
Number of Valid Observations	204	Number of Distinct Observations	121
Raw Statistics		Log-transformed Statistics	
Minimum	57.5	Minimum of Log Data	4.052

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	5100	Maximum of Log Data	8.537
Mean	380.8	Mean of log Data	5.743
Median	315	SD of log Data	0.555
SD	429.2		
Coefficient of Variation	1.127		
Skewness	8.066		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Lilliefors Test Statistic	0.258	Lilliefors Test Statistic	0.0669
Lilliefors Critical Value	0.062	Lilliefors Critical Value	0.062
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	430.5	95% H-UCL	391
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	429.8
95% Adjusted-CLT UCL	448.4	97.5% Chebyshev (MVUE) UCL	458.4
95% Modified-t UCL	433.3	99% Chebyshev (MVUE) UCL	514.5
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.631	Data do not follow a Discernable Distribution (0.05)	
Theta Star	144.7		
MLE of Mean	380.8		
MLE of Standard Deviation	234.8		
nu star	1074		
Approximate Chi Square Value (.05)	998.5	Nonparametric Statistics	
Adjusted Level of Significance	0.0488	95% CLT UCL	430.2
Adjusted Chi Square Value	998	95% Jackknife UCL	430.5
		95% Standard Bootstrap UCL	430.7
Anderson-Darling Test Statistic	5.645	95% Bootstrap-t UCL	478.5
Anderson-Darling 5% Critical Value	0.762	95% Hall's Bootstrap UCL	665.7
Kolmogorov-Smirnov Test Statistic	0.12	95% Percentile Bootstrap UCL	434.7
Kolmogorov-Smirnov 5% Critical Value	0.0637	95% BCA Bootstrap UCL	452
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	511.8
		97.5% Chebyshev(Mean, Sd) UCL	568.5
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	679.8
95% Approximate Gamma UCL	409.4		
95% Adjusted Gamma UCL	409.7		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	511.8

Mercury

General Statistics			
Number of Valid Data	209	Number of Detected Data	185
Number of Distinct Detected Data	100	Number of Non-Detect Data	24
		Percent Non-Detects	11.48%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.012	Minimum Detected	-4.423
Maximum Detected	11.5	Maximum Detected	2.442
Mean of Detected	0.88	Mean of Detected	-1.897
SD of Detected	2.306	SD of Detected	1.515
Minimum Non-Detect	0.026	Minimum Non-Detect	-3.65
Maximum Non-Detect	0.11	Maximum Non-Detect	-2.207
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	110
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	99
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	52.63%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.439	Lilliefors Test Statistic	0.195
5% Lilliefors Critical Value	0.0651	5% Lilliefors Critical Value	0.0651
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.781	Mean	-2.121
SD	2.186	SD	1.563
95% DL/2 (t) UCL	1.031	95% H-Stat (DL/2) UCL	0.541
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-2.159
		SD in Log Scale	1.614
		Mean in Original Scale	0.781
		SD in Original Scale	2.186
		95% Percentile Bootstrap UCL	1.032
		95% BCA Bootstrap UCL	1.084
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.373	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.356		
nu star	138.1		
A-D Test Statistic	30.24	Nonparametric Statistics	
5% A-D Critical Value	0.851	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.851	Mean	0.782
5% K-S Critical Value	0.0726	SD	2.181
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.151
		95% KM (t) UCL	1.032
Assuming Gamma Distribution		95% KM (z) UCL	1.031
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.032
Minimum	1.00E-09	95% KM (bootstrap t) UCL	1.075
Maximum	11.5	95% KM (BCA) UCL	1.049
Mean	0.779	95% KM (Percentile Bootstrap) UCL	1.039
Median	0.095	95% KM (Chebyshev) UCL	1.441
SD	2.187	97.5% KM (Chebyshev) UCL	1.726
k star	0.195	99% KM (Chebyshev) UCL	2.287
Theta star	4.002		
Nu star	81.32	Potential UCLs to Use	
AppChi2	61.54	97.5% KM (Chebyshev) UCL	1.726
95% Gamma Approximate UCL	1.029		
95% Adjusted Gamma UCL	1.031		

Note: DL/2 is not a recommended method.

Methoxychlor

General Statistics			
Number of Valid Data	148	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	145
		Percent Non-Detects	97.97%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0059	Minimum Detected	-5.133
Maximum Detected	0.076	Maximum Detected	-2.577
Mean of Detected	0.0302	Mean of Detected	-4.148
SD of Detected	0.0397	SD of Detected	1.375
Minimum Non-Detect	0.0086	Minimum Non-Detect	-4.756
Maximum Non-Detect	1.9	Maximum Non-Detect	0.642
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	148
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.781	Shapiro Wilk Test Statistic	0.864
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0818	Mean	-3.425
SD	0.137	SD	1.278
95% DL/2 (t) UCL	0.1	95% H-Stat (DL/2) UCL	0.101
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.023
		SD in Log Scale	0.512
		Mean in Original Scale	0.00769
		SD in Original Scale	0.00667
		95% Percentile Bootstrap UCL	0.00869
		95% BCA Bootstrap UCL	0.00913
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.00756
5% K-S Critical Value	N/A	SD	0.00705
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00128
		95% KM (t) UCL	0.00968
Assuming Gamma Distribution		95% KM (z) UCL	0.00967
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00994
Minimum	N/A	95% KM (bootstrap t) UCL	0.00923
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	0.0131
SD	N/A	97.5% KM (Chebyshev) UCL	0.0156
k star	N/A	99% KM (Chebyshev) UCL	0.0203
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.00968
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	N/A
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Methyl Mercury (Derived)

General Statistics

Number of Valid Data	206	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	206
		Percent Non-Detects	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Methyl Mercury (Derived) was not processed!

Methyl Mercury (Derived)

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

General Statistics			
Number of Valid Data	206	Number of Detected Data	182
Number of Distinct Detected Data	99	Number of Non-Detect Data	24
		Percent Non-Detects	11.65%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.20E-04	Minimum Detected	-9.028
Maximum Detected	0.115	Maximum Detected	-2.163
Mean of Detected	0.00892	Mean of Detected	-6.498
SD of Detected	0.0232	SD of Detected	1.527
Minimum Non-Detect	2.60E-04	Minimum Non-Detect	-8.255
Maximum Non-Detect	0.0011	Maximum Non-Detect	-6.812
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	109
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	97
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	52.91%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.439	Lilliefors Test Statistic	0.193
5% Lilliefors Critical Value	0.0657	5% Lilliefors Critical Value	0.0657
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00791	Mean	-6.726
SD	0.022	SD	1.574
95% DL/2 (t) UCL	0.0104	95% H-Stat (DL/2) UCL	0.00556
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-6.765
		SD in Log Scale	1.627
		Mean in Original Scale	0.0079
		SD in Original Scale	0.022
		95% Percentile Bootstrap UCL	0.0106
		95% BCA Bootstrap UCL	0.0109
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.372	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.024		
nu star	135.2		
A-D Test Statistic	29.45	Nonparametric Statistics	
5% A-D Critical Value	0.851	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.851	Mean	0.00791
5% K-S Critical Value	0.0734	SD	0.022
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00153
		95% KM (t) UCL	0.0104
Assuming Gamma Distribution		95% KM (z) UCL	0.0104
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0104
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.0108
Maximum	0.115	95% KM (BCA) UCL	0.0103
Mean	0.00788	95% KM (Percentile Bootstrap) UCL	0.0106
Median	9.45E-04	95% KM (Chebyshev) UCL	0.0146
SD	0.022	97.5% KM (Chebyshev) UCL	0.0175
k star	0.219	99% KM (Chebyshev) UCL	0.0232
Theta star	0.036		
Nu star	90.27	Potential UCLs to Use	
AppChi2	69.36	97.5% KM (Chebyshev) UCL	0.0175
95% Gamma Approximate UCL	0.0103		
95% Adjusted Gamma UCL	0.0103		

Note: DL/2 is not a recommended method.

Molybdenum

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

General Statistics			
Number of Valid Data	5	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	4
		Percent Non-Detects	80.00%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Molybdenum was not processed!

Naphthalene

General Statistics			
Number of Valid Data	204	Number of Detected Data	108
Number of Distinct Detected Data	89	Number of Non-Detect Data	96
		Percent Non-Detects	47.06%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0034	Minimum Detected	-5.684
Maximum Detected	1300	Maximum Detected	7.17
Mean of Detected	29.23	Mean of Detected	0.163
SD of Detected	144.8	SD of Detected	2.605
Minimum Non-Detect	0.028	Minimum Non-Detect	-3.576
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	185
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	19
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.69%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.42	Lilliefors Test Statistic	0.0813
5% Lilliefors Critical Value	0.0853	5% Lilliefors Critical Value	0.0853
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	15.86	Mean	-0.321
SD	106.1	SD	2.084
95% DL/2 (t) UCL	28.13	95% H-Stat (DL/2) UCL	7.595
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.904
		SD in Log Scale	2.298
		Mean in Original Scale	15.55
		SD in Original Scale	106.1
		95% Percentile Bootstrap UCL	29.22
		95% BCA Bootstrap UCL	37.65
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.225	Data appear Lognormal at 5% Significance Level	
Theta Star	130		
nu star	48.56		
A-D Test Statistic	7.993	Nonparametric Statistics	
5% A-D Critical Value	0.901	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.901	Mean	15.58
5% K-S Critical Value	0.0963	SD	105.9
Data not Gamma Distributed at 5% Significance Level		SE of Mean	7.446
		95% KM (t) UCL	27.89
Assuming Gamma Distribution		95% KM (z) UCL	27.83
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	27.86
Minimum	0.0034	95% KM (bootstrap t) UCL	79.18

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	1300	95% KM (BCA) UCL	28.25
Mean	29.68	95% KM (Percentile Bootstrap) UCL	29.12
Median	26.41	95% KM (Chebyshev) UCL	48.04
SD	105.1	97.5% KM (Chebyshev) UCL	62.08
k star	0.386	99% KM (Chebyshev) UCL	89.67
Theta star	76.89		
Nu star	157.5	Potential UCLs to Use	
AppChi2	129.5	97.5% KM (Chebyshev) UCL	62.08
95% Gamma Approximate UCL	36.1		
95% Adjusted Gamma UCL	36.15		
Note: DL/2 is not a recommended method.			

Nickel

General Statistics			
Number of Valid Data	204	Number of Detected Data	194
Number of Distinct Detected Data	121	Number of Non-Detect Data	10
		Percent Non-Detects	4.90%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.6	Minimum Detected	0.956
Maximum Detected	9800	Maximum Detected	9.19
Mean of Detected	118	Mean of Detected	2.96
SD of Detected	810.6	SD of Detected	1.284
Minimum Non-Detect	6.3	Minimum Non-Detect	1.841
Maximum Non-Detect	13.1	Maximum Non-Detect	2.573
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	103
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	101
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	50.49%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.443	Lilliefors Test Statistic	0.171
5% Lilliefors Critical Value	0.0636	5% Lilliefors Critical Value	0.0636
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	112.5	Mean	2.886
SD	790.7	SD	1.295
95% DL/2 (t) UCL	203.9	95% H-Stat (DL/2) UCL	52.41
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.887
		SD in Log Scale	1.297
		Mean in Original Scale	112.5
		SD in Original Scale	790.7
		95% Percentile Bootstrap UCL	208.3
		95% BCA Bootstrap UCL	290.5
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.366	Data do not follow a Discernable Distribution (0.05)	
Theta Star	322.4		
nu star	142		
A-D Test Statistic	28.86	Nonparametric Statistics	
5% A-D Critical Value	0.853	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.853	Mean	112.5
5% K-S Critical Value	0.0702	SD	788.8
Data not Gamma Distributed at 5% Significance Level		SE of Mean	55.37
		95% KM (t) UCL	204
Assuming Gamma Distribution		95% KM (z) UCL	203.6
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	204
Minimum	1.00E-09	95% KM (bootstrap t) UCL	1224

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	9800	95% KM (BCA) UCL	236.9
Mean	112.2	95% KM (Percentile Bootstrap) UCL	212.2
Median	13	95% KM (Chebyshev) UCL	353.9
SD	790.8	97.5% KM (Chebyshev) UCL	458.3
k star	0.244	99% KM (Chebyshev) UCL	663.4
Theta star	460.5		
Nu star	99.45	Potential UCLs to Use	
AppChi2	77.45	95% KM (Chebyshev) UCL	353.9
95% Gamma Approximate UCL	144.1		
95% Adjusted Gamma UCL	144.4		
Note: DL/2 is not a recommended method.			

o-Xylene

General Statistics			
Number of Valid Data	39	Number of Detected Data	12
Number of Distinct Detected Data	11	Number of Non-Detect Data	27
		Percent Non-Detects	69.23%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.073	Minimum Detected	-2.617
Maximum Detected	4.5	Maximum Detected	1.504
Mean of Detected	1.233	Mean of Detected	-0.572
SD of Detected	1.354	SD of Detected	1.456
Minimum Non-Detect	0.0056	Minimum Non-Detect	-5.185
Maximum Non-Detect	0.014	Maximum Non-Detect	-4.269
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	27
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	12
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	69.23%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.826	Shapiro Wilk Test Statistic	0.895
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.382	Mean	-4.025
SD	0.928	SD	2.473
95% DL/2 (t) UCL	0.633	95% H-Stat (DL/2) UCL	0.496
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-3.869
		SD in Log Scale	2.49
		Mean in Original Scale	0.384
		SD in Original Scale	0.927
		95% Percentile Bootstrap UCL	0.658
		95% BCA Bootstrap UCL	0.707
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.629	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1.96		
nu star	15.1		
A-D Test Statistic	0.573	Nonparametric Statistics	
5% A-D Critical Value	0.765	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.765	Mean	0.43
5% K-S Critical Value	0.255	SD	0.897
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.15
		95% KM (t) UCL	0.683
Assuming Gamma Distribution		95% KM (z) UCL	0.677
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.66
Minimum	0.073	95% KM (bootstrap t) UCL	0.82

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	4.5	95% KM (BCA) UCL	0.746
Mean	1.223	95% KM (Percentile Bootstrap) UCL	0.712
Median	1.237	95% KM (Chebyshev) UCL	1.084
SD	0.747	97.5% KM (Chebyshev) UCL	1.366
k star	2.004	99% KM (Chebyshev) UCL	1.922
Theta star	0.61		
Nu star	156.3	Potential UCLs to Use	
AppChi2	128.4	95% KM (t) UCL	0.683
95% Gamma Approximate UCL	1.489		
95% Adjusted Gamma UCL	1.501		
Note: DL/2 is not a recommended method.			

Phenanthrene

General Statistics			
Number of Valid Data	204	Number of Detected Data	132
Number of Distinct Detected Data	92	Number of Non-Detect Data	72
		Percent Non-Detects	35.29%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0034	Minimum Detected	-5.684
Maximum Detected	32	Maximum Detected	3.466
Mean of Detected	1.36	Mean of Detected	-1.353
SD of Detected	3.965	SD of Detected	1.845
Minimum Non-Detect	0.033	Minimum Non-Detect	-3.411
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	200
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.04%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.366	Lilliefors Test Statistic	0.0646
5% Lilliefors Critical Value	0.0771	5% Lilliefors Critical Value	0.0771
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.031	Mean	-1.33
SD	3.243	SD	1.566
95% DL/2 (t) UCL	1.406	95% H-Stat (DL/2) UCL	1.378
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.74
		SD in Log Scale	1.625
		Mean in Original Scale	0.917
		SD in Original Scale	3.241
		95% Percentile Bootstrap UCL	1.296
		95% BCA Bootstrap UCL	1.486
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.393	Data appear Lognormal at 5% Significance Level	
Theta Star	3.462		
nu star	103.7		
A-D Test Statistic	5.555	Nonparametric Statistics	
5% A-D Critical Value	0.844	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.844	Mean	0.931
5% K-S Critical Value	0.087	SD	3.233
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.227
		95% KM (t) UCL	1.306
Assuming Gamma Distribution		95% KM (z) UCL	1.305
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.306
Minimum	0.0034	95% KM (bootstrap t) UCL	1.577

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	32	95% KM (BCA) UCL	1.293
Mean	1.325	95% KM (Percentile Bootstrap) UCL	1.33
Median	1.025	95% KM (Chebyshev) UCL	1.922
SD	3.187	97.5% KM (Chebyshev) UCL	2.351
k star	0.571	99% KM (Chebyshev) UCL	3.194
Theta star	2.321		
Nu star	232.9	Potential UCLs to Use	
AppChi2	198.6	97.5% KM (Chebyshev) UCL	2.351
95% Gamma Approximate UCL	1.554		
95% Adjusted Gamma UCL	1.556		
Note: DL/2 is not a recommended method.			

Phenol

General Statistics			
Number of Valid Data	193	Number of Detected Data	45
Number of Distinct Detected Data	39	Number of Non-Detect Data	148
		Percent Non-Detects	76.68%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.013	Minimum Detected	-4.343
Maximum Detected	2.2	Maximum Detected	0.788
Mean of Detected	0.457	Mean of Detected	-1.473
SD of Detected	0.527	SD of Detected	1.293
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	12	Maximum Non-Detect	2.485
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	193
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.76	Shapiro Wilk Test Statistic	0.949
5% Shapiro Wilk Critical Value	0.945	5% Shapiro Wilk Critical Value	0.945
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.602	Mean	-1.499
SD	0.99	SD	1.619
95% DL/2 (t) UCL	0.72	95% H-Stat (DL/2) UCL	1.069
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.95
		SD in Log Scale	1.245
		Mean in Original Scale	0.141
		SD in Original Scale	0.309
		95% Percentile Bootstrap UCL	0.18
		95% BCA Bootstrap UCL	0.188
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.811	Data appear Lognormal at 5% Significance Level	
Theta Star	0.564		
nu star	73		
A-D Test Statistic	0.903	Nonparametric Statistics	
5% A-D Critical Value	0.784	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.784	Mean	0.176
5% K-S Critical Value	0.136	SD	0.335
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0282
		95% KM (t) UCL	0.223
Assuming Gamma Distribution		95% KM (z) UCL	0.223
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.221
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.23

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	2.2	95% KM (BCA) UCL	0.234
Mean	0.481	95% KM (Percentile Bootstrap) UCL	0.23
Median	0.517	95% KM (Chebyshev) UCL	0.299
SD	0.342	97.5% KM (Chebyshev) UCL	0.352
k star	1.319	99% KM (Chebyshev) UCL	0.457
Theta star	0.365		
Nu star	509.1	Potential UCLs to Use	
AppChi2	457.8	95% KM (BCA) UCL	0.234
95% Gamma Approximate UCL	0.535		
95% Adjusted Gamma UCL	0.536		
Note: DL/2 is not a recommended method.			

Pyrene

General Statistics			
Number of Valid Data	204	Number of Detected Data	135
Number of Distinct Detected Data	90	Number of Non-Detect Data	69
		Percent Non-Detects	33.82%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0037	Minimum Detected	-5.599
Maximum Detected	33	Maximum Detected	3.497
Mean of Detected	1.521	Mean of Detected	-1.282
SD of Detected	4.465	SD of Detected	1.793
Minimum Non-Detect	0.011	Minimum Non-Detect	-4.51
Maximum Non-Detect	9.1	Maximum Non-Detect	2.208
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	200
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	98.04%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.367	Lilliefors Test Statistic	0.129
5% Lilliefors Critical Value	0.0763	5% Lilliefors Critical Value	0.0763
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.136	Mean	-1.465
SD	3.688	SD	1.705
95% DL/2 (t) UCL	1.563	95% H-Stat (DL/2) UCL	1.525
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.852
		SD in Log Scale	1.767
		Mean in Original Scale	1.033
		SD in Original Scale	3.692
		95% Percentile Bootstrap UCL	1.489
		95% BCA Bootstrap UCL	1.682
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.385	Data do not follow a Discernable Distribution (0.05)	
Theta Star	3.954		
nu star	103.9		
A-D Test Statistic	8.136	Nonparametric Statistics	
5% A-D Critical Value	0.847	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.847	Mean	1.045
5% K-S Critical Value	0.0863	SD	3.683
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.259
		95% KM (t) UCL	1.473
Assuming Gamma Distribution		95% KM (z) UCL	1.471
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.472
Minimum	0.0037	95% KM (bootstrap t) UCL	1.752

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	33	95% KM (BCA) UCL	1.511
Mean	1.472	95% KM (Percentile Bootstrap) UCL	1.506
Median	1.178	95% KM (Chebyshev) UCL	2.174
SD	3.63	97.5% KM (Chebyshev) UCL	2.662
k star	0.549	99% KM (Chebyshev) UCL	3.622
Theta star	2.683		
Nu star	223.8	Potential UCLs to Use	
AppChi2	190.2	97.5% KM (Chebyshev) UCL	2.662
95% Gamma Approximate UCL	1.732		
95% Adjusted Gamma UCL	1.734		
Note: DL/2 is not a recommended method.			

Selenium

General Statistics			
Number of Valid Data	204	Number of Detected Data	88
Number of Distinct Detected Data	62	Number of Non-Detect Data	116
		Percent Non-Detects	56.86%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.21	Minimum Detected	-1.561
Maximum Detected	35	Maximum Detected	3.555
Mean of Detected	1.965	Mean of Detected	-0.00114
SD of Detected	4.432	SD of Detected	0.976
Minimum Non-Detect	0.29	Minimum Non-Detect	-1.238
Maximum Non-Detect	10.5	Maximum Non-Detect	2.351
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	202
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	99.02%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.346	Lilliefors Test Statistic	0.113
5% Lilliefors Critical Value	0.0944	5% Lilliefors Critical Value	0.0944
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.166	Mean	-0.464
SD	3.015	SD	0.888
95% DL/2 (t) UCL	1.514	95% H-Stat (DL/2) UCL	1.1
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.629
		SD in Log Scale	0.921
		Mean in Original Scale	1.06
		SD in Original Scale	3.01
		95% Percentile Bootstrap UCL	1.442
		95% BCA Bootstrap UCL	1.666
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.846	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.322		
nu star	148.9		
A-D Test Statistic	5.36	Nonparametric Statistics	
5% A-D Critical Value	0.788	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.788	Mean	1.087
5% K-S Critical Value	0.0986	SD	3
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.212
		95% KM (t) UCL	1.437
Assuming Gamma Distribution		95% KM (z) UCL	1.435
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.436
Minimum	0.21	95% KM (bootstrap t) UCL	2.085

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	35	95% KM (BCA) UCL	1.474
Mean	1.959	95% KM (Percentile Bootstrap) UCL	1.468
Median	1.733	95% KM (Chebyshev) UCL	2.01
SD	2.911	97.5% KM (Chebyshev) UCL	2.41
k star	1.796	99% KM (Chebyshev) UCL	3.194
Theta star	1.091		
Nu star	732.8	Potential UCLs to Use	
AppChi2	671	95% KM (t) UCL	1.437
95% Gamma Approximate UCL	2.139	95% KM (% Bootstrap) UCL	1.468
95% Adjusted Gamma UCL	2.14		
Note: DL/2 is not a recommended method.			

Silver

General Statistics			
Number of Valid Data	204	Number of Detected Data	53
Number of Distinct Detected Data	49	Number of Non-Detect Data	151
		Percent Non-Detects	74.02%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.1	Minimum Detected	-2.303
Maximum Detected	80.2	Maximum Detected	4.385
Mean of Detected	16.05	Mean of Detected	0.561
SD of Detected	25.1	SD of Detected	2.381
Minimum Non-Detect	0.4	Minimum Non-Detect	-0.916
Maximum Non-Detect	10	Maximum Non-Detect	2.303
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	187
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	17
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	91.67%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.351	Lilliefors Test Statistic	0.225
5% Lilliefors Critical Value	0.122	5% Lilliefors Critical Value	0.122
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.751	Mean	-0.15
SD	14.37	SD	1.367
95% DL/2 (t) UCL	6.414	95% H-Stat (DL/2) UCL	2.551
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.645
		SD in Log Scale	1.712
		Mean in Original Scale	4.625
		SD in Original Scale	14.41
		95% Percentile Bootstrap UCL	6.336
		95% BCA Bootstrap UCL	6.686
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.305	Data do not follow a Discernable Distribution (0.05)	
Theta Star	52.63		
nu star	32.32		
A-D Test Statistic	4.934	Nonparametric Statistics	
5% A-D Critical Value	0.86	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.86	Mean	4.393
5% K-S Critical Value	0.132	SD	14.43
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.02
		95% KM (t) UCL	6.079
Assuming Gamma Distribution		95% KM (z) UCL	6.071
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	6.067
Minimum	0.1	95% KM (bootstrap t) UCL	6.541

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	80.2	95% KM (BCA) UCL	6.207
Mean	15.99	95% KM (Percentile Bootstrap) UCL	6.132
Median	11.32	95% KM (Chebyshev) UCL	8.84
SD	14.61	97.5% KM (Chebyshev) UCL	10.76
k star	0.881	99% KM (Chebyshev) UCL	14.54
Theta star	18.16		
Nu star	359.4	Potential UCLs to Use	
AppChi2	316.4	97.5% KM (Chebyshev) UCL	10.76
95% Gamma Approximate UCL	18.16		
95% Adjusted Gamma UCL	18.18		
Note: DL/2 is not a recommended method.			

Sodium

General Statistics			
Number of Valid Data	204	Number of Detected Data	197
Number of Distinct Detected Data	141	Number of Non-Detect Data	7
		Percent Non-Detects	3.43%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	49	Minimum Detected	3.892
Maximum Detected	18600	Maximum Detected	9.831
Mean of Detected	2180	Mean of Detected	6.946
SD of Detected	2651	SD of Detected	1.393
Minimum Non-Detect	118	Minimum Non-Detect	4.771
Maximum Non-Detect	1045	Maximum Non-Detect	6.952
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	84
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	120
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	41.18%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.211	Lilliefors Test Statistic	0.126
5% Lilliefors Critical Value	0.0631	5% Lilliefors Critical Value	0.0631
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2110	Mean	6.864
SD	2632	SD	1.442
95% DL/2 (t) UCL	2415	95% H-Stat (DL/2) UCL	3303
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	1256	Mean in Log Scale	6.877
SD	3570	SD in Log Scale	1.42
95% MLE (t) UCL	1669	Mean in Original Scale	2111
95% MLE (Tiku) UCL	1724	SD in Original Scale	2631
		95% Percentile Bootstrap UCL	2417
		95% BCA Bootstrap UCL	2455
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.792	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2754		
nu star	312		
A-D Test Statistic	2.111	Nonparametric Statistics	
5% A-D Critical Value	0.794	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.794	Mean	2110
5% K-S Critical Value	0.0669	SD	2626
Data not Gamma Distributed at 5% Significance Level		SE of Mean	184.3
		95% KM (t) UCL	2415
Assuming Gamma Distribution		95% KM (z) UCL	2413
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2415
Minimum	1.00E-09	95% KM (bootstrap t) UCL	2463

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	18600	95% KM (BCA) UCL	2401
Mean	2105	95% KM (Percentile Bootstrap) UCL	2418
Median	1330	95% KM (Chebyshev) UCL	2913
SD	2635	97.5% KM (Chebyshev) UCL	3261
k star	0.395	99% KM (Chebyshev) UCL	3944
Theta star	5328		
Nu star	161.2	Potential UCLs to Use	
AppChi2	132.9	95% KM (Chebyshev) UCL	2913
95% Gamma Approximate UCL	2555		
95% Adjusted Gamma UCL	2558		
Note: DL/2 is not a recommended method.			

Thallium

General Statistics			
Number of Valid Data	204	Number of Detected Data	31
Number of Distinct Detected Data	25	Number of Non-Detect Data	173
		Percent Non-Detects	84.80%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.31	Minimum Detected	-1.171
Maximum Detected	3.9	Maximum Detected	1.361
Mean of Detected	1.548	Mean of Detected	0.231
SD of Detected	0.92	SD of Detected	0.697
Minimum Non-Detect	0.58	Minimum Non-Detect	-0.545
Maximum Non-Detect	16.4	Maximum Non-Detect	2.797
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	204
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.944	Shapiro Wilk Test Statistic	0.936
5% Shapiro Wilk Critical Value	0.929	5% Shapiro Wilk Critical Value	0.929
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.996	Mean	-0.191
SD	0.825	SD	0.566
95% DL/2 (t) UCL	1.092	95% H-Stat (DL/2) UCL	1.047
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.481
		SD in Log Scale	0.553
		Mean in Original Scale	0.736
		SD in Original Scale	0.54
		95% Percentile Bootstrap UCL	0.798
		95% BCA Bootstrap UCL	0.803
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	2.356	Data appear Normal at 5% Significance Level	
Theta Star	0.657		
nu star	146		
A-D Test Statistic	0.494	Nonparametric Statistics	
5% A-D Critical Value	0.755	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.755	Mean	0.717
5% K-S Critical Value	0.159	SD	0.566
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0547
		95% KM (t) UCL	0.807
Assuming Gamma Distribution		95% KM (z) UCL	0.807
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.809
Minimum	0.31	95% KM (bootstrap t) UCL	0.82

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	3.9	95% KM (BCA) UCL	0.799
Mean	1.564	95% KM (Percentile Bootstrap) UCL	0.81
Median	1.576	95% KM (Chebyshev) UCL	0.955
SD	0.447	97.5% KM (Chebyshev) UCL	1.059
k star	10.34	99% KM (Chebyshev) UCL	1.261
Theta star	0.151		
Nu star	4219	Potential UCLs to Use	
AppChi2	4069	95% KM (t) UCL	0.807
95% Gamma Approximate UCL	1.622	95% KM (Percentile Bootstrap) UCL	0.81
95% Adjusted Gamma UCL	1.622		
Note: DL/2 is not a recommended method.			

Toluene

General Statistics			
Number of Valid Data	204	Number of Detected Data	60
Number of Distinct Detected Data	57	Number of Non-Detect Data	144
		Percent Non-Detects	70.59%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	5.70E-04	Minimum Detected	-7.47
Maximum Detected	37	Maximum Detected	3.611
Mean of Detected	4.078	Mean of Detected	-1.479
SD of Detected	7.647	SD of Detected	3.377
Minimum Non-Detect	0.0025	Minimum Non-Detect	-5.991
Maximum Non-Detect	1	Maximum Non-Detect	0
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	178
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	26
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	87.25%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.297	Lilliefors Test Statistic	0.132
5% Lilliefors Critical Value	0.114	5% Lilliefors Critical Value	0.114
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.236	Mean	-4.143
SD	4.515	SD	2.945
95% DL/2 (t) UCL	1.758	95% H-Stat (DL/2) UCL	1.637
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-5.561
		SD in Log Scale	3.495
		Mean in Original Scale	1.201
		SD in Original Scale	4.524
		95% Percentile Bootstrap UCL	1.746
		95% BCA Bootstrap UCL	1.867
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.246	Data do not follow a Discernable Distribution (0.05)	
Theta Star	16.61		
nu star	29.46		
A-D Test Statistic	1.099	Nonparametric Statistics	
5% A-D Critical Value	0.888	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.888	Mean	1.202
5% K-S Critical Value	0.126	SD	4.512
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.319
		95% KM (t) UCL	1.729
Assuming Gamma Distribution		95% KM (z) UCL	1.726
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.725
Minimum	5.70E-04	95% KM (bootstrap t) UCL	1.925

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	37	95% KM (BCA) UCL	1.737
Mean	3.99	95% KM (Percentile Bootstrap) UCL	1.759
Median	3.501	95% KM (Chebyshev) UCL	2.591
SD	4.215	97.5% KM (Chebyshev) UCL	3.192
k star	0.689	99% KM (Chebyshev) UCL	4.372
Theta star	5.788		
Nu star	281.3	Potential UCLs to Use	
AppChi2	243.4	97.5% KM (Chebyshev) UCL	3.192
95% Gamma Approximate UCL	4.611		
95% Adjusted Gamma UCL	4.615		
Note: DL/2 is not a recommended method.			

Total PCBs

s			
General Statistics			
Number of Valid Data	99	Number of Detected Data	48
Number of Distinct Detected Data	45	Number of Non-Detect Data	51
s		Percent Non-Detects	51.52%
s			
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.002	Minimum Detected	-6.215
Maximum Detected	38.8	Maximum Detected	3.658
Mean of Detected	2.376	Mean of Detected	-2.29
SD of Detected	6.468	SD of Detected	2.685
Minimum Non-Detect	0.017	Minimum Non-Detect	-4.075
Maximum Non-Detect	0.125	Maximum Non-Detect	-2.079
s			
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	80
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	19
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	80.81%
s			
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.436	Shapiro Wilk Test Statistic	0.918
5% Shapiro Wilk Critical Value	0.947	5% Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
s			
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.165	Mean	-3.084
SD	4.632	SD	2.043
95% DL/2 (t) UCL	1.938	95% H-Stat (DL/2) UCL	0.359
s			
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-3.503
s		SD in Log Scale	2.255
s		Mean in Original Scale	1.158
s		SD in Original Scale	4.634
s		95% Percentile Bootstrap UCL	1.975
s		95% BCA Bootstrap UCL	2.342
s			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.228	Data do not follow a Discernable Distribution (0.05)	
Theta Star	10.42		
nu star	21.89		
s			
A-D Test Statistic	4.162	Nonparametric Statistics	
5% A-D Critical Value	0.894	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.894	Mean	1.159
5% K-S Critical Value	0.141	SD	4.61
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.468
s		95% KM (t) UCL	1.936
Assuming Gamma Distribution		95% KM (z) UCL	1.929
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.932
Minimum	0.002	95% KM (bootstrap t) UCL	2.773

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum	38.8	95% KM (BCA) UCL	2.159
Mean	2.439	95% KM (Percentile Bootstrap) UCL	2.034
Median	2.411	95% KM (Chebyshev) UCL	3.2
SD	4.48	97.5% KM (Chebyshev) UCL	4.083
k star	0.42	99% KM (Chebyshev) UCL	5.818
Theta star	5.814		
Nu star	83.06	Potential UCLs to Use	
AppChi2	63.06	97.5% KM (Chebyshev) UCL	4.083
95% Gamma Approximate UCL	3.213		
95% Adjusted Gamma UCL	3.226		
Note: DL/2 is not a recommended method.			

Vanadium

General Statistics			
Number of Valid Data	204	Number of Detected Data	191
Number of Distinct Detected Data	102	Number of Non-Detect Data	13
		Percent Non-Detects	6.37%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.5	Minimum Detected	0.405
Maximum Detected	830	Maximum Detected	6.721
Mean of Detected	22.63	Mean of Detected	2.583
SD of Detected	63.81	SD of Detected	0.87
Minimum Non-Detect	7.8	Minimum Non-Detect	2.054
Maximum Non-Detect	52.3	Maximum Non-Detect	3.957
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	199
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.55%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.37	Lilliefors Test Statistic	0.0919
5% Lilliefors Critical Value	0.0641	5% Lilliefors Critical Value	0.0641
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	21.63	Mean	2.532
SD	61.87	SD	0.873
95% DL/2 (t) UCL	28.79	95% H-Stat (DL/2) UCL	21.76
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.533
		SD in Log Scale	0.867
		Mean in Original Scale	21.6
		SD in Original Scale	61.86
		95% Percentile Bootstrap UCL	30.17
		95% BCA Bootstrap UCL	34.73
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.055	Data do not follow a Discernable Distribution (0.05)	
Theta Star	21.45		
nu star	403		
A-D Test Statistic	5.24E+28	Nonparametric Statistics	
5% A-D Critical Value	0.782	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.782	Mean	21.64
5% K-S Critical Value	0.0678	SD	61.71
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.333
		95% KM (t) UCL	28.8
Assuming Gamma Distribution		95% KM (z) UCL	28.77
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	28.8

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum	1.00E-09	95% KM (bootstrap t) UCL	50.11
Maximum	830	95% KM (BCA) UCL	30
Mean	21.52	95% KM (Percentile Bootstrap) UCL	29.63
Median	13	95% KM (Chebyshev) UCL	40.53
SD	61.91	97.5% KM (Chebyshev) UCL	48.7
k star	0.524	99% KM (Chebyshev) UCL	64.75
Theta star	41.06		
Nu star	213.8	Potential UCLs to Use	
AppChi2	181	95% KM (BCA) UCL	30
95% Gamma Approximate UCL	25.42		
95% Adjusted Gamma UCL	25.45		
Note: DL/2 is not a recommended method.			

Xylenes (total)

General Statistics			
Number of Valid Data	165	Number of Detected Data	49
Number of Distinct Detected Data	42	Number of Non-Detect Data	116
		Percent Non-Detects	70.30%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0021	Minimum Detected	-6.166
Maximum Detected	29	Maximum Detected	3.367
Mean of Detected	3.922	Mean of Detected	-0.0845
SD of Detected	6.48	SD of Detected	2.241
Minimum Non-Detect	0.0025	Minimum Non-Detect	-5.991
Maximum Non-Detect	2.8	Maximum Non-Detect	1.03
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	148
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	17
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	89.70%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.615	Shapiro Wilk Test Statistic	0.924
5% Shapiro Wilk Critical Value	0.947	5% Shapiro Wilk Critical Value	0.947
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.215	Mean	-3.918
SD	3.931	SD	3.126
95% DL/2 (t) UCL	1.721	95% H-Stat (DL/2) UCL	2.615
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-4.153
		SD in Log Scale	3.167
		Mean in Original Scale	1.169
		SD in Original Scale	3.939
		95% Percentile Bootstrap UCL	1.694
		95% BCA Bootstrap UCL	1.824
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.432	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	9.079		
nu star	42.34		
A-D Test Statistic	0.523	Nonparametric Statistics	
5% A-D Critical Value	0.827	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.827	Mean	1.171
5% K-S Critical Value	0.135	SD	3.927
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.309
		95% KM (t) UCL	1.682
Assuming Gamma Distribution		95% KM (z) UCL	1.68
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.677

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum	0.0021	95% KM (bootstrap t) UCL	1.933
Maximum	29	95% KM (BCA) UCL	1.759
Mean	3.905	95% KM (Percentile Bootstrap) UCL	1.718
Median	4.021	95% KM (Chebyshev) UCL	2.518
SD	3.556	97.5% KM (Chebyshev) UCL	3.101
k star	1.246	99% KM (Chebyshev) UCL	4.245
Theta star	3.134		
Nu star	411.2	Potential UCLs to Use	
AppChi2	365.2	95% KM (t) UCL	1.682
95% Gamma Approximate UCL	4.397		
95% Adjusted Gamma UCL	4.402		
Note: DL/2 is not a recommended method.			

Zinc

General Statistics			
Number of Valid Data	204	Number of Detected Data	195
Number of Distinct Detected Data	141	Number of Non-Detect Data	9
		Percent Non-Detects	4.41%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	5.7	Minimum Detected	1.74
Maximum Detected	8880	Maximum Detected	9.092
Mean of Detected	334.8	Mean of Detected	3.704
SD of Detected	1146	SD of Detected	1.489
Minimum Non-Detect	12.9	Minimum Non-Detect	2.557
Maximum Non-Detect	28.5	Maximum Non-Detect	3.35
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	117
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	87
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	57.35%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.472	Lilliefors Test Statistic	0.194
5% Lilliefors Critical Value	0.0634	5% Lilliefors Critical Value	0.0634
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	320.4	Mean	3.635
SD	1122	SD	1.491
95% DL/2 (t) UCL	450.2	95% H-Stat (DL/2) UCL	152.5
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	3.635
		SD in Log Scale	1.492
		Mean in Original Scale	320.4
		SD in Original Scale	1122
		95% Percentile Bootstrap UCL	458.4
		95% BCA Bootstrap UCL	488.2
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.321	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1042		
nu star	125.3		
A-D Test Statistic	39.71	Nonparametric Statistics	
5% A-D Critical Value	0.864	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.864	Mean	320.6
5% K-S Critical Value	0.0703	SD	1119
Data not Gamma Distributed at 5% Significance Level		SE of Mean	78.56
		95% KM (t) UCL	450.4
Assuming Gamma Distribution		95% KM (z) UCL	449.8
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	450.4

Electronic Appendix F6, Table 2
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Terrestrial Subsurface Soil

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Terrestrial SubSoil ProUCL Input.w
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Minimum	1.00E-09	95% KM (bootstrap t) UCL	498.3
Maximum	8880	95% KM (BCA) UCL	458.4
Mean	320	95% KM (Percentile Bootstrap) UCL	456.8
Median	25	95% KM (Chebyshev) UCL	663
SD	1122	97.5% KM (Chebyshev) UCL	811.2
k star	0.229	99% KM (Chebyshev) UCL	1102
Theta star	1397		
Nu star	93.47	Potential UCLs to Use	
AppChi2	72.17	95% KM (Chebyshev) UCL	663
95% Gamma Approximate UCL	414.5		
95% Adjusted Gamma UCL	415.2		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1-Phenyl-1-(2,4-Dimethylphenyl)ethane

General Statistics

Number of Valid Observations	2	Number of Distinct Observations	2

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable 1-Phenyl-1-(2,4-Dimethylphenyl)ethane was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

2-Hexanone

General Statistics

Number of Valid Data	8	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	7
		Percent Non-Detects	87.50%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 2-Hexanone was not processed!

4-Methylphenol

General Statistics

Number of Valid Data	8	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	7
		Percent Non-Detects	87.50%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 4-Methylphenol was not processed!

4,4'-DDT

General Statistics

Number of Valid Data	8	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	7
		Percent Non-Detects	87.50%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 4,4'-DDT was not processed!

Arsenic

General Statistics

Number of Valid Data	8	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	1
		Percent Non-Detects	12.50%

Raw Statistics | Log-transformed Statistics

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Minimum Detected	1.2	Minimum Detected	0.182
Maximum Detected	15	Maximum Detected	2.708
Mean of Detected	5.129	Mean of Detected	1.388
SD of Detected	4.49	SD of Detected	0.737
Minimum Non-Detect	1.8	Minimum Non-Detect	0.588
Maximum Non-Detect	1.8	Maximum Non-Detect	0.588

Warning: There are only 7 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.678	Shapiro Wilk Test Statistic	0.874
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.6	Mean	1.201
SD	4.417	SD	0.863
95% DL/2 (t) UCL	7.559	95% H-Stat (DL/2) UCL	9.73
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	3.977	Mean in Log Scale	1.246
SD	4.935	SD in Log Scale	0.791
95% MLE (t) UCL	7.282	Mean in Original Scale	4.649
95% MLE (Tiku) UCL	7.358	SD in Original Scale	4.372
		95% Percentile Bootstrap UCL	7.474
		95% BCA Bootstrap UCL	8.25
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.338	Data appear Lognormal at 5% Significance Level	
Theta Star	3.832		
nu star	18.74		
A-D Test Statistic	0.738	Nonparametric Statistics	
5% A-D Critical Value	0.714	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.714	Mean	4.638
5% K-S Critical Value	0.315	SD	4.1
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.566
		95% KM (t) UCL	7.604
Assuming Gamma Distribution		95% KM (z) UCL	7.213
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	7.504
Minimum	1.094	95% KM (bootstrap t) UCL	12.68
Maximum	15	95% KM (BCA) UCL	7.825
Mean	4.624	95% KM (Percentile Bootstrap) UCL	7.55
Median	3.85	95% KM (Chebyshev) UCL	11.46
SD	4.395	97.5% KM (Chebyshev) UCL	14.41
k star	1.198	99% KM (Chebyshev) UCL	20.21
Theta star	3.86		
Nu star	19.17	Potential UCLs to Use	
AppChi2	10.24	95% KM (Chebyshev) UCL	11.46
95% Gamma Approximate UCL	8.656		
95% Adjusted Gamma UCL	10.26		

Note: DL/2 is not a recommended method.

Barium

General Statistics

Number of Valid Observations	8	Number of Distinct Observations	7

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Raw Statistics		Log-transformed Statistics	
Minimum	57	Minimum of Log Data	4.043
Maximum	190	Maximum of Log Data	5.247
Mean	90.05	Mean of log Data	4.41
Median	70	SD of log Data	0.426
SD	46.65		
Coefficient of Variation	0.518		
Skewness	1.803		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.736	Shapiro Wilk Test Statistic	0.816
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	121.3	95% H-UCL	129.1
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	147.9
95% Adjusted-CLT UCL	128.4	97.5% Chebyshev (MVUE) UCL	173.4
95% Modified-t UCL	123	99% Chebyshev (MVUE) UCL	223.5
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	3.628	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	24.82		
MLE of Mean	90.05		
MLE of Standard Deviation	47.28		
nu star	58.04		
Approximate Chi Square Value (.05)	41.53	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	117.2
Adjusted Chi Square Value	38.02	95% Jackknife UCL	121.3
		95% Standard Bootstrap UCL	115.7
Anderson-Darling Test Statistic	0.841	95% Bootstrap-t UCL	228.9
Anderson-Darling 5% Critical Value	0.719	95% Hall's Bootstrap UCL	268.5
Kolmogorov-Smirnov Test Statistic	0.292	95% Percentile Bootstrap UCL	117.3
Kolmogorov-Smirnov 5% Critical Value	0.295	95% BCA Bootstrap UCL	129.1
Data follow Appr. Gamma Distribution at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	161.9
		97.5% Chebyshev(Mean, Sd) UCL	193
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	254.1
95% Approximate Gamma UCL	125.9		
95% Adjusted Gamma UCL	137.5		
Potential UCL to Use		Use 95% Approximate Gamma UCL	125.9

Benz(a)anthracene

General Statistics			
Number of Valid Data	8	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	5
		Percent Non-Detects	62.50%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.049	Minimum Detected	-3.016
Maximum Detected	0.33	Maximum Detected	-1.109
Mean of Detected	0.19	Mean of Detected	-1.928
SD of Detected	0.141	SD of Detected	0.981
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.62	Maximum Non-Detect	-0.478

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	1	Shapiro Wilk Test Statistic	0.944
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.225	Mean	-1.606
SD	0.086	SD	0.6
95% DL/2 (t) UCL	0.282	95% H-Stat (DL/2) UCL	1.054
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.928
		SD in Log Scale	0.525
		Mean in Original Scale	0.162
		SD in Original Scale	0.0785
		95% Percentile Bootstrap UCL	0.208
		95% BCA Bootstrap UCL	0.203
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.19
5% K-S Critical Value	N/A	SD	0.115
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0811
		95% KM (t) UCL	0.343
Assuming Gamma Distribution		95% KM (z) UCL	0.323
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.366
Minimum	N/A	95% KM (bootstrap t) UCL	0.388
Maximum	N/A	95% KM (BCA) UCL	0.33
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	0.543
SD	N/A	97.5% KM (Chebyshev) UCL	0.696
k star	N/A	99% KM (Chebyshev) UCL	0.997
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.343
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	N/A
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Benzo(a)pyrene

General Statistics

Number of Valid Data	8	Number of Detected Data	3

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Number of Distinct Detected Data	3	Number of Non-Detect Data	5
		Percent Non-Detects	62.50%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.05	Minimum Detected	-2.996
Maximum Detected	0.39	Maximum Detected	-0.942
Mean of Detected	0.22	Mean of Detected	-1.817
SD of Detected	0.17	SD of Detected	1.06
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.62	Maximum Non-Detect	-0.478

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	1	Shapiro Wilk Test Statistic	0.939
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.236	Mean	-1.564
SD	0.0967	SD	0.615
95% DL/2 (t) UCL	0.301	95% H-Stat (DL/2) UCL	1.066

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.817
		SD in Log Scale	0.567
		Mean in Original Scale	0.184
		SD in Original Scale	0.0956
		95% Percentile Bootstrap UCL	0.241
		95% BCA Bootstrap UCL	0.241

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level
Theta Star	N/A	
nu star	N/A	

		Nonparametric Statistics	
A-D Test Statistic	N/A		
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.22
5% K-S Critical Value	N/A	SD	0.139
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0981
		95% KM (t) UCL	0.406
Assuming Gamma Distribution		95% KM (z) UCL	0.381
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.433
Minimum	N/A	95% KM (bootstrap t) UCL	0.46
Maximum	N/A	95% KM (BCA) UCL	0.39
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.39
Median	N/A	95% KM (Chebyshev) UCL	0.648
SD	N/A	97.5% KM (Chebyshev) UCL	0.833
k star	N/A	99% KM (Chebyshev) UCL	1.197
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.406

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	0.39
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Benzo(b)fluoranthene

General Statistics			
Number of Valid Data	8	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	5
		Percent Non-Detects	62.50%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.052	Minimum Detected	-2.957
Maximum Detected	0.42	Maximum Detected	-0.868
Mean of Detected	0.234	Mean of Detected	-1.765
SD of Detected	0.184	SD of Detected	1.075
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.62	Maximum Non-Detect	-0.478
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	1	Shapiro Wilk Test Statistic	0.944
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.242	Mean	-1.544
SD	0.103	SD	0.614
95% DL/2 (t) UCL	0.311	95% H-Stat (DL/2) UCL	1.046
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.914
		SD in Log Scale	0.599
		Mean in Original Scale	0.173
		SD in Original Scale	0.112
		95% Percentile Bootstrap UCL	0.236
		95% BCA Bootstrap UCL	0.259
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.211
5% K-S Critical Value	N/A	SD	0.143
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0939
		95% KM (t) UCL	0.389
Assuming Gamma Distribution		95% KM (z) UCL	0.365

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.417
Minimum	N/A	95% KM (bootstrap t) UCL	0.452
Maximum	N/A	95% KM (BCA) UCL	0.42
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.42
Median	N/A	95% KM (Chebyshev) UCL	0.62
SD	N/A	97.5% KM (Chebyshev) UCL	0.797
k star	N/A	99% KM (Chebyshev) UCL	1.145
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.389
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	0.42
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Benzo(g,h,i)perylene

General Statistics			
Number of Valid Data	8	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	5
		Percent Non-Detects	62.50%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.043	Minimum Detected	-3.147
Maximum Detected	0.23	Maximum Detected	-1.47
Mean of Detected	0.144	Mean of Detected	-2.15
SD of Detected	0.0945	SD of Detected	0.882
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.62	Maximum Non-Detect	-0.478
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.979	Shapiro Wilk Test Statistic	0.903
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.208	Mean	-1.689
SD	0.0789	SD	0.618
95% DL/2 (t) UCL	0.261	95% H-Stat (DL/2) UCL	1.175
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.15
		SD in Log Scale	0.472
		Mean in Original Scale	0.127
		SD in Original Scale	0.0525
		95% Percentile Bootstrap UCL	0.156
		95% BCA Bootstrap UCL	0.155
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.144
5% K-S Critical Value	N/A	SD	0.0771
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0545
		95% KM (t) UCL	0.248
Assuming Gamma Distribution		95% KM (z) UCL	0.234
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.263
Minimum	N/A	95% KM (bootstrap t) UCL	0.248
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	0.382
SD	N/A	97.5% KM (Chebyshev) UCL	0.485
k star	N/A	99% KM (Chebyshev) UCL	0.687
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.248
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	N/A
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Benzo(k)fluoranthene

General Statistics

Number of Valid Data	8	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	5
		Percent Non-Detects	62.50%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.046	Minimum Detected	-3.079
Maximum Detected	0.38	Maximum Detected	-0.968
Mean of Detected	0.222	Mean of Detected	-1.825
SD of Detected	0.168	SD of Detected	1.11
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.62	Maximum Non-Detect	-0.478

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.991	Shapiro Wilk Test Statistic	0.904
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.237	Mean	-1.567
SD	0.0954	SD	0.642
95% DL/2 (t) UCL	0.301	95% H-Stat (DL/2) UCL	1.161
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MLE method failed to converge properly		Mean in Log Scale	-1.825
		SD in Log Scale	0.594
		Mean in Original Scale	0.184
		SD in Original Scale	0.095
		95% Percentile Bootstrap UCL	0.239
		95% BCA Bootstrap UCL	0.243
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.222
5% K-S Critical Value	N/A	SD	0.137
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0968
		95% KM (t) UCL	0.405
Assuming Gamma Distribution		95% KM (z) UCL	0.381
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.432
Minimum	N/A	95% KM (bootstrap t) UCL	0.477
Maximum	N/A	95% KM (BCA) UCL	0.38
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.38
Median	N/A	95% KM (Chebyshev) UCL	0.644
SD	N/A	97.5% KM (Chebyshev) UCL	0.827
k star	N/A	99% KM (Chebyshev) UCL	1.186
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.405
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	0.38
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Beryllium

General Statistics

Number of Valid Data	8	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	2
		Percent Non-Detects	25.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.036	Minimum Detected	-3.324
Maximum Detected	0.79	Maximum Detected	-0.236
Mean of Detected	0.433	Mean of Detected	-1.212
SD of Detected	0.283	SD of Detected	1.171
Minimum Non-Detect	0.75	Minimum Non-Detect	-0.288
Maximum Non-Detect	0.92	Maximum Non-Detect	-0.0834
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.941	Shapiro Wilk Test Statistic	0.817
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.429	Mean	-1.129
SD	0.24	SD	1.003
95% DL/2 (t) UCL	0.59	95% H-Stat (DL/2) UCL	1.933
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.256
		SD in Log Scale	0.994
		Mean in Original Scale	0.387
		SD in Original Scale	0.254
		95% Percentile Bootstrap UCL	0.521
		95% BCA Bootstrap UCL	0.537
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.851	Data appear Normal at 5% Significance Level	
Theta Star	0.508		
nu star	10.22		
A-D Test Statistic	0.509	Nonparametric Statistics	
5% A-D Critical Value	0.708	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.708	Mean	0.422
5% K-S Critical Value	0.338	SD	0.254
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.112
		95% KM (t) UCL	0.635
Assuming Gamma Distribution		95% KM (z) UCL	0.607
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.64
Minimum	0.036	95% KM (bootstrap t) UCL	0.614
Maximum	0.79	95% KM (BCA) UCL	0.575
Mean	0.44	95% KM (Percentile Bootstrap) UCL	0.591
Median	0.489	95% KM (Chebyshev) UCL	0.91
SD	0.24	97.5% KM (Chebyshev) UCL	1.122
k star	1.286	99% KM (Chebyshev) UCL	1.536
Theta star	0.342		
Nu star	20.57	Potential UCLs to Use	
AppChi2	11.27	95% KM (t) UCL	0.635
95% Gamma Approximate UCL	0.802	95% KM (Percentile Bootstrap) UCL	0.591
95% Adjusted Gamma UCL	0.944		

Note: DL/2 is not a recommended method.

bis(2-Ethylhexyl)phthalate

General Statistics			
Number of Valid Data	8	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	5
		Percent Non-Detects	62.50%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.05	Minimum Detected	-2.996
Maximum Detected	0.36	Maximum Detected	-1.022
Mean of Detected	0.169	Mean of Detected	-2.117
SD of Detected	0.167	SD of Detected	1.005
Minimum Non-Detect	0.43	Minimum Non-Detect	-0.844
Maximum Non-Detect	0.62	Maximum Non-Detect	-0.478
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.861	Shapiro Wilk Test Statistic	0.965
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.223	Mean	-1.65
SD	0.103	SD	0.669
95% DL/2 (t) UCL	0.293	95% H-Stat (DL/2) UCL	1.041
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.117
		SD in Log Scale	0.537
		Mean in Original Scale	0.139
		SD in Original Scale	0.0928
		95% Percentile Bootstrap UCL	0.201
		95% BCA Bootstrap UCL	0.21
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.169
5% K-S Critical Value	N/A	SD	0.136
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0965
		95% KM (t) UCL	0.352
Assuming Gamma Distribution		95% KM (z) UCL	0.328
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.378
Minimum	N/A	95% KM (bootstrap t) UCL	1.049
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.36
Median	N/A	95% KM (Chebyshev) UCL	0.589
SD	N/A	97.5% KM (Chebyshev) UCL	0.771
k star	N/A	99% KM (Chebyshev) UCL	1.129
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.352
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	0.36
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Cadmium

General Statistics			
Number of Valid Data	8	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	3
		Percent Non-Detects	37.50%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.022	Minimum Detected	-3.817
Maximum Detected	0.26	Maximum Detected	-1.347
Mean of Detected	0.154	Mean of Detected	-2.144
SD of Detected	0.0946	SD of Detected	0.99
Minimum Non-Detect	0.75	Minimum Non-Detect	-0.288
Maximum Non-Detect	1.5	Maximum Non-Detect	0.405

Electronic Appendix F6, Table 3
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.953	Shapiro Wilk Test Statistic	0.825
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.295	Mean	-1.596
SD	0.232	SD	1.081
95% DL/2 (t) UCL	0.45	95% H-Stat (DL/2) UCL	2.742
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.144
		SD in Log Scale	0.748
		Mean in Original Scale	0.14
		SD in Original Scale	0.074
		95% Percentile Bootstrap UCL	0.184
		95% BCA Bootstrap UCL	0.184
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.919	Data appear Normal at 5% Significance Level	
Theta Star	0.168		
nu star	9.187		
A-D Test Statistic	0.406	Nonparametric Statistics	
5% A-D Critical Value	0.685	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.685	Mean	0.154
5% K-S Critical Value	0.361	SD	0.0846
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0423
		95% KM (t) UCL	0.235
Assuming Gamma Distribution		95% KM (z) UCL	0.224
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.238
Minimum	0.022	95% KM (bootstrap t) UCL	0.247
Maximum	0.26	95% KM (BCA) UCL	0.22
Mean	0.153	95% KM (Percentile Bootstrap) UCL	0.223
Median	0.151	95% KM (Chebyshev) UCL	0.339
SD	0.0715	97.5% KM (Chebyshev) UCL	0.419
k star	1.994	99% KM (Chebyshev) UCL	0.575
Theta star	0.0769		
Nu star	31.9	Potential UCLs to Use	
AppChi2	19.99	95% KM (t) UCL	0.235
95% Gamma Approximate UCL	0.245	95% KM (Percentile Bootstrap) UCL	0.223
95% Adjusted Gamma UCL	0.277		

Note: DL/2 is not a recommended method.

Calcium

General Statistics

Number of Valid Observations	8	Number of Distinct Observations	8
Raw Statistics		Log-transformed Statistics	
Minimum	4000	Minimum of Log Data	8.294
Maximum	400000	Maximum of Log Data	12.9

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
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Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mean	198625	Mean of log Data	11.69
Median	172500	SD of log Data	1.493
SD	138573		
Coefficient of Variation	0.698		
Skewness	0.173		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.962	Shapiro Wilk Test Statistic	0.77
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	291446	95% H-UCL	5230771
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	964556
95% Adjusted-CLT UCL	282410	97.5% Chebyshev (MVUE) UCL	1256071
95% Modified-t UCL	291945	99% Chebyshev (MVUE) UCL	1828694
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.785	Data appear Normal at 5% Significance Level	
Theta Star	253016		
MLE of Mean	198625		
MLE of Standard Deviation	224177		
nu star	12.56		
Approximate Chi Square Value (.05)	5.598	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	279211
Adjusted Chi Square Value	4.479	95% Jackknife UCL	291446
		95% Standard Bootstrap UCL	273431
Anderson-Darling Test Statistic	0.447	95% Bootstrap-t UCL	300367
Anderson-Darling 5% Critical Value	0.734	95% Hall's Bootstrap UCL	289756
Kolmogorov-Smirnov Test Statistic	0.213	95% Percentile Bootstrap UCL	276750
Kolmogorov-Smirnov 5% Critical Value	0.301	95% BCA Bootstrap UCL	274125
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	412181
		97.5% Chebyshev(Mean, Sd) UCL	504587
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	686100
95% Approximate Gamma UCL	445630		
95% Adjusted Gamma UCL	556955		
Potential UCL to Use		Use 95% Student's-t UCL	291446

Carbon disulfide

General Statistics			
Number of Valid Data	8	Number of Detected Data	4
Number of Distinct Detected Data	3	Number of Non-Detect Data	4
		Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0012	Minimum Detected	-6.725
Maximum Detected	0.0028	Maximum Detected	-5.878
Mean of Detected	0.00163	Mean of Detected	-6.494
SD of Detected	7.85E-04	SD of Detected	0.412
Minimum Non-Detect	0.0031	Minimum Non-Detect	-5.776
Maximum Non-Detect	0.0037	Maximum Non-Detect	-5.599
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.674	Shapiro Wilk Test Statistic	0.697
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00164	Mean	-6.448
SD	5.21E-04	SD	0.279
95% DL/2 (t) UCL	0.00199	95% H-Stat (DL/2) UCL	0.00428
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-6.494
		SD in Log Scale	0.27
		Mean in Original Scale	0.00157
		SD in Original Scale	5.17E-04
		95% Percentile Bootstrap UCL	0.00189
		95% BCA Bootstrap UCL	0.00197
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.959	Data do not follow a Discernable Distribution (0.05)	
Theta Star	8.29E-04		
nu star	15.67		
A-D Test Statistic	0.81	Nonparametric Statistics	
5% A-D Critical Value	0.658	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.658	Mean	0.00163
5% K-S Critical Value	0.395	SD	6.80E-04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	3.92E-04
		95% KM (t) UCL	0.00237
Assuming Gamma Distribution		95% KM (z) UCL	0.00227
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00243
Minimum	0.0012	95% KM (bootstrap t) UCL	0.0112
Maximum	0.0028	95% KM (BCA) UCL	0.00227
Mean	0.00165	95% KM (Percentile Bootstrap) UCL	0.00227
Median	0.00167	95% KM (Chebyshev) UCL	0.00334
SD	5.14E-04	97.5% KM (Chebyshev) UCL	0.00408
k star	8.925	99% KM (Chebyshev) UCL	0.00553
Theta star	1.84E-04		
Nu star	142.8	Potential UCLs to Use	
AppChi2	116.2	95% KM (t) UCL	0.00237
95% Gamma Approximate UCL	0.00202	95% KM (% Bootstrap) UCL	0.00227
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Chromium

General Statistics			
Number of Valid Observations	8	Number of Distinct Observations	7
Raw Statistics		Log-transformed Statistics	
Minimum	1.7	Minimum of Log Data	0.531
Maximum	65	Maximum of Log Data	4.174
Mean	21.26	Mean of log Data	2.7

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Median	17.5	SD of log Data	1.025
SD	18.87		
Coefficient of Variation	0.888		
Skewness	2.11		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.754	Shapiro Wilk Test Statistic	0.862
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	33.91	95% H-UCL	97.1
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	60.26
95% Adjusted-CLT UCL	37.56	97.5% Chebyshev (MVUE) UCL	76.35
95% Modified-t UCL	34.73	99% Chebyshev (MVUE) UCL	108
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.05	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	20.25		
MLE of Mean	21.26		
MLE of Standard Deviation	20.75		
nu star	16.8		
Approximate Chi Square Value (.05)	8.528	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	32.24
Adjusted Chi Square Value	7.09	95% Jackknife UCL	33.91
		95% Standard Bootstrap UCL	31.47
Anderson-Darling Test Statistic	0.499	95% Bootstrap-t UCL	46.07
Anderson-Darling 5% Critical Value	0.728	95% Hall's Bootstrap UCL	84.12
Kolmogorov-Smirnov Test Statistic	0.252	95% Percentile Bootstrap UCL	32.64
Kolmogorov-Smirnov 5% Critical Value	0.299	95% BCA Bootstrap UCL	35.95
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	50.35
		97.5% Chebyshev(Mean, Sd) UCL	62.94
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	87.66
95% Approximate Gamma UCL	41.88		
95% Adjusted Gamma UCL	50.38		
Potential UCL to Use		Use 95% Approximate Gamma UCL	41.88

Chrysene

General Statistics			
Number of Valid Data	8	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	5
		Percent Non-Detects	62.50%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.062	Minimum Detected	-2.781
Maximum Detected	0.42	Maximum Detected	-0.868
Mean of Detected	0.244	Mean of Detected	-1.678
SD of Detected	0.179	SD of Detected	0.989
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.62	Maximum Non-Detect	-0.478
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.999	Shapiro Wilk Test Statistic	0.935
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.245	Mean	-1.512
SD	0.1	SD	0.559
95% DL/2 (t) UCL	0.312	95% H-Stat (DL/2) UCL	0.92
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.815
		SD in Log Scale	0.551
		Mean in Original Scale	0.186
		SD in Original Scale	0.108
		95% Percentile Bootstrap UCL	0.247
		95% BCA Bootstrap UCL	0.259
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.222
5% K-S Critical Value	N/A	SD	0.14
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0929
		95% KM (t) UCL	0.398
Assuming Gamma Distribution		95% KM (z) UCL	0.375
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.429
Minimum	N/A	95% KM (bootstrap t) UCL	0.445
Maximum	N/A	95% KM (BCA) UCL	0.42
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.42
Median	N/A	95% KM (Chebyshev) UCL	0.627
SD	N/A	97.5% KM (Chebyshev) UCL	0.802
k star	N/A	99% KM (Chebyshev) UCL	1.146
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.398
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	0.42
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Copper

General Statistics			
Number of Valid Observations	8	Number of Distinct Observations	7
Raw Statistics		Log-transformed Statistics	
Minimum	1.8	Minimum of Log Data	0.588
Maximum	29	Maximum of Log Data	3.367
Mean	12.94	Mean of log Data	2.274
Median	11.45	SD of log Data	0.894

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

SD	9.181
Coefficient of Variation	0.71
Skewness	0.683

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.944	Shapiro Wilk Test Statistic	0.944
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	19.09	95% H-UCL	42.3
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	32.76
95% Adjusted-CLT UCL	19.11	97.5% Chebyshev (MVUE) UCL	41.04
95% Modified-t UCL	19.22	99% Chebyshev (MVUE) UCL	57.31
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.27	Data appear Normal at 5% Significance Level	
Theta Star	10.19		
MLE of Mean	12.94		
MLE of Standard Deviation	11.48		
nu star	20.32		
Approximate Chi Square Value (.05)	11.09	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	18.28
Adjusted Chi Square Value	9.41	95% Jackknife UCL	19.09
		95% Standard Bootstrap UCL	17.91
Anderson-Darling Test Statistic	0.189	95% Bootstrap-t UCL	20.31
Anderson-Darling 5% Critical Value	0.725	95% Hall's Bootstrap UCL	20.26
Kolmogorov-Smirnov Test Statistic	0.138	95% Percentile Bootstrap UCL	18.06
Kolmogorov-Smirnov 5% Critical Value	0.298	95% BCA Bootstrap UCL	18.48
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	27.09
		97.5% Chebyshev(Mean, Sd) UCL	33.21
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	45.23
95% Approximate Gamma UCL	23.71		
95% Adjusted Gamma UCL	27.94		
Potential UCL to Use		Use 95% Student's-t UCL	19.09

Cyanide, Total

General Statistics			
Number of Valid Data	8	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	6
		Percent Non-Detects	75.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.5	Minimum Detected	-0.693
Maximum Detected	1.1	Maximum Detected	0.0953
Mean of Detected	0.8	Mean of Detected	-0.299
SD of Detected	0.424	SD of Detected	0.558
Minimum Non-Detect	0.63	Minimum Non-Detect	-0.462
Maximum Non-Detect	1.87	Maximum Non-Detect	0.626
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.61	Mean	-0.598
SD	0.298	SD	0.487
95% DL/2 (t) UCL	0.81	95% H-Stat (DL/2) UCL	0.95
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.6
5% K-S Critical Value	N/A	SD	0.224
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.129
		95% KM (t) UCL	0.845
Assuming Gamma Distribution		95% KM (z) UCL	0.812
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.035
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	1.1
Mean	N/A	95% KM (Percentile Bootstrap) UCL	1.1
Median	N/A	95% KM (Chebyshev) UCL	1.163
SD	N/A	97.5% KM (Chebyshev) UCL	1.406
k star	N/A	99% KM (Chebyshev) UCL	1.885
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.845
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	1.1
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Dibenz(a,h)anthracene

General Statistics			
Number of Valid Data	8	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	7
		Percent Non-Detects	87.50%

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Dibenz(a,h)anthracene was not processed!

Fluoranthene

General Statistics			
Number of Valid Data	8	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	3
		Percent Non-Detects	37.50%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.059	Minimum Detected	-2.83
Maximum Detected	0.7	Maximum Detected	-0.357
Mean of Detected	0.292	Mean of Detected	-1.728
SD of Detected	0.297	SD of Detected	1.136
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.5	Maximum Non-Detect	-0.693
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	6
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	75.00%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.798	Shapiro Wilk Test Statistic	0.841
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.267	Mean	-1.641
SD	0.228	SD	0.869
95% DL/2 (t) UCL	0.42	95% H-Stat (DL/2) UCL	1.482
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.986
		SD in Log Scale	0.929
		Mean in Original Scale	0.216
		SD in Original Scale	0.248
		95% Percentile Bootstrap UCL	0.368
		95% BCA Bootstrap UCL	0.391
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.59	Data appear Normal at 5% Significance Level	
Theta Star	0.495		
nu star	5.902		
A-D Test Statistic	0.58	Nonparametric Statistics	
5% A-D Critical Value	0.69	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.69	Mean	0.213
5% K-S Critical Value	0.364	SD	0.234
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0927
		95% KM (t) UCL	0.388
Assuming Gamma Distribution		95% KM (z) UCL	0.365

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.381
Minimum	0.059	95% KM (bootstrap t) UCL	1.715
Maximum	0.7	95% KM (BCA) UCL	0.415
Mean	0.293	95% KM (Percentile Bootstrap) UCL	0.379
Median	0.294	95% KM (Chebyshev) UCL	0.617
SD	0.225	97.5% KM (Chebyshev) UCL	0.792
k star	1.18	99% KM (Chebyshev) UCL	1.135
Theta star	0.248		
Nu star	18.89	Potential UCLs to Use	
AppChi2	10.03	95% KM (t) UCL	0.388
95% Gamma Approximate UCL	0.551	95% KM (Percentile Bootstrap) UCL	0.379
95% Adjusted Gamma UCL	0.654		

Note: DL/2 is not a recommended method.

Indeno(1,2,3-cd)pyrene
,3-cd)pyrene

General Statistics			
Number of Valid Data	8	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	5
,3-cd)pyrene		Percent Non-Detects	62.50%
,3-cd)pyrene			
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.041	Minimum Detected	-3.194
Maximum Detected	0.21	Maximum Detected	-1.561
Mean of Detected	0.134	Mean of Detected	-2.217
SD of Detected	0.0857	SD of Detected	0.863
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.62	Maximum Non-Detect	-0.478
,3-cd)pyrene			
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
,3-cd)pyrene			

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!
,3-cd)pyrene
It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.
,3-cd)pyrene
,3-cd)pyrene

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.973	Shapiro Wilk Test Statistic	0.897
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
,3-cd)pyrene			
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.204	Mean	-1.714
SD	0.0799	SD	0.632
95% DL/2 (t) UCL	0.257	95% H-Stat (DL/2) UCL	1.233
,3-cd)pyrene			
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.217
,3-cd)pyrene		SD in Log Scale	0.461
,3-cd)pyrene		Mean in Original Scale	0.118
,3-cd)pyrene		SD in Original Scale	0.0476
,3-cd)pyrene		95% Percentile Bootstrap UCL	0.144
,3-cd)pyrene		95% BCA Bootstrap UCL	0.15
,3-cd)pyrene			
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

nu star	N/A		
',3-cd)pyrene			
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.134
5% K-S Critical Value	N/A	SD	0.07
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0495
',3-cd)pyrene		95% KM (t) UCL	0.227
Assuming Gamma Distribution		95% KM (z) UCL	0.215
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.241
Minimum	N/A	95% KM (bootstrap t) UCL	0.225
Maximum	N/A	95% KM (BCA) UCL	0.21
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.21
Median	N/A	95% KM (Chebyshev) UCL	0.349
SD	N/A	97.5% KM (Chebyshev) UCL	0.443
k star	N/A	99% KM (Chebyshev) UCL	0.626
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.227
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	0.21
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Iron

General Statistics			
Number of Valid Observations	8	Number of Distinct Observations	8
Raw Statistics		Log-transformed Statistics	
Minimum	770	Minimum of Log Data	6.646
Maximum	48000	Maximum of Log Data	10.78
Mean	16650	Mean of log Data	9.298
Median	15500	SD of log Data	1.208
SD	14104		
Coefficient of Variation	0.847		
Skewness	1.737		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.828	Shapiro Wilk Test Statistic	0.838
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	26097	95% H-UCL	137864
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	57576
95% Adjusted-CLT UCL	28125	97.5% Chebyshev (MVUE) UCL	73889
95% Modified-t UCL	26608	99% Chebyshev (MVUE) UCL	105933
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.913	Data appear Normal at 5% Significance Level	
Theta Star	18242		
MLE of Mean	16650		
MLE of Standard Deviation	17428		
nu star	14.6		
Approximate Chi Square Value (.05)	6.987	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	24852

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst		
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Adjusted Chi Square Value	5.708	95% Jackknife UCL	26097
		95% Standard Bootstrap UCL	24481
Anderson-Darling Test Statistic	0.415	95% Bootstrap-t UCL	30811
Anderson-Darling 5% Critical Value	0.731	95% Hall's Bootstrap UCL	63765
Kolmogorov-Smirnov Test Statistic	0.203	95% Percentile Bootstrap UCL	24994
Kolmogorov-Smirnov 5% Critical Value	0.3	95% BCA Bootstrap UCL	27206
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	38385
		97.5% Chebyshev(Mean, Sd) UCL	47790
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	66265
95% Approximate Gamma UCL	34802		
95% Adjusted Gamma UCL	42596		
Potential UCL to Use		Use 95% Student's-t UCL	26097

Lead

General Statistics			
Number of Valid Observations	8	Number of Distinct Observations	8
Raw Statistics		Log-transformed Statistics	
Minimum	5.9	Minimum of Log Data	1.775
Maximum	74	Maximum of Log Data	4.304
Mean	21.85	Mean of log Data	2.737
Median	13.95	SD of log Data	0.841
SD	22.61		
Coefficient of Variation	1.035		
Skewness	2.175		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.726	Shapiro Wilk Test Statistic	0.946
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	36.99	95% H-UCL	57.89
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	48.35
95% Adjusted-CLT UCL	41.57	97.5% Chebyshev (MVUE) UCL	60.26
95% Modified-t UCL	38.02	99% Chebyshev (MVUE) UCL	83.65
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.074	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	20.34		
MLE of Mean	21.85		
MLE of Standard Deviation	21.08		
nu star	17.19		
Approximate Chi Square Value (.05)	8.809	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	35
Adjusted Chi Square Value	7.342	95% Jackknife UCL	36.99
		95% Standard Bootstrap UCL	33.77
Anderson-Darling Test Statistic	0.418	95% Bootstrap-t UCL	68.3
Anderson-Darling 5% Critical Value	0.728	95% Hall's Bootstrap UCL	92.42
Kolmogorov-Smirnov Test Statistic	0.187	95% Percentile Bootstrap UCL	35.63
Kolmogorov-Smirnov 5% Critical Value	0.299	95% BCA Bootstrap UCL	40.55
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	56.69
		97.5% Chebyshev(Mean, Sd) UCL	71.77
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	101.4
95% Approximate Gamma UCL	42.64		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

95% Adjusted Gamma UCL	51.16		
Potential UCL to Use		Use 95% Approximate Gamma UCL	42.64

Manganese

General Statistics			
Number of Valid Observations	8	Number of Distinct Observations	8
Raw Statistics		Log-transformed Statistics	
Minimum	120	Minimum of Log Data	4.787
Maximum	920	Maximum of Log Data	6.824
Mean	462.1	Mean of log Data	5.971
Median	455	SD of log Data	0.662
SD	254.7		
Coefficient of Variation	0.551		
Skewness	0.521		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.944	Shapiro Wilk Test Statistic	0.914
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	632.7	95% H-UCL	948.4
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	962.7
95% Adjusted-CLT UCL	628	97.5% Chebyshev (MVUE) UCL	1175
95% Modified-t UCL	635.5	99% Chebyshev (MVUE) UCL	1591
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.081	Data appear Normal at 5% Significance Level	
Theta Star	222		
MLE of Mean	462.1		
MLE of Standard Deviation	320.3		
nu star	33.3		
Approximate Chi Square Value (.05)	21.11	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	610.3
Adjusted Chi Square Value	18.69	95% Jackknife UCL	632.7
		95% Standard Bootstrap UCL	601.8
Anderson-Darling Test Statistic	0.35	95% Bootstrap-t UCL	674
Anderson-Darling 5% Critical Value	0.721	95% Hall's Bootstrap UCL	754.1
Kolmogorov-Smirnov Test Statistic	0.225	95% Percentile Bootstrap UCL	604.6
Kolmogorov-Smirnov 5% Critical Value	0.296	95% BCA Bootstrap UCL	605
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	854.7
		97.5% Chebyshev(Mean, Sd) UCL	1025
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1358
95% Approximate Gamma UCL	729.1		
95% Adjusted Gamma UCL	823.4		
Potential UCL to Use		Use 95% Student's-t UCL	632.7

Mercury

General Statistics			
Number of Valid Data	8	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	1

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

		Percent Non-Detects	12.50%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.013	Minimum Detected	-4.343
Maximum Detected	3.2	Maximum Detected	1.163
Mean of Detected	0.807	Mean of Detected	-1.585
SD of Detected	1.211	SD of Detected	2.023
Minimum Non-Detect	0.15	Minimum Non-Detect	-1.897
Maximum Non-Detect	0.15	Maximum Non-Detect	-1.897

Warning: There are only 7 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.733	Shapiro Wilk Test Statistic	0.963
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.716	Mean	-1.71
SD	1.151	SD	1.907
95% DL/2 (t) UCL	1.487	95% H-Stat (DL/2) UCL	84.53
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	0.0424	Mean in Log Scale	-1.81
SD	1.755	SD in Log Scale	1.978
95% MLE (t) UCL	1.218	Mean in Original Scale	0.711
95% MLE (Tiku) UCL	1.495	SD in Original Scale	1.154
		95% Percentile Bootstrap UCL	1.347
		95% BCA Bootstrap UCL	1.558
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.363	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	2.226		
nu star	5.079		
A-D Test Statistic	0.316	Nonparametric Statistics	
5% A-D Critical Value	0.757	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.757	Mean	0.713
5% K-S Critical Value	0.328	SD	1.079
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.412
		95% KM (t) UCL	1.493
Assuming Gamma Distribution		95% KM (z) UCL	1.39
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.485
Minimum	1.00E-09	95% KM (bootstrap t) UCL	5.384
Maximum	3.2	95% KM (BCA) UCL	1.474
Mean	0.707	95% KM (Percentile Bootstrap) UCL	1.436
Median	0.13	95% KM (Chebyshev) UCL	2.509
SD	1.157	97.5% KM (Chebyshev) UCL	3.286
k star	0.21	99% KM (Chebyshev) UCL	4.812
Theta star	3.367		
Nu star	3.357	Potential UCLs to Use	
AppChi2	0.486	95% KM (Chebyshev) UCL	2.509
95% Gamma Approximate UCL	4.884		
95% Adjusted Gamma UCL	8.353		

Note: DL/2 is not a recommended method.

Methyl Mercury (Derived)

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

General Statistics			
Number of Valid Data	8	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	1
		Percent Non-Detects	12.50%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.30E-04	Minimum Detected	-8.948
Maximum Detected	0.032	Maximum Detected	-3.442
Mean of Detected	0.00807	Mean of Detected	-6.19
SD of Detected	0.0121	SD of Detected	2.023
Minimum Non-Detect	0.0015	Minimum Non-Detect	-6.502
Maximum Non-Detect	0.0015	Maximum Non-Detect	-6.502

Warning: There are only 7 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.733	Shapiro Wilk Test Statistic	0.963
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00716	Mean	-6.316
SD	0.0115	SD	1.907
95% DL/2 (t) UCL	0.0149	95% H-Stat (DL/2) UCL	0.845
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	4.24E-04	Mean in Log Scale	-6.415
SD	0.0176	SD in Log Scale	1.978
95% MLE (t) UCL	0.0122	Mean in Original Scale	0.00711
95% MLE (Tiku) UCL	0.0149	SD in Original Scale	0.0115
		95% Percentile Bootstrap UCL	0.0145
		95% BCA Bootstrap UCL	0.0153
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.363	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.0223		
nu star	5.079		
A-D Test Statistic	0.316	Nonparametric Statistics	
5% A-D Critical Value	0.757	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.757	Mean	0.00713
5% K-S Critical Value	0.328	SD	0.0108
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00412
		95% KM (t) UCL	0.0149
Assuming Gamma Distribution		95% KM (z) UCL	0.0139
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0149
Minimum	1.00E-09	95% KM (bootstrap t) UCL	0.0528
Maximum	0.032	95% KM (BCA) UCL	0.0133
Mean	0.00707	95% KM (Percentile Bootstrap) UCL	0.0144
Median	0.0013	95% KM (Chebyshev) UCL	0.0251
SD	0.0116	97.5% KM (Chebyshev) UCL	0.0329
k star	0.23	99% KM (Chebyshev) UCL	4.81%
Theta star	0.0307		
Nu star	3.683	Potential UCLs to Use	
AppChi2	0.6	95% KM (Chebyshev) UCL	0.0251
95% Gamma Approximate UCL	0.0433		
95% Adjusted Gamma UCL	0.0724		

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Note: DL/2 is not a recommended method.

Methylcyclohexane

General Statistics

Number of Valid Observations	2	Number of Distinct Observations	2

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable a was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Methylene chloride

General Statistics

Number of Valid Data	8	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	6
		Percent Non-Detects	75.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	6.60E-04	Minimum Detected	-7.323
Maximum Detected	6.90E-04	Maximum Detected	-7.279
Mean of Detected	6.75E-04	Mean of Detected	-7.301
SD of Detected	2.12E-05	SD of Detected	0.0314
Minimum Non-Detect	0.0063	Minimum Non-Detect	-5.067
Maximum Non-Detect	0.011	Maximum Non-Detect	-4.51

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00306	Mean	-6.01
SD	0.00166	SD	0.817
95% DL/2 (t) UCL	0.00417	95% H-Stat (DL/2) UCL	0.0472

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

SD in Log Scale	N/A
Mean in Original Scale	N/A
SD in Original Scale	N/A
95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	6.75E-04
5% K-S Critical Value	N/A	SD	1.50E-05
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.50E-05
		95% KM (t) UCL	7.03E-04
Assuming Gamma Distribution		95% KM (z) UCL	7.00E-04
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	7.13E-04
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	6.90E-04
Mean	N/A	95% KM (Percentile Bootstrap) UCL	6.90E-04
Median	N/A	95% KM (Chebyshev) UCL	7.40E-04
SD	N/A	97.5% KM (Chebyshev) UCL	7.69E-04
k star	N/A	99% KM (Chebyshev) UCL	8.24E-04
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	7.03E-04
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	6.90E-04
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Nickel

General Statistics			
Number of Valid Observations	8	Number of Distinct Observations	8
Raw Statistics		Log-transformed Statistics	
Minimum	1.6	Minimum of Log Data	0.47
Maximum	40	Maximum of Log Data	3.689
Mean	20.01	Mean of log Data	2.736
Median	18.35	SD of log Data	0.976
SD	11.17		
Coefficient of Variation	0.558		
Skewness	0.258		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.967	Shapiro Wilk Test Statistic	0.754
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	27.49	95% H-UCL	85.96
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	58.3
95% Adjusted-CLT UCL	26.89	97.5% Chebyshev (MVUE) UCL	73.57
95% Modified-t UCL	27.55	99% Chebyshev (MVUE) UCL	103.6

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.379	Data appear Normal at 5% Significance Level	
Theta Star	14.52		
MLE of Mean	20.01		
MLE of Standard Deviation	17.04		
nu star	22.06		
Approximate Chi Square Value (.05)	12.38	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	26.51
Adjusted Chi Square Value	10.6	95% Jackknife UCL	27.49
		95% Standard Bootstrap UCL	26.29
Anderson-Darling Test Statistic	0.586	95% Bootstrap-t UCL	27.81
Anderson-Darling 5% Critical Value	0.724	95% Hall's Bootstrap UCL	29.84
Kolmogorov-Smirnov Test Statistic	0.271	95% Percentile Bootstrap UCL	25.9
Kolmogorov-Smirnov 5% Critical Value	0.297	95% BCA Bootstrap UCL	26.79
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	37.23
		97.5% Chebyshev(Mean, Sd) UCL	44.67
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	59.3
95% Approximate Gamma UCL	35.65		
95% Adjusted Gamma UCL	41.66		
Potential UCL to Use		Use 95% Student's-t UCL	27.49

Phenanthrene

General Statistics			
Number of Valid Data	8	Number of Detected Data	6
Number of Distinct Detected Data	5	Number of Non-Detect Data	2
		Percent Non-Detects	25.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.09	Minimum Detected	-2.408
Maximum Detected	0.35	Maximum Detected	-1.05
Mean of Detected	0.175	Mean of Detected	-1.848
SD of Detected	0.094	SD of Detected	0.488
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.43	Maximum Non-Detect	-0.844
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.839	Shapiro Wilk Test Statistic	0.93
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.184	Mean	-1.773
SD	0.0813	SD	0.435
95% DL/2 (t) UCL	0.239	95% H-Stat (DL/2) UCL	0.4
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.848
		SD in Log Scale	0.413
		Mean in Original Scale	0.171

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

		SD in Original Scale	0.0798
		95% Percentile Bootstrap UCL	0.218
		95% BCA Bootstrap UCL	0.231
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	2.578	Data appear Normal at 5% Significance Level	
Theta Star	0.0679		
nu star	30.94		
A-D Test Statistic	0.366	Nonparametric Statistics	
5% A-D Critical Value	0.698	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.698	Mean	0.175
5% K-S Critical Value	0.333	SD	0.0858
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0384
		95% KM (t) UCL	0.248
Assuming Gamma Distribution		95% KM (z) UCL	0.238
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.249
Minimum	0.09	95% KM (bootstrap t) UCL	0.304
Maximum	0.35	95% KM (BCA) UCL	0.236
Mean	0.177	95% KM (Percentile Bootstrap) UCL	0.238
Median	0.172	95% KM (Chebyshev) UCL	0.342
SD	0.0795	97.5% KM (Chebyshev) UCL	0.415
k star	4.152	99% KM (Chebyshev) UCL	0.557
Theta star	0.0427		
Nu star	66.43	Potential UCLs to Use	
AppChi2	48.67	95% KM (t) UCL	0.248
95% Gamma Approximate UCL	0.242	95% KM (Percentile Bootstrap) UCL	0.238
95% Adjusted Gamma UCL	0.262		

Note: DL/2 is not a recommended method.

Phenol

General Statistics			
Number of Valid Data	8	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	7
		Percent Non-Detects	87.50%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Phenol was not processed!

Pyrene

General Statistics			
Number of Valid Data	8	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	4
		Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.06	Minimum Detected	-2.813
Maximum Detected	0.73	Maximum Detected	-0.315
Mean of Detected	0.35	Mean of Detected	-1.604
SD of Detected	0.338	SD of Detected	1.322
Minimum Non-Detect	0.42	Minimum Non-Detect	-0.868
Maximum Non-Detect	0.5	Maximum Non-Detect	-0.693
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	6
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	75.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.847	Shapiro Wilk Test Statistic	0.811
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.29	Mean	-1.539
SD	0.231	SD	0.87
95% DL/2 (t) UCL	0.445	95% H-Stat (DL/2) UCL	1.709
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.109
		SD in Log Scale	1.02
		Mean in Original Scale	0.212
		SD in Original Scale	0.266
		95% Percentile Bootstrap UCL	0.375
		95% BCA Bootstrap UCL	0.41
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.426	Data appear Normal at 5% Significance Level	
Theta Star	0.821		
nu star	3.408		
A-D Test Statistic	0.53	Nonparametric Statistics	
5% A-D Critical Value	0.666	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.666	Mean	0.207
5% K-S Critical Value	0.402	SD	0.252
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.103
		95% KM (t) UCL	0.402
Assuming Gamma Distribution		95% KM (z) UCL	0.376
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.387
Minimum	0.06	95% KM (bootstrap t) UCL	0.345
Maximum	0.73	95% KM (BCA) UCL	0.588
Mean	0.353	95% KM (Percentile Bootstrap) UCL	0.588
Median	0.356	95% KM (Chebyshev) UCL	0.655
SD	0.222	97.5% KM (Chebyshev) UCL	0.849
k star	1.305	99% KM (Chebyshev) UCL	1.229
Theta star	0.27		
Nu star	20.89	Potential UCLs to Use	
AppChi2	11.51	95% KM (t) UCL	0.402
95% Gamma Approximate UCL	0.641	95% KM (Percentile Bootstrap) UCL	0.588
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Selenium

General Statistics			
Number of Valid Data	8	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	4
		Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.28	Minimum Detected	-1.273
Maximum Detected	1.6	Maximum Detected	0.47
Mean of Detected	0.833	Mean of Detected	-0.382
SD of Detected	0.578	SD of Detected	0.75
Minimum Non-Detect	0.73	Minimum Non-Detect	-0.315
Maximum Non-Detect	1.8	Maximum Non-Detect	0.588

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.951	Shapiro Wilk Test Statistic	0.993
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.715	Mean	-0.489
SD	0.436	SD	0.59
95% DL/2 (t) UCL	1.007	95% H-Stat (DL/2) UCL	1.725
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.61
		SD in Log Scale	0.557
		Mean in Original Scale	0.635
		SD in Original Scale	0.436
		95% Percentile Bootstrap UCL	0.899
		95% BCA Bootstrap UCL	0.985
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.833	Data appear Normal at 5% Significance Level	
Theta Star	0.999		
nu star	6.667		
A-D Test Statistic	0.205	Nonparametric Statistics	
5% A-D Critical Value	0.66	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.66	Mean	0.662
5% K-S Critical Value	0.397	SD	0.442
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.203
		95% KM (t) UCL	1.047
Assuming Gamma Distribution		95% KM (z) UCL	0.996
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.057
Minimum	0.28	95% KM (bootstrap t) UCL	1.149
Maximum	1.6	95% KM (BCA) UCL	1.121
Mean	0.86	95% KM (Percentile Bootstrap) UCL	1.098
Median	0.87	95% KM (Chebyshev) UCL	1.547
SD	0.382	97.5% KM (Chebyshev) UCL	1.93
k star	3.27	99% KM (Chebyshev) UCL	2.683
Theta star	0.263		
Nu star	52.33	Potential UCLs to Use	
AppChi2	36.71	95% KM (t) UCL	1.047
95% Gamma Approximate UCL	1.226	95% KM (Percentile Bootstrap) UCL	1.098
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Sodium

General Statistics

Number of Valid Observations	8	Number of Distinct Observations	8
Raw Statistics		Log-transformed Statistics	
Minimum	360	Minimum of Log Data	5.886

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Maximum	4400	Maximum of Log Data	8.389
Mean	1370	Mean of log Data	6.936
Median	1045	SD of log Data	0.77
SD	1292		
Coefficient of Variation	0.943		
Skewness	2.27		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.72	Shapiro Wilk Test Statistic	0.96
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	2236	95% H-UCL	3205
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	2924
95% Adjusted-CLT UCL	2513	97.5% Chebyshev (MVUE) UCL	3617
95% Modified-t UCL	2297	99% Chebyshev (MVUE) UCL	4976
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.269	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1080		
MLE of Mean	1370		
MLE of Standard Deviation	1216		
nu star	20.3		
Approximate Chi Square Value (.05)	11.07	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	2122
Adjusted Chi Square Value	9.398	95% Jackknife UCL	2236
		95% Standard Bootstrap UCL	2077
Anderson-Darling Test Statistic	0.402	95% Bootstrap-t UCL	3410
Anderson-Darling 5% Critical Value	0.725	95% Hall's Bootstrap UCL	5089
Kolmogorov-Smirnov Test Statistic	0.231	95% Percentile Bootstrap UCL	2141
Kolmogorov-Smirnov 5% Critical Value	0.298	95% BCA Bootstrap UCL	2371
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3362
		97.5% Chebyshev(Mean, Sd) UCL	4223
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	5916
95% Approximate Gamma UCL	2512		
95% Adjusted Gamma UCL	2959		
Potential UCL to Use		Use 95% Approximate Gamma UCL	2512

Thallium

General Statistics			
Number of Valid Data	8	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	4
		Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.31	Minimum Detected	-1.171
Maximum Detected	2.6	Maximum Detected	0.956
Mean of Detected	1.063	Mean of Detected	-0.288
SD of Detected	1.057	SD of Detected	0.944
Minimum Non-Detect	1.5	Minimum Non-Detect	0.405
Maximum Non-Detect	2.2	Maximum Non-Detect	0.788
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	7
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Observations < Largest ND are treated as NDs — Single DL Non-Detect Percentage 87.50%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.816	Shapiro Wilk Test Statistic	0.942
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.988	Mean	-0.195
SD	0.703	SD	0.634
95% DL/2 (t) UCL	1.458	95% H-Stat (DL/2) UCL	2.499
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.486
		SD in Log Scale	0.681
		Mean in Original Scale	0.792
		SD in Original Scale	0.757
		95% Percentile Bootstrap UCL	1.26
		95% BCA Bootstrap UCL	1.534
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.561	Data appear Normal at 5% Significance Level	
Theta Star	1.893		
nu star	4.49		
A-D Test Statistic	0.349	Nonparametric Statistics	
5% A-D Critical Value	0.662	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.662	Mean	0.806
5% K-S Critical Value	0.399	SD	0.72
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.315
		95% KM (t) UCL	1.404
Assuming Gamma Distribution		95% KM (z) UCL	1.325
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.4
Minimum	0.31	95% KM (bootstrap t) UCL	1.795
Maximum	2.6	95% KM (BCA) UCL	1.485
Mean	1.057	95% KM (Percentile Bootstrap) UCL	1.394
Median	0.982	95% KM (Chebyshev) UCL	2.181
SD	0.696	97.5% KM (Chebyshev) UCL	2.776
k star	1.95	99% KM (Chebyshev) UCL	3.944
Theta star	0.542		
Nu star	31.19	Potential UCLs to Use	
AppChi2	19.43	95% KM (t) UCL	1.404
95% Gamma Approximate UCL	1.696	95% KM (Percentile Bootstrap) UCL	1.394
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Total PCBs

General Statistics

Number of Valid Data	8	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	6
		Percent Non-Detects	75.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0157	Minimum Detected	-4.154
Maximum Detected	0.051	Maximum Detected	-2.976

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mean of Detected	0.0334	Mean of Detected	-3.565
SD of Detected	0.025	SD of Detected	0.833
Minimum Non-Detect	0.021	Minimum Non-Detect	-3.863
Maximum Non-Detect	0.062	Maximum Non-Detect	-2.781

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0217	Mean	-3.984
SD	0.014	SD	0.562
95% DL/2 (t) UCL	0.031	95% H-Stat (DL/2) UCL	0.0368
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.0216
5% K-S Critical Value	N/A	SD	0.0132
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0076
		95% KM (t) UCL	0.036
Assuming Gamma Distribution		95% KM (z) UCL	0.0341
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0472
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	0.051
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	0.0547
SD	N/A	97.5% KM (Chebyshev) UCL	0.069
k star	N/A	99% KM (Chebyshev) UCL	0.0972
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.036
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	N/A

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

95% Adjusted Gamma UCL	N/A

Note: DL/2 is not a recommended method.

Vanadium

General Statistics			
Number of Valid Observations	8	Number of Distinct Observations	8
Raw Statistics		Log-transformed Statistics	
Minimum	1.2	Minimum of Log Data	0.182
Maximum	32	Maximum of Log Data	3.466
Mean	16.76	Mean of log Data	2.543
Median	16.5	SD of log Data	1.018
SD	9.258		
Coefficient of Variation	0.552		
Skewness	-0.0433		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.987	Shapiro Wilk Test Statistic	0.755
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	22.96	95% H-UCL	81.19
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	51.03
95% Adjusted-CLT UCL	22.09	97.5% Chebyshev (MVUE) UCL	64.63
95% Modified-t UCL	22.96	99% Chebyshev (MVUE) UCL	91.33
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.311	Data appear Normal at 5% Significance Level	
Theta Star	12.79		
MLE of Mean	16.76		
MLE of Standard Deviation	14.64		
nu star	20.98		
Approximate Chi Square Value (.05)	11.57	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	22.15
Adjusted Chi Square Value	9.855	95% Jackknife UCL	22.96
		95% Standard Bootstrap UCL	21.87
Anderson-Darling Test Statistic	0.554	95% Bootstrap-t UCL	23.28
Anderson-Darling 5% Critical Value	0.724	95% Hall's Bootstrap UCL	23.04
Kolmogorov-Smirnov Test Statistic	0.23	95% Percentile Bootstrap UCL	21.8
Kolmogorov-Smirnov 5% Critical Value	0.298	95% BCA Bootstrap UCL	21.58
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	31.03
		97.5% Chebyshev(Mean, Sd) UCL	37.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	49.33
95% Approximate Gamma UCL	30.38		
95% Adjusted Gamma UCL	35.68		
Potential UCL to Use		Use 95% Student's-t UCL	22.96

Zinc

General Statistics			
Number of Valid Observations	8	Number of Distinct Observations	8
Raw Statistics		Log-transformed Statistics	

Electronic Appendix F6, Table 3
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Sediment

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	I:\Honeywell.1163\39642.Wastebeds-1-8-R\WasteBeds1-8\BERA\BERA 2010\July 2010 Revision\Tables\Tables\Habitat Sediment ProUCL Input.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Minimum	23	Minimum of Log Data	3.135
Maximum	130	Maximum of Log Data	4.868
Mean	54.49	Mean of log Data	3.841
Median	46.5	SD of log Data	0.583
SD	35.36		
Coefficient of Variation	0.649		
Skewness	1.595		

Warning: There are only 8 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.84	Shapiro Wilk Test Statistic	0.955
Shapiro Wilk Critical Value	0.818	Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	78.17	95% H-UCL	95.72
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	102.9
95% Adjusted-CLT UCL	82.58	97.5% Chebyshev (MVUE) UCL	124.1
95% Modified-t UCL	79.35	99% Chebyshev (MVUE) UCL	165.7
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	2.167	Data appear Normal at 5% Significance Level	
Theta Star	25.14		
MLE of Mean	54.49		
MLE of Standard Deviation	37.01		
nu star	34.68		
Approximate Chi Square Value (.05)	22.21	Nonparametric Statistics	
Adjusted Level of Significance	0.0195	95% CLT UCL	75.05
Adjusted Chi Square Value	19.72	95% Jackknife UCL	78.17
		95% Standard Bootstrap UCL	73.61
Anderson-Darling Test Statistic	0.303	95% Bootstrap-t UCL	94.71
Anderson-Darling 5% Critical Value	0.721	95% Hall's Bootstrap UCL	172.5
Kolmogorov-Smirnov Test Statistic	0.167	95% Percentile Bootstrap UCL	75.36
Kolmogorov-Smirnov 5% Critical Value	0.296	95% BCA Bootstrap UCL	79
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	109
		97.5% Chebyshev(Mean, Sd) UCL	132.6
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	178.9
95% Approximate Gamma UCL	85.09		
95% Adjusted Gamma UCL	95.81		
Potential UCL to Use		Use 95% Student's-t UCL	78.17

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4-Trimethylbenzene

General Statistics

Number of Valid Data	4	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	2
		Percent Non-Detects	50.00%

Warning: This data set only has 4 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable 1,2,4-Trimethylbenzene was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

1,3,5-Trimethylbenzene

General Statistics

Number of Valid Data	4	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	2
		Percent Non-Detects	50.00%

Warning: This data set only has 4 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable 1,3,5-Trimethylbenzene was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

2,4-Dimethylphenol

General Statistics

Number of Valid Data	36	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	31
		Percent Non-Detects	86.11%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.1	Minimum Detected	0.0953
Maximum Detected	3.4	Maximum Detected	1.224
Mean of Detected	2.18	Mean of Detected	0.678
SD of Detected	1.035	SD of Detected	0.518
Minimum Non-Detect	9.8	Minimum Non-Detect	2.282
Maximum Non-Detect	11	Maximum Non-Detect	2.398

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	36
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only | Lognormal Distribution Test with Detected Values Only

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Shapiro Wilk Test Statistic	0.899	Shapiro Wilk Test Statistic	0.879
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.661	Mean	1.49
SD	1.081	SD	0.376
95% DL/2 (t) UCL	4.966	95% H-Stat (DL/2) UCL	6.341
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.678
		SD in Log Scale	0.556
		Mean in Original Scale	2.283
		SD in Original Scale	1.298
		95% Percentile Bootstrap UCL	2.649
		95% BCA Bootstrap UCL	2.694
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	2.166	Data appear Normal at 5% Significance Level	
Theta Star	1.007		
nu star	21.66		
A-D Test Statistic	0.393	Nonparametric Statistics	
5% A-D Critical Value	0.681	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.681	Mean	2.18
5% K-S Critical Value	0.358	SD	0.926
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.463
		95% KM (t) UCL	2.962
Assuming Gamma Distribution		95% KM (z) UCL	2.942
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	3.042
Minimum	1E-09	95% KM (bootstrap t) UCL	3.276
Maximum	3.685	95% KM (BCA) UCL	3
Mean	2.147	95% KM (Percentile Bootstrap) UCL	2.96
Median	2.254	95% KM (Chebyshev) UCL	4.198
SD	1.04	97.5% KM (Chebyshev) UCL	5.072
k star	0.764	99% KM (Chebyshev) UCL	6.787
Theta star	2.81		
Nu star	55.02	Potential UCLs to Use	
AppChi2	38.97	95% KM (t) UCL	2.962
95% Gamma Approximate UCL	3.031	95% KM (Percentile Bootstrap) UCL	2.96
95% Adjusted Gamma UCL	3.08		

Note: DL/2 is not a recommended method.

2-Methylnaphthalene

General Statistics			
Number of Valid Data	36	Number of Detected Data	15
Number of Distinct Detected Data	15	Number of Non-Detect Data	21
		Percent Non-Detects	58.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.61	Minimum Detected	-0.494
Maximum Detected	84	Maximum Detected	4.431
Mean of Detected	26.65	Mean of Detected	2.007
SD of Detected	32.5	SD of Detected	1.926
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	11	Maximum Non-Detect	2.398

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	28
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	8
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	77.78%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.766	Shapiro Wilk Test Statistic	0.86
5% Shapiro Wilk Critical Value	0.881	5% Shapiro Wilk Critical Value	0.881
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	14.09	Mean	1.788
SD	23.2	SD	1.233
95% DL/2 (t) UCL	20.62	95% H-Stat (DL/2) UCL	23.83
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	1.038
		SD in Log Scale	1.733
		Mean in Original Scale	12.55
		SD in Original Scale	23.92
		95% Percentile Bootstrap UCL	18.99
		95% BCA Bootstrap UCL	20.82
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.443	Data do not follow a Discernable Distribution (0.05)	
Theta Star	60.14		
nu star	13.29		
A-D Test Statistic	0.905	Nonparametric Statistics	
5% A-D Critical Value	0.793	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.793	Mean	11.83
5% K-S Critical Value	0.234	SD	23.83
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.113
		95% KM (t) UCL	18.78
Assuming Gamma Distribution		95% KM (z) UCL	18.6
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	18.64
Minimum	1E-09	95% KM (bootstrap t) UCL	22.08
Maximum	84	95% KM (BCA) UCL	18.04
Mean	23.9	95% KM (Percentile Bootstrap) UCL	18.59
Median	20.07	95% KM (Chebyshev) UCL	29.76
SD	22.15	97.5% KM (Chebyshev) UCL	37.51
k star	0.486	99% KM (Chebyshev) UCL	52.75
Theta star	49.16		
Nu star	35	Potential UCLs to Use	
AppChi2	22.47	97.5% KM (Chebyshev) UCL	37.51
95% Gamma Approximate UCL	37.23		
95% Adjusted Gamma UCL	38.01		
Note: DL/2 is not a recommended method.			

2-Methylphenol

General Statistics			
Number of Valid Data	36	Number of Detected Data	12
Number of Distinct Detected Data	12	Number of Non-Detect Data	24
		Percent Non-Detects	66.67%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.2	Minimum Detected	0.788

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Maximum Detected	41	Maximum Detected	3.714
Mean of Detected	11.42	Mean of Detected	1.965
SD of Detected	12.45	SD of Detected	0.977
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	32
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	88.89%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.753	Shapiro Wilk Test Statistic	0.915
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	7.194	Mean	1.739
SD	7.611	SD	0.572
95% DL/2 (t) UCL	9.338	95% H-Stat (DL/2) UCL	8.499
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	1.602
		SD in Log Scale	0.802
		Mean in Original Scale	7.124
		SD in Original Scale	8.002
		95% Percentile Bootstrap UCL	9.516
		95% BCA Bootstrap UCL	10.14
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.958	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	11.91		
nu star	23		
A-D Test Statistic	0.701	Nonparametric Statistics	
5% A-D Critical Value	0.752	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.752	Mean	6.722
5% K-S Critical Value	0.251	SD	7.819
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	1.478
		95% KM (t) UCL	9.219
Assuming Gamma Distribution		95% KM (z) UCL	9.153
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	9.202
Minimum	1.571	95% KM (bootstrap t) UCL	10.98
Maximum	41	95% KM (BCA) UCL	9.195
Mean	10.01	95% KM (Percentile Bootstrap) UCL	9.226
Median	8.568	95% KM (Chebyshev) UCL	13.16
SD	7.973	97.5% KM (Chebyshev) UCL	15.95
k star	1.867	99% KM (Chebyshev) UCL	21.43
Theta star	5.361		
Nu star	134.4	Potential UCLs to Use	
AppChi2	108.6	95% KM (t) UCL	9.219
95% Gamma Approximate UCL	12.38		
95% Adjusted Gamma UCL	12.5		

Note: DL/2 is not a recommended method.

Acenaphthylene

General Statistics

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Number of Valid Data	36	Number of Detected Data	2
Number of Distinct Detected Data	1	Number of Non-Detect Data	34
		Percent Non-Detects	94.44%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, B

The data set for variable Acenaphthylene was not processed!

Aluminum

General Statistics			
Number of Valid Data	36	Number of Detected Data	24
Number of Distinct Detected Data	23	Number of Non-Detect Data	12
		Percent Non-Detects	33.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.018	Minimum Detected	-4.017
Maximum Detected	26.4	Maximum Detected	3.273
Mean of Detected	1.91	Mean of Detected	-0.751
SD of Detected	5.319	SD of Detected	1.665
Minimum Non-Detect	0.1	Minimum Non-Detect	-2.303
Maximum Non-Detect	0.5	Maximum Non-Detect	-0.693
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	23
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	13
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	63.89%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.343	Shapiro Wilk Test Statistic	0.97
5% Shapiro Wilk Critical Value	0.916	5% Shapiro Wilk Critical Value	0.916
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.296	Mean	-1.454
SD	4.401	SD	1.706
95% DL/2 (t) UCL	2.535	95% H-Stat (DL/2) UCL	2.349
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.615
		SD in Log Scale	1.913
		Mean in Original Scale	1.29
		SD in Original Scale	4.403
		95% Percentile Bootstrap UCL	2.698
		95% BCA Bootstrap UCL	3.595
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.431	Data appear Lognormal at 5% Significance Level	
Theta Star	4.436		
nu star	20.67		
A-D Test Statistic	1.365	Nonparametric Statistics	
5% A-D Critical Value	0.815	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.815	Mean	1.29
5% K-S Critical Value	0.189	SD	4.341
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.739
		95% KM (t) UCL	2.538
Assuming Gamma Distribution		95% KM (z) UCL	2.505

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.529
Minimum	1E-09	95% KM (bootstrap t) UCL	8.516
Maximum	26.4	95% KM (BCA) UCL	2.682
Mean	1.425	95% KM (Percentile Bootstrap) UCL	2.669
Median	0.396	95% KM (Chebyshev) UCL	4.511
SD	4.384	97.5% KM (Chebyshev) UCL	5.905
k star	0.162	99% KM (Chebyshev) UCL	8.644
Theta star	8.812		
Nu star	11.64	Potential UCLs to Use	
AppChi2	4.991	99% KM (Chebyshev) UCL	8.644
95% Gamma Approximate UCL	3.323		
95% Adjusted Gamma UCL	3.459		

Note: DL/2 is not a recommended method.

Anthracene

General Statistics			
Number of Valid Data	36	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	34
		Percent Non-Detects	94.44%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.1	Minimum Detected	0.0953
Maximum Detected	1.7	Maximum Detected	0.531
Mean of Detected	1.4	Mean of Detected	0.313
SD of Detected	0.424	SD of Detected	0.308
Minimum Non-Detect	9.8	Minimum Non-Detect	2.282
Maximum Non-Detect	11	Maximum Non-Detect	2.398

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	36
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.881	Mean	1.553
SD	0.88	SD	0.311
95% DL/2 (t) UCL	5.128	95% H-Stat (DL/2) UCL	6.317

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	1.4
5% K-S Critical Value	N/A	SD	0.3
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.3
		95% KM (t) UCL	1.907
Assuming Gamma Distribution		95% KM (z) UCL	1.893
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.107
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	2.708
SD	N/A	97.5% KM (Chebyshev) UCL	3.273
k star	N/A	99% KM (Chebyshev) UCL	4.385
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	1.907
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	N/A
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Arsenic

General Statistics			
Number of Valid Data	36	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	29
		Percent Non-Detects	80.56%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.002	Minimum Detected	-6.215
Maximum Detected	0.506	Maximum Detected	-0.681
Mean of Detected	0.0757	Mean of Detected	-4.866
SD of Detected	0.19	SD of Detected	1.875
Minimum Non-Detect	0.005	Minimum Non-Detect	-5.298
Maximum Non-Detect	0.025	Maximum Non-Detect	-3.689
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	35
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.22%

Warning: There are only 7 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.459	Shapiro Wilk Test Statistic	0.625
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0172	Mean	-5.689
SD	0.0838	SD	0.929
95% DL/2 (t) UCL	0.0408	95% H-Stat (DL/2) UCL	0.00658
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.459
		SD in Log Scale	1.204
		Mean in Original Scale	0.0192
		SD in Original Scale	0.0836
		95% Percentile Bootstrap UCL	0.0468
		95% BCA Bootstrap UCL	0.0619
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.268	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.283		
nu star	3.745		
A-D Test Statistic	1.756	Nonparametric Statistics	
5% A-D Critical Value	0.784	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.784	Mean	0.0177
5% K-S Critical Value	0.335	SD	0.0825
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0149
		95% KM (t) UCL	0.0428
Assuming Gamma Distribution		95% KM (z) UCL	0.0421
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0413
Minimum	1E-09	95% KM (bootstrap t) UCL	1.135
Maximum	0.506	95% KM (BCA) UCL	0.046
Mean	0.0692	95% KM (Percentile Bootstrap) UCL	0.0456
Median	0.0732	95% KM (Chebyshev) UCL	0.0825
SD	0.0873	97.5% KM (Chebyshev) UCL	0.111
k star	0.24	99% KM (Chebyshev) UCL	0.166
Theta star	0.289		
Nu star	17.25	Potential UCLs to Use	
AppChi2	8.851	97.5% KM (Chebyshev) UCL	0.111
95% Gamma Approximate UCL	0.135		
95% Adjusted Gamma UCL	0.139		

Note: DL/2 is not a recommended method.

Barium

General Statistics			
Number of Valid Observations	36	Number of Distinct Observations	28
Raw Statistics		Log-transformed Statistics	
Minimum	0.021	Minimum of Log Data	-3.863
Maximum	1.73	Maximum of Log Data	0.548
Mean	0.307	Mean of log Data	-1.525
Median	0.212	SD of log Data	0.843
SD	0.315		
Coefficient of Variation	1.025		
Skewness	3.066		

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.682	Shapiro Wilk Test Statistic	0.977
Shapiro Wilk Critical Value	0.935	Shapiro Wilk Critical Value	0.935
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.396	95% H-UCL	0.426
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.517
95% Adjusted-CLT UCL	0.422	97.5% Chebyshev (MVUE) UCL	0.608
95% Modified-t UCL	0.4	99% Chebyshev (MVUE) UCL	0.787
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.484	Data appear Lognormal at 5% Significance Level	
Theta Star	0.207		
MLE of Mean	0.307		
MLE of Standard Deviation	0.252		
nu star	106.8		
Approximate Chi Square Value (.05)	83.97	Nonparametric Statistics	
Adjusted Level of Significance	0.0428	95% CLT UCL	0.393
Adjusted Chi Square Value	83.05	95% Jackknife UCL	0.396
		95% Standard Bootstrap UCL	0.392
Anderson-Darling Test Statistic	0.82	95% Bootstrap-t UCL	0.466
Anderson-Darling 5% Critical Value	0.765	95% Hall's Bootstrap UCL	0.795
Kolmogorov-Smirnov Test Statistic	0.15	95% Percentile Bootstrap UCL	0.4
Kolmogorov-Smirnov 5% Critical Value	0.149	95% BCA Bootstrap UCL	0.433
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.536
		97.5% Chebyshev(Mean, Sd) UCL	0.635
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.829
95% Approximate Gamma UCL	0.391		
95% Adjusted Gamma UCL	0.395		
Potential UCL to Use		Use 95% H-UCL	0.426

Benzene

General Statistics			
Number of Valid Data	36	Number of Detected Data	12
Number of Distinct Detected Data	12	Number of Non-Detect Data	24
		Percent Non-Detects	66.67%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.1	Minimum Detected	-2.303
Maximum Detected	480	Maximum Detected	6.174
Mean of Detected	48.34	Mean of Detected	1.16
SD of Detected	136.9	SD of Detected	2.495
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	60	Maximum Non-Detect	4.094
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	35
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.22%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.402	Shapiro Wilk Test Statistic	0.964
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	17.36	Mean	-0.149
SD	80.07	SD	1.966
95% DL/2 (t) UCL	39.9	95% H-Stat (DL/2) UCL	16.7
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.053
		SD in Log Scale	2.536
		Mean in Original Scale	16.32
		SD in Original Scale	80.12
		95% Percentile Bootstrap UCL	42.61
		95% BCA Bootstrap UCL	57.89
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.25	Data appear Lognormal at 5% Significance Level	
Theta Star	193.1		
nu star	6.008		
A-D Test Statistic	1.022	Nonparametric Statistics	
5% A-D Critical Value	0.841	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.841	Mean	16.35
5% K-S Critical Value	0.268	SD	79.02
Data not Gamma Distributed at 5% Significance Level		SE of Mean	13.76
		95% KM (t) UCL	39.6
Assuming Gamma Distribution		95% KM (z) UCL	38.99
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	38.93
Minimum	0.1	95% KM (bootstrap t) UCL	413.2
Maximum	480	95% KM (BCA) UCL	43.35
Mean	46.58	95% KM (Percentile Bootstrap) UCL	41.96
Median	45.38	95% KM (Chebyshev) UCL	76.33
SD	76.85	97.5% KM (Chebyshev) UCL	102.3
k star	0.632	99% KM (Chebyshev) UCL	153.3
Theta star	73.75		
Nu star	45.48	Potential UCLs to Use	
AppChi2	31.01	99% KM (Chebyshev) UCL	153.3
95% Gamma Approximate UCL	68.32		
95% Adjusted Gamma UCL	69.54		

Note: DL/2 is not a recommended method.

bis(2-Ethylhexyl)phthalate

General Statistics			
Number of Valid Data	36	Number of Detected Data	5
Number of Distinct Detected Data	4	Number of Non-Detect Data	31
		Percent Non-Detects	86.11%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.1	Minimum Detected	0.0953
Maximum Detected	3.3	Maximum Detected	1.194
Mean of Detected	2.02	Mean of Detected	0.584
SD of Detected	1.092	SD of Detected	0.543
Minimum Non-Detect	9.8	Minimum Non-Detect	2.282
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	36
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.793	Shapiro Wilk Test Statistic	0.813
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.625	Mean	1.474
SD	1.132	SD	0.407
95% DL/2 (t) UCL	4.944	95% H-Stat (DL/2) UCL	7.226
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.584
		SD in Log Scale	0.57
		Mean in Original Scale	2.097
		SD in Original Scale	1.232
		95% Percentile Bootstrap UCL	2.43
		95% BCA Bootstrap UCL	2.458
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.881	Data appear Normal at 5% Significance Level	
Theta Star	1.074		
nu star	18.81		
A-D Test Statistic	0.589	Nonparametric Statistics	
5% A-D Critical Value	0.681	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.681	Mean	2.02
5% K-S Critical Value	0.358	SD	0.977
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.488
		95% KM (t) UCL	2.845
Assuming Gamma Distribution		95% KM (z) UCL	2.823
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.929
Minimum	1E-09	95% KM (bootstrap t) UCL	5.807
Maximum	3.539	95% KM (BCA) UCL	2.811
Mean	1.994	95% KM (Percentile Bootstrap) UCL	2.9
Median	2.113	95% KM (Chebyshev) UCL	4.148
SD	1.028	97.5% KM (Chebyshev) UCL	5.069
k star	0.722	99% KM (Chebyshev) UCL	6.878
Theta star	2.76		
Nu star	52.01	Potential UCLs to Use	
AppChi2	36.44	95% KM (t) UCL	2.845
95% Gamma Approximate UCL	2.845	95% KM (Percentile Bootstrap) UCL	2.9
95% Adjusted Gamma UCL	2.892		

Note: DL/2 is not a recommended method.

Cadmium

General Statistics

Number of Valid Data	36	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	34
		Percent Non-Detects	94.44%

Raw Statistics | Log-transformed Statistics

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum Detected	0.00075	Minimum Detected	-7.195
Maximum Detected	0.0011	Maximum Detected	-6.812
Mean of Detected	0.000925	Mean of Detected	-7.004
SD of Detected	0.000247	SD of Detected	0.271
Minimum Non-Detect	0.0007	Minimum Non-Detect	-7.264
Maximum Non-Detect	0.05	Maximum Non-Detect	-2.996
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	36
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0048	Mean	-5.608
SD	0.00381	SD	0.881
95% DL/2 (t) UCL	0.00588	95% H-Stat (DL/2) UCL	0.0081
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.00082
5% K-S Critical Value	N/A	SD	0.00014
Data not Gamma Distributed at 5% Significance Level		SE of Mean	8.85E-05
		95% KM (t) UCL	0.00097
Assuming Gamma Distribution		95% KM (z) UCL	0.000966
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00104
Minimum	N/A	95% KM (bootstrap t) UCL	0.000917
Maximum	N/A	95% KM (BCA) UCL	N/A

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.0011
Median	N/A	95% KM (Chebyshev) UCL	0.00121
SD	N/A	97.5% KM (Chebyshev) UCL	0.00137
k star	N/A	99% KM (Chebyshev) UCL	0.0017
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.00097
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	0.0011
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Calcium

General Statistics			
Number of Valid Observations	36	Number of Distinct Observations	29
Raw Statistics		Log-transformed Statistics	
Minimum	32	Minimum of Log Data	3.466
Maximum	3700	Maximum of Log Data	8.216
Mean	951.2	Mean of log Data	6.537
Median	805	SD of log Data	0.962
SD	710.5		
Coefficient of Variation	0.747		
Skewness	1.88		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.858	Shapiro Wilk Test Statistic	0.884
Shapiro Wilk Critical Value	0.935	Shapiro Wilk Critical Value	0.935
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1151	95% H-UCL	1604
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1942
95% Adjusted-CLT UCL	1186	97.5% Chebyshev (MVUE) UCL	2316
95% Modified-t UCL	1157	99% Chebyshev (MVUE) UCL	3052
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.583	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	600.9		
MLE of Mean	951.2		
MLE of Standard Deviation	756		
nu star	114		
Approximate Chi Square Value (.05)	90.33	Nonparametric Statistics	
Adjusted Level of Significance	0.0428	95% CLT UCL	1146
Adjusted Chi Square Value	89.37	95% Jackknife UCL	1151
		95% Standard Bootstrap UCL	1143
Anderson-Darling Test Statistic	0.608	95% Bootstrap-t UCL	1193
Anderson-Darling 5% Critical Value	0.764	95% Hall's Bootstrap UCL	1272
Kolmogorov-Smirnov Test Statistic	0.149	95% Percentile Bootstrap UCL	1142
Kolmogorov-Smirnov 5% Critical Value	0.149	95% BCA Bootstrap UCL	1191
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1467
		97.5% Chebyshev(Mean, Sd) UCL	1691
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	2129
95% Approximate Gamma UCL	1200		
95% Adjusted Gamma UCL	1213		
Potential UCL to Use		Use 95% Approximate Gamma UCL	1200

Cobalt

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

General Statistics			
Number of Valid Data	36	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	32
		Percent Non-Detects	88.89%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0016	Minimum Detected	-6.438
Maximum Detected	0.0212	Maximum Detected	-3.854
Mean of Detected	0.00863	Mean of Detected	-5.267
SD of Detected	0.00912	SD of Detected	1.22
Minimum Non-Detect	0.05	Minimum Non-Detect	-2.996
Maximum Non-Detect	0.25	Maximum Non-Detect	-1.386
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	36
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.865	Shapiro Wilk Test Statistic	0.914
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.026	Mean	-3.819
SD	0.018	SD	0.685
95% DL/2 (t) UCL	0.031	95% H-Stat (DL/2) UCL	0.0427
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.267
		SD in Log Scale	1.447
		Mean in Original Scale	0.0132
		SD in Original Scale	0.0217
		95% Percentile Bootstrap UCL	0.0195
		95% BCA Bootstrap UCL	0.0219
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.444	Data appear Normal at 5% Significance Level	
Theta Star	0.0194		
nu star	3.554		
A-D Test Statistic	0.346	Nonparametric Statistics	
5% A-D Critical Value	0.666	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.666	Mean	0.00863
5% K-S Critical Value	0.402	SD	0.0079
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00456
		95% KM (t) UCL	0.0163
Assuming Gamma Distribution		95% KM (z) UCL	0.0161
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0174
Minimum	1E-09	95% KM (bootstrap t) UCL	0.0242
Maximum	0.0321	95% KM (BCA) UCL	0.0173

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Mean	0.00966	95% KM (Percentile Bootstrap) UCL	0.0173
Median	0.00654	95% KM (Chebyshev) UCL	0.0285
SD	0.00978	97.5% KM (Chebyshev) UCL	0.0371
k star	0.24	99% KM (Chebyshev) UCL	0.054
Theta star	0.0403		
Nu star	17.26	Potential UCLs to Use	
AppChi2	8.861	95% KM (t) UCL	0.0163
95% Gamma Approximate UCL	0.0188	95% KM (Percentile Bootstrap) UCL	0.0173
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Copper

General Statistics			
Number of Valid Data	36	Number of Detected Data	19
Number of Distinct Detected Data	17	Number of Non-Detect Data	17
		Percent Non-Detects	47.22%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0018	Minimum Detected	-6.32
Maximum Detected	0.0506	Maximum Detected	-2.984
Mean of Detected	0.00988	Mean of Detected	-5.256
SD of Detected	0.0145	SD of Detected	1.032
Minimum Non-Detect	0.004	Minimum Non-Detect	-5.521
Maximum Non-Detect	0.05	Maximum Non-Detect	-2.996
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	35
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.22%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.584	Shapiro Wilk Test Statistic	0.854
5% Shapiro Wilk Critical Value	0.901	5% Shapiro Wilk Critical Value	0.901
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00833	Mean	-5.218
SD	0.0111	SD	0.817
95% DL/2 (t) UCL	0.0114	95% H-Stat (DL/2) UCL	0.0137
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.409
		SD in Log Scale	0.874
		Mean in Original Scale	0.00736
		SD in Original Scale	0.0109
		95% Percentile Bootstrap UCL	0.0106
		95% BCA Bootstrap UCL	0.0118
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.804	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0123		
nu star	30.57		
A-D Test Statistic	1.805	Nonparametric Statistics	
5% A-D Critical Value	0.773	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.773	Mean	0.00714
5% K-S Critical Value	0.205	SD	0.0108
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00191

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
		95% KM (t) UCL	0.0104
Assuming Gamma Distribution		95% KM (z) UCL	0.0103
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0103
Minimum	0.0018	95% KM (bootstrap t) UCL	0.0147
Maximum	0.0506	95% KM (BCA) UCL	0.0106
Mean	0.00981	95% KM (Percentile Bootstrap) UCL	0.0105
Median	0.00822	95% KM (Chebyshev) UCL	0.0154
SD	0.0104	97.5% KM (Chebyshev) UCL	0.019
k star	1.491	99% KM (Chebyshev) UCL	0.0261
Theta star	0.00658		
Nu star	107.3	Potential UCLs to Use	
AppChi2	84.43	97.5% KM (Chebyshev) UCL	0.019
95% Gamma Approximate UCL	0.0125		
95% Adjusted Gamma UCL	0.0126		

Note: DL/2 is not a recommended method.

Cyanide, Total

General Statistics			
Number of Valid Data	36	Number of Detected Data	25
Number of Distinct Detected Data	19	Number of Non-Detect Data	11
		Percent Non-Detects	30.56%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0035	Minimum Detected	-5.655
Maximum Detected	0.0617	Maximum Detected	-2.785
Mean of Detected	0.0106	Mean of Detected	-4.789
SD of Detected	0.0112	SD of Detected	0.621
Minimum Non-Detect	0.007	Minimum Non-Detect	-4.962
Maximum Non-Detect	0.01	Maximum Non-Detect	-4.605
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	25
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	11
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	69.44%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.49	Shapiro Wilk Test Statistic	0.888
5% Shapiro Wilk Critical Value	0.918	5% Shapiro Wilk Critical Value	0.918
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00879	Mean	-4.964
SD	0.00969	SD	0.585
95% DL/2 (t) UCL	0.0115	95% H-Stat (DL/2) UCL	0.00982
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-4.929
		SD in Log Scale	0.585
		Mean in Original Scale	0.00903
		SD in Original Scale	0.00963
		95% Percentile Bootstrap UCL	0.0118
		95% BCA Bootstrap UCL	0.014
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.997	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0053		
nu star	99.85		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
A-D Test Statistic	1.344	Nonparametric Statistics	
5% A-D Critical Value	0.755	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.755	Mean	0.00906
5% K-S Critical Value	0.177	SD	0.0095
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00163
		95% KM (t) UCL	0.0118
Assuming Gamma Distribution		95% KM (z) UCL	0.0118
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0118
Minimum	0.00275	95% KM (bootstrap t) UCL	0.0152
Maximum	0.0617	95% KM (BCA) UCL	0.0123
Mean	0.0105	95% KM (Percentile Bootstrap) UCL	0.0121
Median	0.00967	95% KM (Chebyshev) UCL	0.0162
SD	0.00958	97.5% KM (Chebyshev) UCL	0.0193
k star	2.451	99% KM (Chebyshev) UCL	0.0253
Theta star	0.00427		
Nu star	176.5	Potential UCLs to Use	
AppChi2	146.7	95% KM (BCA) UCL	0.0123
95% Gamma Approximate UCL	0.0126		
95% Adjusted Gamma UCL	0.0127		

Note: DL/2 is not a recommended method.

delta-BHC

General Statistics			
Number of Valid Data	32	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	31
		Percent Non-Detects	96.88%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, B

The data set for variable delta-BHC was not processed!

Dibenzofuran

General Statistics			
Number of Valid Data	36	Number of Detected Data	12
Number of Distinct Detected Data	12	Number of Non-Detect Data	24
		Percent Non-Detects	66.67%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.1	Minimum Detected	0.0953
Maximum Detected	7.1	Maximum Detected	1.96
Mean of Detected	4.108	Mean of Detected	1.225
SD of Detected	2.339	SD of Detected	0.684
Minimum Non-Detect	9.8	Minimum Non-Detect	2.282
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	36
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.883	Shapiro Wilk Test Statistic	0.891
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.769	Mean	1.494
SD	1.405	SD	0.431
95% DL/2 (t) UCL	5.165	95% H-Stat (DL/2) UCL	7.413
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.225
		SD in Log Scale	0.643
		Mean in Original Scale	4.113
		SD in Original Scale	2.538
		95% Percentile Bootstrap UCL	4.789
		95% BCA Bootstrap UCL	4.896
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	2.162	Data appear Normal at 5% Significance Level	
Theta Star	1.9		
nu star	51.89		
A-D Test Statistic	0.497	Nonparametric Statistics	
5% A-D Critical Value	0.739	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.739	Mean	4.108
5% K-S Critical Value	0.248	SD	2.24
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.675
		95% KM (t) UCL	5.249
Assuming Gamma Distribution		95% KM (z) UCL	5.219
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	5.283
Minimum	1E-09	95% KM (bootstrap t) UCL	5.488
Maximum	7.225	95% KM (BCA) UCL	5.208
Mean	4.129	95% KM (Percentile Bootstrap) UCL	5.155
Median	4.317	95% KM (Chebyshev) UCL	7.052
SD	2.159	97.5% KM (Chebyshev) UCL	8.325
k star	0.743	99% KM (Chebyshev) UCL	10.83
Theta star	5.56		
Nu star	53.47	Potential UCLs to Use	
AppChi2	37.67	95% KM (t) UCL	5.249
95% Gamma Approximate UCL	5.861	95% KM (Percentile Bootstrap) UCL	5.155
95% Adjusted Gamma UCL	5.956		

Note: DL/2 is not a recommended method.

Dieldrin

General Statistics			
Number of Valid Data	32	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	31
		Percent Non-Detects	96.88%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, B

The data set for variable Dieldrin was not processed!

Fluorene

General Statistics			
Number of Valid Data	36	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	34
		Percent Non-Detects	94.44%

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Raw Statistics		Log-transformed Statistics	
Minimum Detected	3	Minimum Detected	1.099
Maximum Detected	5	Maximum Detected	1.609
Mean of Detected	4	Mean of Detected	1.354
SD of Detected	1.414	SD of Detected	0.361
Minimum Non-Detect	9.8	Minimum Non-Detect	2.282
Maximum Non-Detect	11	Maximum Non-Detect	2.398

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	36
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	5.025	Mean	1.611
SD	0.396	SD	0.095
95% DL/2 (t) UCL	5.137	95% H-Stat (DL/2) UCL	5.696
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	4
5% K-S Critical Value	N/A	SD	1
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1
		95% KM (t) UCL	5.69
Assuming Gamma Distribution		95% KM (z) UCL	5.645
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	6.356
Minimum	N/A	95% KM (bootstrap t) UCL	N/A

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	5
Median	N/A	95% KM (Chebyshev) UCL	8.359
SD	N/A	97.5% KM (Chebyshev) UCL	10.24
k star	N/A	99% KM (Chebyshev) UCL	13.95
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	5.69
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	5
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Heptachlor epoxide

General Statistics

Number of Valid Data	32	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	31
		Percent Non-Detects	96.88%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, B

The data set for variable Heptachlor epoxide was not processed!

Iron

General Statistics

Number of Valid Data	36	Number of Detected Data	31
Number of Distinct Detected Data	31	Number of Non-Detect Data	5
		Percent Non-Detects	13.89%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0063	Minimum Detected	-5.067
Maximum Detected	15.9	Maximum Detected	2.766
Mean of Detected	1.975	Mean of Detected	-1.092
SD of Detected	4.14	SD of Detected	2.112
Minimum Non-Detect	0.05	Minimum Non-Detect	-2.996
Maximum Non-Detect	0.25	Maximum Non-Detect	-1.386

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	19
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	17
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	52.78%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.505	Shapiro Wilk Test Statistic	0.968
5% Shapiro Wilk Critical Value	0.929	5% Shapiro Wilk Critical Value	0.929
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.707	Mean	-1.408
SD	3.893	SD	2.126
95% DL/2 (t) UCL	2.803	95% H-Stat (DL/2) UCL	10.25

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.457
		SD in Log Scale	2.181
		Mean in Original Scale	1.705

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
		SD in Original Scale	3.893
		95% Percentile Bootstrap UCL	2.855
		95% BCA Bootstrap UCL	3.179
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.36	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	5.483		
nu star	22.34		
A-D Test Statistic	1.116	Nonparametric Statistics	
5% A-D Critical Value	0.838	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.838	Mean	1.706
5% K-S Critical Value	0.17	SD	3.839
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.65
		95% KM (t) UCL	2.804
Assuming Gamma Distribution		95% KM (z) UCL	2.775
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.802
Minimum	1E-09	95% KM (bootstrap t) UCL	3.549
Maximum	15.9	95% KM (BCA) UCL	2.936
Mean	1.701	95% KM (Percentile Bootstrap) UCL	2.766
Median	0.178	95% KM (Chebyshev) UCL	4.541
SD	3.895	97.5% KM (Chebyshev) UCL	5.767
k star	0.177	99% KM (Chebyshev) UCL	8.177
Theta star	9.605		
Nu star	12.75	Potential UCLs to Use	
AppChi2	5.726	95% KM (Chebyshev) UCL	4.541
95% Gamma Approximate UCL	3.788		
95% Adjusted Gamma UCL	3.935		
Note: DL/2 is not a recommended method.			

Lead

General Statistics			
Number of Valid Data	36	Number of Detected Data	33
Number of Distinct Detected Data	23	Number of Non-Detect Data	3
		Percent Non-Detects	8.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.002	Minimum Detected	-6.215
Maximum Detected	0.0387	Maximum Detected	-3.252
Mean of Detected	0.00858	Mean of Detected	-5.035
SD of Detected	0.00809	SD of Detected	0.692
Minimum Non-Detect	0.004	Minimum Non-Detect	-5.521
Maximum Non-Detect	0.005	Maximum Non-Detect	-5.298
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	17
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	19
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	47.22%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.684	Shapiro Wilk Test Statistic	0.912
5% Shapiro Wilk Critical Value	0.931	5% Shapiro Wilk Critical Value	0.931
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00806	Mean	-5.121
SD	0.00793	SD	0.723
95% DL/2 (t) UCL	0.0103	95% H-Stat (DL/2) UCL	0.00943

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	0.00419	Mean in Log Scale	-5.09
SD	0.0117	SD in Log Scale	0.689
95% MLE (t) UCL	0.00748	Mean in Original Scale	0.00815
95% MLE (Tiku) UCL	0.00815	SD in Original Scale	0.00787
		95% Percentile Bootstrap UCL	0.0104
		95% BCA Bootstrap UCL	0.0111

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.796	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.00478		
nu star	118.5		
A-D Test Statistic	2.076	Nonparametric Statistics	
5% A-D Critical Value	0.76	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.76	Mean	0.00817
5% K-S Critical Value	0.155	SD	0.00775
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00131
		95% KM (t) UCL	0.0104
Assuming Gamma Distribution		95% KM (z) UCL	0.0103
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0104
Minimum	0.00161	95% KM (bootstrap t) UCL	0.0116
Maximum	0.0387	95% KM (BCA) UCL	0.0107
Mean	0.00814	95% KM (Percentile Bootstrap) UCL	0.0104
Median	0.0053	95% KM (Chebyshev) UCL	0.0139
SD	0.0079	97.5% KM (Chebyshev) UCL	0.0164
k star	1.703	99% KM (Chebyshev) UCL	0.0212
Theta star	0.00478		
Nu star	122.6	Potential UCLs to Use	
AppChi2	98.04	95% KM (Chebyshev) UCL	0.0139
95% Gamma Approximate UCL	0.0102		
95% Adjusted Gamma UCL	0.0103		

Note: DL/2 is not a recommended method.

Manganese

General Statistics			
Number of Valid Data	36	Number of Detected Data	23
Number of Distinct Detected Data	21	Number of Non-Detect Data	13
		Percent Non-Detects	36.11%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.002	Minimum Detected	-6.215
Maximum Detected	3.9	Maximum Detected	1.361
Mean of Detected	0.376	Mean of Detected	-2.861
SD of Detected	1.006	SD of Detected	1.813
Minimum Non-Detect	0.05	Minimum Non-Detect	-2.996
Maximum Non-Detect	0.25	Maximum Non-Detect	-1.386
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	33
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	91.67%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.392	Shapiro Wilk Test Statistic	0.952
5% Shapiro Wilk Critical Value	0.914	5% Shapiro Wilk Critical Value	0.914
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.252	Mean	-3.115
SD	0.815	SD	1.501
95% DL/2 (t) UCL	0.481	95% H-Stat (DL/2) UCL	0.39
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-3.292
		SD in Log Scale	1.671
		Mean in Original Scale	0.25
		SD in Original Scale	0.816
		95% Percentile Bootstrap UCL	0.473
		95% BCA Bootstrap UCL	0.622
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.339	Data appear Lognormal at 5% Significance Level	
Theta Star	1.109		
nu star	15.58		
A-D Test Statistic	2.37	Nonparametric Statistics	
5% A-D Critical Value	0.837	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.837	Mean	0.25
5% K-S Critical Value	0.195	SD	0.804
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.137
		95% KM (t) UCL	0.481
Assuming Gamma Distribution		95% KM (z) UCL	0.475
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.479
Minimum	0.002	95% KM (bootstrap t) UCL	2.635
Maximum	3.9	95% KM (BCA) UCL	0.5
Mean	0.396	95% KM (Percentile Bootstrap) UCL	0.507
Median	0.127	95% KM (Chebyshev) UCL	0.847
SD	0.821	97.5% KM (Chebyshev) UCL	1.106
k star	0.468	99% KM (Chebyshev) UCL	1.613
Theta star	0.846		
Nu star	33.66	Potential UCLs to Use	
AppChi2	21.4	99% KM (Chebyshev) UCL	1.613
95% Gamma Approximate UCL	0.622		
95% Adjusted Gamma UCL	0.636		

Note: DL/2 is not a recommended method.

Methyl Mercury (Derived)

General Statistics			
Number of Valid Data	36	Number of Detected Data	34
Number of Distinct Detected Data	34	Number of Non-Detect Data	2
		Percent Non-Detects	5.56%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.2E-08	Minimum Detected	-17.63
Maximum Detected	1.21E-05	Maximum Detected	-11.32
Mean of Detected	9.94E-07	Mean of Detected	-15.57
SD of Detected	2.43E-06	SD of Detected	1.689
Minimum Non-Detect	1.1E-06	Minimum Non-Detect	-13.72
Maximum Non-Detect	1.3E-06	Maximum Non-Detect	-13.55
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	31
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	86.11%

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.462	Shapiro Wilk Test Statistic	0.873
5% Shapiro Wilk Critical Value	0.933	5% Shapiro Wilk Critical Value	0.933
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	9.72E-07	Mean	-15.5
SD	2.36E-06	SD	1.665
95% DL/2 (t) UCL	1.64E-06	95% H-Stat (DL/2) UCL	2.16E-06
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	6.73E-06	Mean in Log Scale	-15.59
SD	3.42E-06	SD in Log Scale	1.642
95% MLE (t) UCL	7.69E-06	Mean in Original Scale	9.45E-07
95% MLE (Tiku) UCL	9.25E-06	SD in Original Scale	2.36E-06
		95% Percentile Bootstrap UCL	1.65E-06
		95% BCA Bootstrap UCL	1.88E-06
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.366	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.71E-06		
nu star	24.91		
A-D Test Statistic	3.86	Nonparametric Statistics	
5% A-D Critical Value	0.838	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.838	Mean	9.47E-07
5% K-S Critical Value	0.162	SD	2.33E-06
Data not Gamma Distributed at 5% Significance Level		SE of Mean	3.94E-07
		95% KM (t) UCL	1.61E-06
Assuming Gamma Distribution		95% KM (z) UCL	1.6E-06
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.61E-06
Minimum	2.2E-08	95% KM (bootstrap t) UCL	2.4E-06
Maximum	1.21E-05	95% KM (BCA) UCL	1.76E-06
Mean	9.45E-07	95% KM (Percentile Bootstrap) UCL	1.66E-06
Median	1.09E-07	95% KM (Chebyshev) UCL	2.67E-06
SD	2.36E-06	97.5% KM (Chebyshev) UCL	3.41E-06
k star	0.372	99% KM (Chebyshev) UCL	4.87E-06
Theta star	2.54E-06		
Nu star	26.81	Potential UCLs to Use	
AppChi2	16	99% KM (Chebyshev) UCL	4.87E-06
95% Gamma Approximate UCL	1.58E-06		
95% Adjusted Gamma UCL	1.62E-06		

Note: DL/2 is not a recommended method.

Mercury

General Statistics			
Number of Valid Data	36	Number of Detected Data	34
Number of Distinct Detected Data	34	Number of Non-Detect Data	2
		Percent Non-Detects	5.56%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.2E-06	Minimum Detected	-13.03
Maximum Detected	0.00121	Maximum Detected	-6.717
Mean of Detected	9.94E-05	Mean of Detected	-10.96
SD of Detected	0.000243	SD of Detected	1.689

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum Non-Detect	0.00011	Minimum Non-Detect	-9.115
Maximum Non-Detect	0.00013	Maximum Non-Detect	-8.948
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	31
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	86.11%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.462	Shapiro Wilk Test Statistic	0.873
5% Shapiro Wilk Critical Value	0.933	5% Shapiro Wilk Critical Value	0.933
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	9.72E-05	Mean	-10.89
SD	0.000236	SD	1.665
95% DL/2 (t) UCL	0.000164	95% H-Stat (DL/2) UCL	0.000221
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	0.000673	Mean in Log Scale	-10.98
SD	0.000342	SD in Log Scale	1.642
95% MLE (t) UCL	0.000769	Mean in Original Scale	9.45E-05
95% MLE (Tiku) UCL	0.000925	SD in Original Scale	0.000236
		95% Percentile Bootstrap UCL	0.000169
		95% BCA Bootstrap UCL	0.0002
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.366	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.000271		
nu star	24.91		
A-D Test Statistic	3.86	Nonparametric Statistics	
5% A-D Critical Value	0.838	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.838	Mean	9.47E-05
5% K-S Critical Value	0.162	SD	0.000233
Data not Gamma Distributed at 5% Significance Level		SE of Mean	3.94E-05
		95% KM (t) UCL	0.000161
Assuming Gamma Distribution		95% KM (z) UCL	0.00016
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.000161
Minimum	2.2E-06	95% KM (bootstrap t) UCL	0.000241
Maximum	0.00121	95% KM (BCA) UCL	0.000166
Mean	9.45E-05	95% KM (Percentile Bootstrap) UCL	0.000169
Median	1.09E-05	95% KM (Chebyshev) UCL	0.000267
SD	0.000236	97.5% KM (Chebyshev) UCL	0.000341
k star	0.372	99% KM (Chebyshev) UCL	0.000487
Theta star	0.000254		
Nu star	26.81	Potential UCLs to Use	
AppChi2	16	99% KM (Chebyshev) UCL	0.000487
95% Gamma Approximate UCL	0.000158		
95% Adjusted Gamma UCL	0.000162		
Note: DL/2 is not a recommended method.			

Naphthalene

General Statistics			
Number of Valid Data	36	Number of Detected Data	18
Number of Distinct Detected Data	18	Number of Non-Detect Data	18
		Percent Non-Detects	50.00%

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.1	Minimum Detected	0.0953
Maximum Detected	2500	Maximum Detected	7.824
Mean of Detected	330.9	Mean of Detected	3.259
SD of Detected	636.1	SD of Detected	2.659
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	26
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	10
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	72.22%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.595	Shapiro Wilk Test Statistic	0.883
5% Shapiro Wilk Critical Value	0.897	5% Shapiro Wilk Critical Value	0.897
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	168	Mean	2.442
SD	473.1	SD	2.03
95% DL/2 (t) UCL	301.2	95% H-Stat (DL/2) UCL	237.1
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.108
		SD in Log Scale	2.446
		Mean in Original Scale	168.5
		SD in Original Scale	472.9
		95% Percentile Bootstrap UCL	310
		95% BCA Bootstrap UCL	369.3
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.266	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1243		
nu star	9.584		
A-D Test Statistic	1.308	Nonparametric Statistics	
5% A-D Critical Value	0.853	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.853	Mean	166.9
5% K-S Critical Value	0.222	SD	466.9
Data not Gamma Distributed at 5% Significance Level		SE of Mean	80.07
		95% KM (t) UCL	302.1
Assuming Gamma Distribution		95% KM (z) UCL	298.6
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	300.2
Minimum	1.1	95% KM (bootstrap t) UCL	453.7
Maximum	2500	95% KM (BCA) UCL	317.8
Mean	334.1	95% KM (Percentile Bootstrap) UCL	309.1
Median	323.2	95% KM (Chebyshev) UCL	515.9
SD	443.5	97.5% KM (Chebyshev) UCL	666.9
k star	0.476	99% KM (Chebyshev) UCL	963.5
Theta star	701.6		
Nu star	34.29	Potential UCLs to Use	
AppChi2	21.89	99% KM (Chebyshev) UCL	963.5
95% Gamma Approximate UCL	523.2		
95% Adjusted Gamma UCL	534.2		

Note: DL/2 is not a recommended method.

Nickel

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
General Statistics			
Number of Valid Data	36	Number of Detected Data	30
Number of Distinct Detected Data	23	Number of Non-Detect Data	6
		Percent Non-Detects	16.67%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00094	Minimum Detected	-6.97
Maximum Detected	0.112	Maximum Detected	-2.189
Mean of Detected	0.0111	Mean of Detected	-5.348
SD of Detected	0.0225	SD of Detected	1.11
Minimum Non-Detect	0.04	Minimum Non-Detect	-3.219
Maximum Non-Detect	0.05	Maximum Non-Detect	-2.996
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	34
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	94.44%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.456	Shapiro Wilk Test Statistic	0.897
5% Shapiro Wilk Critical Value	0.927	5% Shapiro Wilk Critical Value	0.927
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0131	Mean	-5.084
SD	0.021	SD	1.176
95% DL/2 (t) UCL	0.019	95% H-Stat (DL/2) UCL	0.0301
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.369
		SD in Log Scale	1.041
		Mean in Original Scale	0.01
		SD in Original Scale	0.0207
		95% Percentile Bootstrap UCL	0.0162
		95% BCA Bootstrap UCL	0.0195
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.665	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0166		
nu star	39.91		
A-D Test Statistic	2.993	Nonparametric Statistics	
5% A-D Critical Value	0.791	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.791	Mean	0.0102
5% K-S Critical Value	0.167	SD	0.0205
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00351
		95% KM (t) UCL	0.0161
Assuming Gamma Distribution		95% KM (z) UCL	0.0159
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0161
Minimum	0.00094	95% KM (bootstrap t) UCL	0.0259
Maximum	0.112	95% KM (BCA) UCL	0.0168
Mean	0.011	95% KM (Percentile Bootstrap) UCL	0.0163
Median	0.00487	95% KM (Chebyshev) UCL	0.0254
SD	0.0206	97.5% KM (Chebyshev) UCL	0.0321
k star	0.776	99% KM (Chebyshev) UCL	0.0451
Theta star	0.0142		
Nu star	55.86	Potential UCLs to Use	
AppChi2	39.68	97.5% KM (Chebyshev) UCL	0.0321

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

95% Gamma Approximate UCL	0.0155
95% Adjusted Gamma UCL	0.0157

Note: DL/2 is not a recommended method.

o-Xylene

General Statistics

Number of Valid Data	6	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	5
		Percent Non-Detects	83.33%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, B

The data set for variable o-Xylene was not processed!

Phenanthrene

General Statistics

Number of Valid Data	36	Number of Detected Data	17
Number of Distinct Detected Data	16	Number of Non-Detect Data	19
		Percent Non-Detects	52.78%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.73	Minimum Detected	-0.315
Maximum Detected	13	Maximum Detected	2.565
Mean of Detected	3.824	Mean of Detected	1.025
SD of Detected	3.451	SD of Detected	0.807
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	11	Maximum Non-Detect	2.398

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	35
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.22%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.763	Shapiro Wilk Test Statistic	0.958
5% Shapiro Wilk Critical Value	0.892	5% Shapiro Wilk Critical Value	0.892
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.5	Mean	1.344
SD	2.426	SD	0.626
95% DL/2 (t) UCL	5.184	95% H-Stat (DL/2) UCL	8.252

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.969
		SD in Log Scale	0.713
		Mean in Original Scale	3.398
		SD in Original Scale	2.727
		95% Percentile Bootstrap UCL	4.182
		95% BCA Bootstrap UCL	4.281

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	1.463	Data appear Gamma Distributed at 5% Significance Level
Theta Star	2.614	
nu star	49.75	

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
A-D Test Statistic	0.617	Nonparametric Statistics	
5% A-D Critical Value	0.753	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.753	Mean	3.521
5% K-S Critical Value	0.212	SD	2.951
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.687
		95% KM (t) UCL	4.683
Assuming Gamma Distribution		95% KM (z) UCL	4.652
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	4.699
Minimum	0.73	95% KM (bootstrap t) UCL	5.56
Maximum	13	95% KM (BCA) UCL	4.656
Mean	3.875	95% KM (Percentile Bootstrap) UCL	4.677
Median	3.552	95% KM (Chebyshev) UCL	6.517
SD	2.409	97.5% KM (Chebyshev) UCL	7.813
k star	2.999	99% KM (Chebyshev) UCL	10.36
Theta star	1.292		
Nu star	215.9	Potential UCLs to Use	
AppChi2	182.9	95% KM (t) UCL	4.683
95% Gamma Approximate UCL	4.575		
95% Adjusted Gamma UCL	4.609		

Note: DL/2 is not a recommended method.

Phenol

General Statistics			
Number of Valid Data	36	Number of Detected Data	32
Number of Distinct Detected Data	30	Number of Non-Detect Data	4
		Percent Non-Detects	11.11%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.3	Minimum Detected	0.262
Maximum Detected	100	Maximum Detected	4.605
Mean of Detected	19.48	Mean of Detected	2.131
SD of Detected	30.74	SD of Detected	1.234
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	26
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	10
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	72.22%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.567	Shapiro Wilk Test Statistic	0.923
5% Shapiro Wilk Critical Value	0.93	5% Shapiro Wilk Critical Value	0.93
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	17.88	Mean	2.076
SD	29.29	SD	1.172
95% DL/2 (t) UCL	26.13	95% H-Stat (DL/2) UCL	25.12
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.069
		SD in Log Scale	1.185
		Mean in Original Scale	17.91
		SD in Original Scale	29.29
		95% Percentile Bootstrap UCL	26.16
		95% BCA Bootstrap UCL	28.62

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.672	Data do not follow a Discernable Distribution (0.05)	
Theta Star	29		
nu star	42.99		
A-D Test Statistic	2.206	Nonparametric Statistics	
5% A-D Critical Value	0.791	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.791	Mean	17.9
5% K-S Critical Value	0.162	SD	28.89
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.896
		95% KM (t) UCL	26.17
Assuming Gamma Distribution		95% KM (z) UCL	25.95
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	26.15
Minimum	1E-09	95% KM (bootstrap t) UCL	31.13
Maximum	100	95% KM (BCA) UCL	26.74
Mean	18.51	95% KM (Percentile Bootstrap) UCL	26.13
Median	8.447	95% KM (Chebyshev) UCL	39.24
SD	29.24	97.5% KM (Chebyshev) UCL	48.47
k star	0.443	99% KM (Chebyshev) UCL	66.61
Theta star	41.82		
Nu star	31.86	Potential UCLs to Use	
AppChi2	19.96	97.5% KM (Chebyshev) UCL	48.47
95% Gamma Approximate UCL	29.54		
95% Adjusted Gamma UCL	30.19		

Note: DL/2 is not a recommended method.

Pyrene

General Statistics			
Number of Valid Data	36	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	35
		Percent Non-Detects	97.22%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, B

The data set for variable Pyrene was not processed!

sec-Butylbenzene

General Statistics			
Number of Valid Data	4	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	3
		Percent Non-Detects	75.00%

Warning: This data set only has 4 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable sec-Butylbenzene was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Selenium

General Statistics			
Number of Valid Data	36	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	30
		Percent Non-Detects	83.33%

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0014	Minimum Detected	-6.571
Maximum Detected	0.0076	Maximum Detected	-4.88
Mean of Detected	0.00315	Mean of Detected	-5.912
SD of Detected	0.00223	SD of Detected	0.56
Minimum Non-Detect	0.005	Minimum Non-Detect	-5.298
Maximum Non-Detect	0.01	Maximum Non-Detect	-4.605

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	36
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.697	Shapiro Wilk Test Statistic	0.858
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00297	Mean	-5.874
SD	0.00117	SD	0.314
95% DL/2 (t) UCL	0.0033	95% H-Stat (DL/2) UCL	0.0037
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-6.06
		SD in Log Scale	0.421
		Mean in Original Scale	0.00256
		SD in Original Scale	0.00123
		95% Percentile Bootstrap UCL	0.00291
		95% BCA Bootstrap UCL	0.00299
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.838	Data appear Lognormal at 5% Significance Level	
Theta Star	0.00171		
nu star	22.06		
A-D Test Statistic	0.703	Nonparametric Statistics	
5% A-D Critical Value	0.701	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.701	Mean	0.00244
5% K-S Critical Value	0.334	SD	0.00106
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.000294
		95% KM (t) UCL	0.00294
Assuming Gamma Distribution		95% KM (z) UCL	0.00292
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00296
Minimum	0.00127	95% KM (bootstrap t) UCL	0.00296
Maximum	0.0076	95% KM (BCA) UCL	0.00293
Mean	0.00286	95% KM (Percentile Bootstrap) UCL	0.00294
Median	0.00256	95% KM (Chebyshev) UCL	0.00372
SD	0.00127	97.5% KM (Chebyshev) UCL	0.00428
k star	5.661	99% KM (Chebyshev) UCL	0.00537
Theta star	0.000505		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Nu star	407.6	Potential UCLs to Use	
AppChi2	361.8	95% KM (t) UCL	0.00294
95% Gamma Approximate UCL	0.00322	95% KM (% Bootstrap) UCL	0.00294
95% Adjusted Gamma UCL	0.00324		

Note: DL/2 is not a recommended method.

Sodium

General Statistics			
Number of Valid Observations	36	Number of Distinct Observations	29
Raw Statistics		Log-transformed Statistics	
Minimum	12	Minimum of Log Data	2.485
Maximum	1090	Maximum of Log Data	6.994
Mean	320.9	Mean of log Data	5.311
Median	240	SD of log Data	1.131
SD	266.4		
Coefficient of Variation	0.83		
Skewness	1.044		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.902	Shapiro Wilk Test Statistic	0.93
Shapiro Wilk Critical Value	0.935	Shapiro Wilk Critical Value	0.935
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	395.9	95% H-UCL	622.9
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	739.2
95% Adjusted-CLT UCL	402.2	97.5% Chebyshev (MVUE) UCL	897.5
95% Modified-t UCL	397.2	99% Chebyshev (MVUE) UCL	1209
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.142	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	281		
MLE of Mean	320.9		
MLE of Standard Deviation	300.3		
nu star	82.21		
Approximate Chi Square Value (.05)	62.32	Nonparametric Statistics	
Adjusted Level of Significance	0.0428	95% CLT UCL	394
Adjusted Chi Square Value	61.53	95% Jackknife UCL	395.9
		95% Standard Bootstrap UCL	394.4
Anderson-Darling Test Statistic	0.28	95% Bootstrap-t UCL	409.2
Anderson-Darling 5% Critical Value	0.772	95% Hall's Bootstrap UCL	402.9
Kolmogorov-Smirnov Test Statistic	0.0994	95% Percentile Bootstrap UCL	396.4
Kolmogorov-Smirnov 5% Critical Value	0.15	95% BCA Bootstrap UCL	401.2
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	514.5
		97.5% Chebyshev(Mean, Sd) UCL	598.2
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	762.7
95% Approximate Gamma UCL	423.4		
95% Adjusted Gamma UCL	428.8		
Potential UCL to Use		Use 95% Approximate Gamma UCL	423.4

Toluene

General Statistics			
Number of Valid Data	36	Number of Detected Data	19

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Distinct Detected Data	18	Number of Non-Detect Data	17
		Percent Non-Detects	47.22%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.11	Minimum Detected	-2.207
Maximum Detected	1600	Maximum Detected	7.378
Mean of Detected	90.16	Mean of Detected	0.563
SD of Detected	365.8	SD of Detected	2.483
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	60	Maximum Non-Detect	4.094
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	35
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.22%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.263	Shapiro Wilk Test Statistic	0.89
5% Shapiro Wilk Critical Value	0.901	5% Shapiro Wilk Critical Value	0.901
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	48.72	Mean	-0.0133
SD	266.1	SD	2.102
95% DL/2 (t) UCL	123.7	95% H-Stat (DL/2) UCL	31.41
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.385
		SD in Log Scale	2.235
		Mean in Original Scale	47.79
		SD in Original Scale	266.2
		95% Percentile Bootstrap UCL	135.8
		95% BCA Bootstrap UCL	184.2
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.194	Data do not follow a Discernable Distribution (0.05)	
Theta Star	465		
nu star	7.368		
A-D Test Statistic	3.019	Nonparametric Statistics	
5% A-D Critical Value	0.892	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.892	Mean	47.83
5% K-S Critical Value	0.22	SD	262.5
Data not Gamma Distributed at 5% Significance Level		SE of Mean	44.95
		95% KM (t) UCL	123.8
Assuming Gamma Distribution		95% KM (z) UCL	121.8
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	122.8
Minimum	1E-09	95% KM (bootstrap t) UCL	2166
Maximum	1600	95% KM (BCA) UCL	136.8
Mean	126.9	95% KM (Percentile Bootstrap) UCL	136.1
Median	1.6	95% KM (Chebyshev) UCL	243.8
SD	323.6	97.5% KM (Chebyshev) UCL	328.5
k star	0.12	99% KM (Chebyshev) UCL	495.1
Theta star	1054		
Nu star	8.673	Potential UCLs to Use	
AppChi2	3.131	99% KM (Chebyshev) UCL	495.1
95% Gamma Approximate UCL	351.6		
95% Adjusted Gamma UCL	369.3		
Note: DL/2 is not a recommended method.			

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Vanadium

General Statistics			
Number of Valid Data	36	Number of Detected Data	16
Number of Distinct Detected Data	14	Number of Non-Detect Data	20
		Percent Non-Detects	55.56%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00066	Minimum Detected	-7.323
Maximum Detected	0.0359	Maximum Detected	-3.327
Mean of Detected	0.00563	Mean of Detected	-5.852
SD of Detected	0.00917	SD of Detected	1.055
Minimum Non-Detect	0.0007	Minimum Non-Detect	-7.264
Maximum Non-Detect	0.25	Maximum Non-Detect	-1.386
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	36
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.545	Shapiro Wilk Test Statistic	0.919
5% Shapiro Wilk Critical Value	0.887	5% Shapiro Wilk Critical Value	0.887
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0185	Mean	-4.724
SD	0.0216	SD	1.452
95% DL/2 (t) UCL	0.0246	95% H-Stat (DL/2) UCL	0.115
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.962
		SD in Log Scale	1.059
		Mean in Original Scale	0.00471
		SD in Original Scale	0.00687
		95% Percentile Bootstrap UCL	0.0067
		95% BCA Bootstrap UCL	0.00715
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.751	Data appear Lognormal at 5% Significance Level	
Theta Star	0.0075		
nu star	24.03		
A-D Test Statistic	1.34	Nonparametric Statistics	
5% A-D Critical Value	0.769	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.769	Mean	0.00534
5% K-S Critical Value	0.222	SD	0.00869
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00218
		95% KM (t) UCL	0.00902
Assuming Gamma Distribution		95% KM (z) UCL	0.00892
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00906
Minimum	1E-09	95% KM (bootstrap t) UCL	0.0237
Maximum	0.0359	95% KM (BCA) UCL	0.00989
Mean	0.00607	95% KM (Percentile Bootstrap) UCL	0.0091
Median	0.0031	95% KM (Chebyshev) UCL	0.0148
SD	0.00756	97.5% KM (Chebyshev) UCL	0.0189
k star	0.273	99% KM (Chebyshev) UCL	0.027
Theta star	0.0222		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Nu star	19.65	Potential UCLs to Use	
AppChi2	10.6	95% KM (BCA) UCL	0.00989
95% Gamma Approximate UCL	0.0113		
95% Adjusted Gamma UCL	0.0116		

Note: DL/2 is not a recommended method.

Xylenes (total)

General Statistics			
Number of Valid Data	34	Number of Detected Data	17
Number of Distinct Detected Data	15	Number of Non-Detect Data	17
		Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.1	Minimum Detected	-2.303
Maximum Detected	1500	Maximum Detected	7.313
Mean of Detected	108.8	Mean of Detected	1.122
SD of Detected	360.4	SD of Detected	3.067
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	5	Maximum Non-Detect	1.609
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	27
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	7
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	79.41%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.33	Shapiro Wilk Test Statistic	0.897
5% Shapiro Wilk Critical Value	0.892	5% Shapiro Wilk Critical Value	0.892
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	54.68	Mean	0.00306
SD	256.9	SD	2.476
95% DL/2 (t) UCL	129.2	95% H-Stat (DL/2) UCL	48.3
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.296
		SD in Log Scale	2.873
		Mean in Original Scale	54.69
		SD in Original Scale	256.9
		95% Percentile Bootstrap UCL	141.7
		95% BCA Bootstrap UCL	187.8
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.208	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	522.4		
nu star	7.084		
A-D Test Statistic	1.353	Nonparametric Statistics	
5% A-D Critical Value	0.88	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.88	Mean	54.52
5% K-S Critical Value	0.231	SD	253.1
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	44.75
		95% KM (t) UCL	130.2
Assuming Gamma Distribution		95% KM (z) UCL	128.1
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	129.1
Minimum	0.1	95% KM (bootstrap t) UCL	802.6
Maximum	1500	95% KM (BCA) UCL	144.1

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Mean	114.9	95% KM (Percentile Bootstrap) UCL	140.3
Median	98.65	95% KM (Chebyshev) UCL	249.6
SD	252	97.5% KM (Chebyshev) UCL	334
k star	0.357	99% KM (Chebyshev) UCL	499.7
Theta star	321.8		
Nu star	24.29	Potential UCLs to Use	
AppChi2	14.07	95% KM (t) UCL	130.2
95% Gamma Approximate UCL	198.4		
95% Adjusted Gamma UCL	204		

Note: DL/2 is not a recommended method.

Xylenes, m & p

General Statistics			
Number of Valid Data	6	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	3
		Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.53	Minimum Detected	-0.635
Maximum Detected	1100	Maximum Detected	7.003
Mean of Detected	379.5	Mean of Detected	3.335
SD of Detected	624.2	SD of Detected	3.828
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	5	Maximum Non-Detect	1.609
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	4
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	66.67%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.776	Shapiro Wilk Test Statistic	0.995
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	190.7	Mean	1.858
SD	445.7	SD	2.971
95% DL/2 (t) UCL	557.3	95% H-Stat (DL/2) UCL	2.59E+08
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.21
		SD in Log Scale	3.47
		Mean in Original Scale	190.1
		SD in Original Scale	446
		95% Percentile Bootstrap UCL	550.2
		95% BCA Bootstrap UCL	733.5

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	190
5% K-S Critical Value	N/A	SD	407.2
Data not Gamma Distributed at 5% Significance Level		SE of Mean	203.6
		95% KM (t) UCL	600.3
Assuming Gamma Distribution		95% KM (z) UCL	524.9
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	547.9
Minimum	N/A	95% KM (bootstrap t) UCL	5857
Maximum	N/A	95% KM (BCA) UCL	1100
Mean	N/A	95% KM (Percentile Bootstrap) UCL	1100
Median	N/A	95% KM (Chebyshev) UCL	1077
SD	N/A	97.5% KM (Chebyshev) UCL	1461
k star	N/A	99% KM (Chebyshev) UCL	2216
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	600.3
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	1100
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Zinc

General Statistics			
Number of Valid Data	36	Number of Detected Data	19
Number of Distinct Detected Data	19	Number of Non-Detect Data	17
		Percent Non-Detects	47.22%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0041	Minimum Detected	-5.497
Maximum Detected	0.21	Maximum Detected	-1.561
Mean of Detected	0.0301	Mean of Detected	-4.251
SD of Detected	0.0498	SD of Detected	1.117
Minimum Non-Detect	0.007	Minimum Non-Detect	-4.962
Maximum Non-Detect	0.05	Maximum Non-Detect	-2.996
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	33
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	91.67%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.561	Shapiro Wilk Test Statistic	0.859
5% Shapiro Wilk Critical Value	0.901	5% Shapiro Wilk Critical Value	0.901
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.019	Mean	-4.672
SD	0.0378	SD	0.969
95% DL/2 (t) UCL	0.0297	95% H-Stat (DL/2) UCL	0.0229
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	

Electronic Appendix F6, Table 4
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Site Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MLE yields a negative mean		Mean in Log Scale	-4.592
		SD in Log Scale	0.969
		Mean in Original Scale	0.0197
		SD in Original Scale	0.0375
		95% Percentile Bootstrap UCL	0.0305
		95% BCA Bootstrap UCL	0.0368
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.704	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0427		
nu star	26.75		
A-D Test Statistic	1.813	Nonparametric Statistics	
5% A-D Critical Value	0.777	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.777	Mean	0.0192
5% K-S Critical Value	0.206	SD	0.0371
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00636
		95% KM (t) UCL	0.0299
Assuming Gamma Distribution		95% KM (z) UCL	0.0297
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0298
Minimum	0.0041	95% KM (bootstrap t) UCL	0.0453
Maximum	0.21	95% KM (BCA) UCL	0.0326
Mean	0.0299	95% KM (Percentile Bootstrap) UCL	0.0305
Median	0.0284	95% KM (Chebyshev) UCL	0.0469
SD	0.0357	97.5% KM (Chebyshev) UCL	0.0589
k star	1.309	99% KM (Chebyshev) UCL	0.0825
Theta star	0.0228		
Nu star	94.22	Potential UCLs to Use	
AppChi2	72.84	97.5% KM (Chebyshev) UCL	0.0589
95% Gamma Approximate UCL	0.0386		
95% Adjusted Gamma UCL	0.0391		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatio	2000

2,4-Dimethylphenol

General Statistics

Number of Valid Data	15	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	12
		Percent Non-Detects	80.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.2	Minimum Detected	0.788
Maximum Detected	3.4	Maximum Detected	1.224
Mean of Detected	2.867	Mean of Detected	1.037
SD of Detected	0.611	SD of Detected	0.224
Minimum Non-Detect	9.8	Minimum Non-Detect	2.282
Maximum Non-Detect	11	Maximum Non-Detect	2.398

Note: Data have multiple DLs - Use of KM Method is recomm	Number treated as Non-Detect	15
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.964	Shapiro Wilk Test Statistic	0.943
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.667	Mean	1.513
SD	0.982	SD	0.263
95% DL/2 (t) UCL	5.113	95% H-Stat (DL/2) UCL	7.521

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.037
		SD in Log Scale	0.219
		Mean in Original Scale	2.884
		SD in Original Scale	0.627
		95% Percentile Bootstrap UCL	3.152
		95% BCA Bootstrap UCL	3.164

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	2.867
5% K-S Critical Value	N/A	SD	0.499
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.353
		95% KM (t) UCL	3.488
Assuming Gamma Distribution		95% KM (z) UCL	3.447
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	3.602
Minimum	N/A	95% KM (bootstrap t) UCL	3.69
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	3.4
Median	N/A	95% KM (Chebyshev) UCL	4.404
SD	N/A	97.5% KM (Chebyshev) UCL	5.07
k star	N/A	99% KM (Chebyshev) UCL	6.377
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	3.488
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	3.4
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

2-Methylphenol

General Statistics			
Number of Valid Data	15	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	10
		Percent Non-Detects	66.67%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	3.4	Minimum Detected	1.224
Maximum Detected	41	Maximum Detected	3.714
Mean of Detected	19.8	Mean of Detected	2.575
SD of Detected	16.09	SD of Detected	1.126
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	12
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	80.00%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatio	2000

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.921	Shapiro Wilk Test Statistic	0.869
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	10.03	Mean	1.95
SD	11.18	SD	0.757
95% DL/2 (t) UCL	15.12	95% H-Stat (DL/2) UCL	10.79
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	1.797
		SD in Log Scale	0.994
		Mean in Original Scale	9.912
		SD in Original Scale	11.51
		95% Percentile Bootstrap UCL	15.1
		95% BCA Bootstrap UCL	16.44
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.677	Data appear Normal at 5% Significance Level	
Theta Star	29.23		
nu star	6.774		
A-D Test Statistic	0.4	Nonparametric Statistics	
5% A-D Critical Value	0.688	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.688	Mean	9.267
5% K-S Critical Value	0.362	SD	11.17
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	3.243
		95% KM (t) UCL	14.98
Assuming Gamma Distribution		95% KM (z) UCL	14.6
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	14.64
Minimum	1E-09	95% KM (bootstrap t) UCL	15.67
Maximum	41	95% KM (BCA) UCL	29
Mean	16.09	95% KM (Percentile Bootstrap) UCL	24.2
Median	15.14	95% KM (Chebyshev) UCL	23.4
SD	11.68	97.5% KM (Chebyshev) UCL	29.52
k star	0.348	99% KM (Chebyshev) UCL	41.53
Theta star	46.26		
Nu star	10.43	Potential UCLs to Use	
AppChi2	4.214	95% KM (t) UCL	14.98
95% Gamma Approximate UCL	39.83	95% KM (Percentile Bootstrap) UCL	24.2
95% Adjusted Gamma UCL	44.88		

Note: DL/2 is not a recommended method.

Acenaphthylene

General Statistics

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		

Number of Valid Data	15	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	14
		Percent Non-Detects	93.33%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data se
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters

The data set for variable Acenaphthylene was not processed!

Aluminum

General Statistics

Number of Valid Data	15	Number of Detected Data	14
Number of Distinct Detected Data	14	Number of Non-Detect Data	1
		Percent Non-Detects	6.67%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.018	Minimum Detected	-4.017
Maximum Detected	26.4	Maximum Detected	3.273
Mean of Detected	2.482	Mean of Detected	-0.71
SD of Detected	6.905	SD of Detected	1.748
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	0.5	Maximum Non-Detect	-0.693

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.364	Shapiro Wilk Test Statistic	0.947
5% Shapiro Wilk Critical Value	0.874	5% Shapiro Wilk Critical Value	0.874
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.334	Mean	-0.755
SD	6.679	SD	1.693
95% DL/2 (t) UCL	5.371	95% H-Stat (DL/2) UCL	7.819

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.807
		SD in Log Scale	1.726
		Mean in Original Scale	2.325
		SD in Original Scale	6.682
		95% Percentile Bootstrap UCL	5.777
		95% BCA Bootstrap UCL	7.548

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.366	Data appear Lognormal at 5% Significance Level
Theta Star	6.779	
nu star	10.25	

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		

A-D Test Statistic	1.385	Nonparametric Statistics	
5% A-D Critical Value	0.812	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.812	Mean	2.33
5% K-S Critical Value	0.245	SD	6.454
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.729
		95% KM (t) UCL	5.376
Assuming Gamma Distribution		95% KM (z) UCL	5.174
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	5.368
Minimum	1E-09	95% KM (bootstrap t) UCL	34.16
Maximum	26.4	95% KM (BCA) UCL	5.832
Mean	2.317	95% KM (Percentile Bootstrap) UCL	5.736
Median	0.576	95% KM (Chebyshev) UCL	9.868
SD	6.685	97.5% KM (Chebyshev) UCL	13.13
k star	0.242	99% KM (Chebyshev) UCL	19.54
Theta star	9.58		
Nu star	7.256	Potential UCLs to Use	
AppChi2	2.312	99% KM (Chebyshev) UCL	19.54
95% Gamma Approximate UCL	7.271		
95% Adjusted Gamma UCL	8.475		

Note: DL/2 is not a recommended method.

Arsenic

General Statistics			
Number of Valid Data	15	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	12
		Percent Non-Detects	80.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.002	Minimum Detected	-6.215
Maximum Detected	0.506	Maximum Detected	-0.681
Mean of Detected	0.171	Mean of Detected	-4.093
SD of Detected	0.29	SD of Detected	2.983
Minimum Non-Detect	0.005	Minimum Non-Detect	-5.298
Maximum Non-Detect	0.025	Maximum Non-Detect	-3.689

Note: Data have multiple DLs - Use of KM Method is recomm	Number treated as Non-Detect	14
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	1
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	93.33%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatio	2000

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.754	Shapiro Wilk Test Statistic	0.86
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0372	Mean	-5.412
SD	0.13	SD	1.392
95% DL/2 (t) UCL	0.0962	95% H-Stat (DL/2) UCL	0.0307
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.389
		SD in Log Scale	1.954
		Mean in Original Scale	0.0416
		SD in Original Scale	0.129
		95% Percentile Bootstrap UCL	0.107
		95% BCA Bootstrap UCL	0.143
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Lognormal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.0368
5% K-S Critical Value	N/A	SD	0.125
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0397
		95% KM (t) UCL	0.107
Assuming Gamma Distribution		95% KM (z) UCL	0.102
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0959
Minimum	N/A	95% KM (bootstrap t) UCL	2.14
Maximum	N/A	95% KM (BCA) UCL	0.506
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.506
Median	N/A	95% KM (Chebyshev) UCL	0.21
SD	N/A	97.5% KM (Chebyshev) UCL	0.285
k star	N/A	99% KM (Chebyshev) UCL	0.431
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	99% KM (Chebyshev) UCL	0.431
95% Gamma Approximate UCL	N/A		
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Barium

General Statistics

Number of Valid Observations	15	Number of Distinct Observations	15

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		

Raw Statistics		Log-transformed Statistics	
Minimum	0.021	Minimum of Log Data	-3.863
Maximum	1.73	Maximum of Log Data	0.548
Mean	0.36	Mean of log Data	-1.59
Median	0.225	SD of log Data	1.13
SD	0.45		
Coefficient of Variation	1.251		
Skewness	2.416		

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.675	Shapiro Wilk Test Statistic	0.963
Shapiro Wilk Critical Value	0.881	Shapiro Wilk Critical Value	0.881
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.564	95% H-UCL	0.944
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.874
95% Adjusted-CLT UCL	0.628	97.5% Chebyshev (MVUE) UCL	1.095
95% Modified-t UCL	0.576	99% Chebyshev (MVUE) UCL	1.53
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.857	Data Follow Appr. Gamma Distribution at 5% Significance Le	
Theta Star	0.42		
MLE of Mean	0.36		
MLE of Standard Deviation	0.389		
nu star	25.7		
Approximate Chi Square Value (.05)	15.15	Nonparametric Statistics	
Adjusted Level of Significance	0.0324	95% CLT UCL	0.551
Adjusted Chi Square Value	14.16	95% Jackknife UCL	0.564
		95% Standard Bootstrap UCL	0.546
Anderson-Darling Test Statistic	0.598	95% Bootstrap-t UCL	0.839
Anderson-Darling 5% Critical Value	0.763	95% Hall's Bootstrap UCL	1.301
Kolmogorov-Smirnov Test Statistic	0.233	95% Percentile Bootstrap UCL	0.55
Kolmogorov-Smirnov 5% Critical Value	0.228	95% BCA Bootstrap UCL	0.641
Data follow Appr. Gamma Distribution at 5% Significance Lev		95% Chebyshev(Mean, Sd) UCL	0.866
		97.5% Chebyshev(Mean, Sd) UCL	1.085
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.516
95% Approximate Gamma UCL	0.61		
95% Adjusted Gamma UCL	0.653		
Potential UCL to Use		Use 95% Approximate Gamma UCL	0.61

Benzene

General Statistics			
Number of Valid Data	15	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	8

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
		Percent Non-Detects	53.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.1	Minimum Detected	-2.303
Maximum Detected	59	Maximum Detected	4.078
Mean of Detected	11.81	Mean of Detected	0.947
SD of Detected	21.23	SD of Detected	2.144
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	5	Maximum Non-Detect	1.609
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	12
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	80.00%

Warning: There are only 7 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.617	Shapiro Wilk Test Statistic	0.98
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	5.797	Mean	-0.144
SD	15.08	SD	1.848
95% DL/2 (t) UCL	12.65	95% H-Stat (DL/2) UCL	33.31
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.511
		SD in Log Scale	2.196
		Mean in Original Scale	5.672
		SD in Original Scale	15.12
		95% Percentile Bootstrap UCL	12.72
		95% BCA Bootstrap UCL	17.84
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.34	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	34.79		
nu star	4.754		
A-D Test Statistic	0.308	Nonparametric Statistics	
5% A-D Critical Value	0.763	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.763	Mean	5.666
5% K-S Critical Value	0.33	SD	14.61

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	4.075
		95% KM (t) UCL	12.84
Assuming Gamma Distribution		95% KM (z) UCL	12.37
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	12.55
Minimum	0.1	95% KM (bootstrap t) UCL	37.25
Maximum	60.51	95% KM (BCA) UCL	14.58
Mean	16.92	95% KM (Percentile Bootstrap) UCL	13.12
Median	8.5	95% KM (Chebyshev) UCL	23.43
SD	20.48	97.5% KM (Chebyshev) UCL	31.11
k star	0.528	99% KM (Chebyshev) UCL	46.21
Theta star	32.01		
Nu star	15.85	Potential UCLs to Use	
AppChi2	7.86	95% KM (t) UCL	12.84
95% Gamma Approximate UCL	34.12		
95% Adjusted Gamma UCL	37.38		

Note: DL/2 is not a recommended method.

bis(2-Ethylhexyl)phthalate

General Statistics			
Number of Valid Data	15	Number of Detected Data	4
Number of Distinct Detected Data	3	Number of Non-Detect Data	11
		Percent Non-Detects	73.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.1	Minimum Detected	0.0953
Maximum Detected	3.3	Maximum Detected	1.194
Mean of Detected	1.75	Mean of Detected	0.448
SD of Detected	1.05	SD of Detected	0.519
Minimum Non-Detect	9.8	Minimum Non-Detect	2.282
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	15
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.753	Shapiro Wilk Test Statistic	0.807
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.193	Mean	1.311
SD	1.61	SD	0.591
95% DL/2 (t) UCL	4.926	95% H-Stat (DL/2) UCL	14.05
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.448
		SD in Log Scale	0.454
		Mean in Original Scale	1.726
		SD in Original Scale	0.828
		95% Percentile Bootstrap UCL	2.074
		95% BCA Bootstrap UCL	2.142
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.322	Data appear Normal at 5% Significance Level	
Theta Star	1.324		
nu star	10.57		
A-D Test Statistic	0.575	Nonparametric Statistics	
5% A-D Critical Value	0.659	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.659	Mean	1.75
5% K-S Critical Value	0.396	SD	0.91
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.525
		95% KM (t) UCL	2.675
Assuming Gamma Distribution		95% KM (z) UCL	2.614
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.782
Minimum	0.312	95% KM (bootstrap t) UCL	6.162
Maximum	3.3	95% KM (BCA) UCL	2.7
Mean	1.748	95% KM (Percentile Bootstrap) UCL	2.75
Median	1.595	95% KM (Chebyshev) UCL	4.039
SD	0.852	97.5% KM (Chebyshev) UCL	5.03
k star	3.004	99% KM (Chebyshev) UCL	6.976
Theta star	0.582		
Nu star	90.12	Potential UCLs to Use	
AppChi2	69.23	95% KM (t) UCL	2.675
95% Gamma Approximate UCL	2.275	95% KM (Percentile Bootstrap) UCL	2.75
95% Adjusted Gamma UCL	N/A		
Note: DL/2 is not a recommended method.			

Bromomethane

General Statistics			
Number of Valid Data	15	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	14
		Percent Non-Detects	93.33%

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatio	2000

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data se
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters

The data set for variable Bromomethane was not processed!

Cadmium

General Statistics			
Number of Valid Data	15	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	14
		Percent Non-Detects	93.33%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data se
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters

The data set for variable Cadmium was not processed!

Calcium

General Statistics			
Number of Valid Observations	15	Number of Distinct Observations	14
Raw Statistics		Log-transformed Statistics	
Minimum	32	Minimum of Log Data	3.466
Maximum	3700	Maximum of Log Data	8.216
Mean	822.8	Mean of log Data	6.048
Median	500	SD of log Data	1.297
SD	1008		
Coefficient of Variation	1.225		
Skewness	2.077		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.727	Shapiro Wilk Test Statistic	0.967
Shapiro Wilk Critical Value	0.881	Shapiro Wilk Critical Value	0.881
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1281	95% H-UCL	3019
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	2367
95% Adjusted-CLT UCL	1400	97.5% Chebyshev (MVUE) UCL	3004
95% Modified-t UCL	1304	99% Chebyshev (MVUE) UCL	4254
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.75	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	1098		
MLE of Mean	822.8		
MLE of Standard Deviation	950.3		
nu star	22.49		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Approximate Chi Square Value (.05)	12.71	Nonparametric Statistics	
Adjusted Level of Significance	0.0324	95% CLT UCL	1251
Adjusted Chi Square Value	11.81	95% Jackknife UCL	1281
		95% Standard Bootstrap UCL	1222
Anderson-Darling Test Statistic	0.347	95% Bootstrap-t UCL	1797
Anderson-Darling 5% Critical Value	0.769	95% Hall's Bootstrap UCL	2737
Kolmogorov-Smirnov Test Statistic	0.185	95% Percentile Bootstrap UCL	1272
Kolmogorov-Smirnov 5% Critical Value	0.229	95% BCA Bootstrap UCL	1386
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1957
		97.5% Chebyshev(Mean, Sd) UCL	2448
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	3412
95% Approximate Gamma UCL	1456		
95% Adjusted Gamma UCL	1567		
Potential UCL to Use		Use 95% Approximate Gamma UCL	1456

Cobalt

General Statistics			
Number of Valid Data	15	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	14
		Percent Non-Detects	93.33%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data se
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters

The data set for variable Cobalt was not processed!

Copper

General Statistics			
Number of Valid Data	15	Number of Detected Data	10
Number of Distinct Detected Data	9	Number of Non-Detect Data	5
		Percent Non-Detects	33.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0019	Minimum Detected	-6.266
Maximum Detected	0.0506	Maximum Detected	-2.984
Mean of Detected	0.0108	Mean of Detected	-5.198
SD of Detected	0.0156	SD of Detected	1.111
Minimum Non-Detect	0.01	Minimum Non-Detect	-4.605
Maximum Non-Detect	0.05	Maximum Non-Detect	-2.996
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	14
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	93.33%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.632	Shapiro Wilk Test Statistic	0.87

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
5% Shapiro Wilk Critical Value	0.842	5% Shapiro Wilk Critical Value	0.842
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0108	Mean	-5.031
SD	0.0133	SD	0.989
95% DL/2 (t) UCL	0.0169	95% H-Stat (DL/2) UCL	0.0353
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.309
		SD in Log Scale	0.933
		Mean in Original Scale	0.00858
		SD in Original Scale	0.0129
		95% Percentile Bootstrap UCL	0.0146
		95% BCA Bootstrap UCL	0.0175
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.684	Data Follow Appr. Gamma Distribution at 5% Significance Le	
Theta Star	0.0157		
nu star	13.68		
A-D Test Statistic	0.909	Nonparametric Statistics	
5% A-D Critical Value	0.752	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.752	Mean	0.0086
5% K-S Critical Value	0.275	SD	0.0126
Data follow Appr. Gamma Distribution at 5% Significance Lev		SE of Mean	0.00348
		95% KM (t) UCL	0.0147
Assuming Gamma Distribution		95% KM (z) UCL	0.0143
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0146
Minimum	0.0019	95% KM (bootstrap t) UCL	0.0313
Maximum	0.0506	95% KM (BCA) UCL	0.0148
Mean	0.0107	95% KM (Percentile Bootstrap) UCL	0.0147
Median	0.0077	95% KM (Chebyshev) UCL	0.0238
SD	0.0126	97.5% KM (Chebyshev) UCL	0.0303
k star	1.048	99% KM (Chebyshev) UCL	0.0432
Theta star	0.0102		
Nu star	31.43	Potential UCLs to Use	
AppChi2	19.62	95% KM (BCA) UCL	0.0148
95% Gamma Approximate UCL	0.0172		
95% Adjusted Gamma UCL	0.0182		
Note: DL/2 is not a recommended method.			

Cyanide, Total

General Statistics			
Number of Valid Data	15	Number of Detected Data	9
Number of Distinct Detected Data	7	Number of Non-Detect Data	6
		Percent Non-Detects	40.00%

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatio	2000

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0035	Minimum Detected	-5.655
Maximum Detected	0.011	Maximum Detected	-4.51
Mean of Detected	0.00764	Mean of Detected	-4.955
SD of Detected	0.00297	SD of Detected	0.448
Minimum Non-Detect	0.007	Minimum Non-Detect	-4.962
Maximum Non-Detect	0.01	Maximum Non-Detect	-4.605

Note: Data have multiple DLs - Use of KM Method is recomm	Number treated as Non-Detect	11
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	4
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	73.33%

Warning: There are only 9 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.843	Shapiro Wilk Test Statistic	0.832
5% Shapiro Wilk Critical Value	0.829	5% Shapiro Wilk Critical Value	0.829
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00649	Mean	-5.116
SD	0.00271	SD	0.405
95% DL/2 (t) UCL	0.00772	95% H-Stat (DL/2) UCL	0.00905
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	0.00958	Mean in Log Scale	-5.089
SD	0.0006	SD in Log Scale	0.404
95% MLE (t) UCL	0.00985	Mean in Original Scale	0.00665
95% MLE (Tiku) UCL	0.0101	SD in Original Scale	0.00267
		95% Percentile Bootstrap UCL	0.00776
		95% BCA Bootstrap UCL	0.00786
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	4.276	Data appear Normal at 5% Significance Level	
Theta Star	0.00179		
nu star	76.97		
A-D Test Statistic	0.773	Nonparametric Statistics	
5% A-D Critical Value	0.722	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.722	Mean	0.0067
5% K-S Critical Value	0.28	SD	0.00273
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00087

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
		95% KM (t) UCL	0.00823
Assuming Gamma Distribution		95% KM (z) UCL	0.00813
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00829
Minimum	0.0035	95% KM (bootstrap t) UCL	0.00844
Maximum	0.011	95% KM (BCA) UCL	0.00823
Mean	0.0077	95% KM (Percentile Bootstrap) UCL	0.00818
Median	0.00791	95% KM (Chebyshev) UCL	0.0105
SD	0.00229	97.5% KM (Chebyshev) UCL	0.0121
k star	8.124	99% KM (Chebyshev) UCL	0.0154
Theta star	0.00095		
Nu star	243.7	Potential UCLs to Use	
AppChi2	208.6	95% KM (t) UCL	0.00823
95% Gamma Approximate UCL	0.00899	95% KM (Percentile Bootstrap) UCL	0.00818
95% Adjusted Gamma UCL	0.00917		

Note: DL/2 is not a recommended method.

delta-BHC

General Statistics

Number of Valid Data	14	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	13
		Percent Non-Detects	92.86%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data se
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters

The data set for variable delta-BHC was not processed!

Dieldrin

General Statistics

Number of Valid Data	14	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	13
		Percent Non-Detects	92.86%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data se
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters

The data set for variable Dieldrin was not processed!

Dibenzofuran

General Statistics

Number of Valid Data	15	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	13
		Percent Non-Detects	86.67%

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatio	2000

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.9	Minimum Detected	0.642
Maximum Detected	4	Maximum Detected	1.386
Mean of Detected	2.95	Mean of Detected	1.014
SD of Detected	1.485	SD of Detected	0.526
Minimum Non-Detect	9.8	Minimum Non-Detect	2.282
Maximum Non-Detect	11	Maximum Non-Detect	2.398

Note: Data have multiple DLs - Use of KM Method is recomm	Number treated as Non-Detect	15
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.853	Mean	1.554
SD	0.898	SD	0.264
95% DL/2 (t) UCL	5.262	95% H-Stat (DL/2) UCL	6.935
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	2.95
5% K-S Critical Value	N/A	SD	1.05
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.05
		95% KM (t) UCL	4.799
Assuming Gamma Distribution		95% KM (z) UCL	4.677
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	5.477
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	4
Mean	N/A	95% KM (Percentile Bootstrap) UCL	4
Median	N/A	95% KM (Chebyshev) UCL	7.527
SD	N/A	97.5% KM (Chebyshev) UCL	9.507
k star	N/A	99% KM (Chebyshev) UCL	13.4
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	4.799
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	4
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Iron

General Statistics			
Number of Valid Data	15	Number of Detected Data	14
Number of Distinct Detected Data	14	Number of Non-Detect Data	1
		Percent Non-Detects	6.67%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.049	Minimum Detected	-3.016
Maximum Detected	15.9	Maximum Detected	2.766
Mean of Detected	3.087	Mean of Detected	-0.0145
SD of Detected	5.324	SD of Detected	1.598
Minimum Non-Detect	0.25	Minimum Non-Detect	-1.386
Maximum Non-Detect	0.25	Maximum Non-Detect	-1.386

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.571	Shapiro Wilk Test Statistic	0.962
5% Shapiro Wilk Critical Value	0.874	5% Shapiro Wilk Critical Value	0.874
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.889	Mean	-0.152

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
SD	5.187	SD	1.63
95% DL/2 (t) UCL	5.248	95% H-Stat (DL/2) UCL	15.64
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	2.113	Mean in Log Scale	-0.181
SD	5.82	SD in Log Scale	1.67
95% MLE (t) UCL	4.76	Mean in Original Scale	2.886
95% MLE (Tiku) UCL	4.71	SD in Original Scale	5.189
		95% Percentile Bootstrap UCL	5.075
		95% BCA Bootstrap UCL	5.958
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.479	Data appear Lognormal at 5% Significance Level	
Theta Star	6.449		
nu star	13.4		
A-D Test Statistic	0.878	Nonparametric Statistics	
5% A-D Critical Value	0.789	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.789	Mean	2.887
5% K-S Critical Value	0.241	SD	5.013
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.343
		95% KM (t) UCL	5.252
Assuming Gamma Distribution		95% KM (z) UCL	5.096
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	5.246
Minimum	1E-09	95% KM (bootstrap t) UCL	13.58
Maximum	15.9	95% KM (BCA) UCL	5.105
Mean	2.881	95% KM (Percentile Bootstrap) UCL	5.179
Median	0.84	95% KM (Chebyshev) UCL	8.741
SD	5.192	97.5% KM (Chebyshev) UCL	11.27
k star	0.271	99% KM (Chebyshev) UCL	16.25
Theta star	10.62		
Nu star	8.141	Potential UCLs to Use	
AppChi2	2.817	99% KM (Chebyshev) UCL	16.25
95% Gamma Approximate UCL	8.325		
95% Adjusted Gamma UCL	9.59		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Lead

General Statistics			
Number of Valid Data	15	Number of Detected Data	13
Number of Distinct Detected Data	10	Number of Non-Detect Data	2
		Percent Non-Detects	13.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0024	Minimum Detected	-6.032
Maximum Detected	0.0277	Maximum Detected	-3.586
Mean of Detected	0.00923	Mean of Detected	-4.937

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
SD of Detected	0.00757	SD of Detected	0.713
Minimum Non-Detect	0.005	Minimum Non-Detect	-5.298
Maximum Non-Detect	0.005	Maximum Non-Detect	-5.298

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.784	Shapiro Wilk Test Statistic	0.955
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00833	Mean	-5.077
SD	0.0074	SD	0.757
95% DL/2 (t) UCL	0.0117	95% H-Stat (DL/2) UCL	0.0127
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	0.00616	Mean in Log Scale	-5.044
SD	0.00965	SD in Log Scale	0.722
95% MLE (t) UCL	0.0106	Mean in Original Scale	0.00844
95% MLE (Tiku) UCL	0.0111	SD in Original Scale	0.00732
		95% Percentile Bootstrap UCL	0.0118
		95% BCA Bootstrap UCL	0.0122
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.697	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.00544		
nu star	44.11		
A-D Test Statistic	0.501	Nonparametric Statistics	
5% A-D Critical Value	0.743	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.743	Mean	0.00846
5% K-S Critical Value	0.239	SD	0.00706
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0019
		95% KM (t) UCL	0.0118
Assuming Gamma Distribution		95% KM (z) UCL	0.0116
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0118
Minimum	0.00157	95% KM (bootstrap t) UCL	0.0153
Maximum	0.0277	95% KM (BCA) UCL	0.0116
Mean	0.00848	95% KM (Percentile Bootstrap) UCL	0.0116
Median	0.0062	95% KM (Chebyshev) UCL	0.0167
SD	0.00732	97.5% KM (Chebyshev) UCL	0.0203
k star	1.572	99% KM (Chebyshev) UCL	0.0273
Theta star	0.00539		
Nu star	47.16	Potential UCLs to Use	
AppChi2	32.4	95% KM (BCA) UCL	0.0116
95% Gamma Approximate UCL	0.0123		
95% Adjusted Gamma UCL	0.0129		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operatio	2000

Manganese

General Statistics			
Number of Valid Data	14	Number of Detected Data	13
Number of Distinct Detected Data	12	Number of Non-Detect Data	1
		Percent Non-Detects	7.14%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0123	Minimum Detected	-4.398
Maximum Detected	3.9	Maximum Detected	1.361
Mean of Detected	0.386	Mean of Detected	-2.541
SD of Detected	1.059	SD of Detected	1.557
Minimum Non-Detect	0.25	Minimum Non-Detect	-1.386
Maximum Non-Detect	0.25	Maximum Non-Detect	-1.386

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.378	Shapiro Wilk Test Statistic	0.899
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.367	Mean	-2.508
SD	1.02	SD	1.501
95% DL/2 (t) UCL	0.85	95% H-Stat (DL/2) UCL	1.289
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.565
		SD in Log Scale	1.499
		Mean in Original Scale	0.362
		SD in Original Scale	1.022
		95% Percentile Bootstrap UCL	0.901
		95% BCA Bootstrap UCL	1.211
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.369	Data appear Lognormal at 5% Significance Level	
Theta Star	1.046		
nu star	9.582		
A-D Test Statistic	1.6	Nonparametric Statistics	
5% A-D Critical Value	0.807	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.807	Mean	0.364
5% K-S Critical Value	0.253	SD	0.984
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.274
		95% KM (t) UCL	0.849
Assuming Gamma Distribution		95% KM (z) UCL	0.814

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		

Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.847
Minimum	0.0123	95% KM (bootstrap t) UCL	4.769
Maximum	3.9	95% KM (BCA) UCL	0.918
Mean	0.36	95% KM (Percentile Bootstrap) UCL	0.898
Median	0.0445	95% KM (Chebyshev) UCL	1.557
SD	1.023	97.5% KM (Chebyshev) UCL	2.074
k star	0.368	99% KM (Chebyshev) UCL	3.088
Theta star	0.977		
Nu star	10.31	Potential UCLs to Use	
AppChi2	4.138	99% KM (Chebyshev) UCL	3.088
95% Gamma Approximate UCL	0.896		
95% Adjusted Gamma UCL	1.021		

Note: DL/2 is not a recommended method.

Mercury

General Statistics			
Number of Valid Observations	15	Number of Distinct Observations	15
Raw Statistics		Log-transformed Statistics	
Minimum	6E-06	Minimum of Log Data	-12.02
Maximum	0.00121	Maximum of Log Data	-6.717
Mean	0.00019	Mean of log Data	-10.13
Median	1.7E-05	SD of log Data	1.785
SD	0.00034		
Coefficient of Variation	1.831		
Skewness	2.34		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.606	Shapiro Wilk Test Statistic	0.845
Shapiro Wilk Critical Value	0.881	Shapiro Wilk Critical Value	0.881
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.00034	95% H-UCL	0.00142
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.00052
95% Adjusted-CLT UCL	0.00039	97.5% Chebyshev (MVUE) UCL	0.00068
95% Modified-t UCL	0.00035	99% Chebyshev (MVUE) UCL	0.00099
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.383	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.00049		
MLE of Mean	0.00019		
MLE of Standard Deviation	0.0003		
nu star	11.48		
Approximate Chi Square Value (.05)	4.889	Nonparametric Statistics	
Adjusted Level of Significance	0.0324	95% CLT UCL	0.00033
Adjusted Chi Square Value	4.371	95% Jackknife UCL	0.00034
		95% Standard Bootstrap UCL	0.00033

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Anderson-Darling Test Statistic	1.52	95% Bootstrap-t UCL	0.0005
Anderson-Darling 5% Critical Value	0.809	95% Hall's Bootstrap UCL	0.00038
Kolmogorov-Smirnov Test Statistic	0.308	95% Percentile Bootstrap UCL	0.00033
Kolmogorov-Smirnov 5% Critical Value	0.236	95% BCA Bootstrap UCL	0.00039
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.00057
		97.5% Chebyshev(Mean, Sd) UCL	0.00074
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.00106
95% Approximate Gamma UCL	0.00044		
95% Adjusted Gamma UCL	0.00049		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	0.00106

Methyl Mercury (Derived)

General Statistics			
Number of Valid Observations	15	Number of Distinct Observations	15
Raw Statistics		Log-transformed Statistics	
Minimum	6E-08	Minimum of Log Data	-16.63
Maximum	1.2E-05	Maximum of Log Data	-11.32
Mean	1.9E-06	Mean of log Data	-14.74
Median	1.7E-07	SD of log Data	1.785
SD	3.4E-06		
Coefficient of Variation	N/A		
Skewness	2.34		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.606	Shapiro Wilk Test Statistic	0.845
Shapiro Wilk Critical Value	0.881	Shapiro Wilk Critical Value	0.881
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	3.4E-06	95% H-UCL	1.4E-05
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	5.2E-06
95% Adjusted-CLT UCL	3.9E-06	97.5% Chebyshev (MVUE) UCL	6.8E-06
95% Modified-t UCL	3.5E-06	99% Chebyshev (MVUE) UCL	9.9E-06
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.383	Data do not follow a Discernable Distribution (0.05)	
Theta Star	4.9E-06		
MLE of Mean	1.9E-06		
MLE of Standard Deviation	3E-06		
nu star	11.48		
Approximate Chi Square Value (.05)	4.889	Nonparametric Statistics	
Adjusted Level of Significance	0.0324	95% CLT UCL	3.3E-06
Adjusted Chi Square Value	4.371	95% Jackknife UCL	3.4E-06
		95% Standard Bootstrap UCL	3.2E-06
Anderson-Darling Test Statistic	1.52	95% Bootstrap-t UCL	4.9E-06

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Anderson-Darling 5% Critical Value	0.809	95% Hall's Bootstrap UCL	3.8E-06
Kolmogorov-Smirnov Test Statistic	0.308	95% Percentile Bootstrap UCL	3.3E-06
Kolmogorov-Smirnov 5% Critical Value	0.236	95% BCA Bootstrap UCL	3.9E-06
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	5.7E-06
		97.5% Chebyshev(Mean, Sd) UCL	7.4E-06
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.1E-05
95% Approximate Gamma UCL	4.4E-06		
95% Adjusted Gamma UCL	4.9E-06		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	1.1E-05

N-Nitrosodi-n-propylamine

General Statistics			
Number of Valid Data	15	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	14
		Percent Non-Detects	93.33%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data se
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters

The data set for variable N-Nitrosodi-n-propylamine was not processed!

Naphthalene

General Statistics			
Number of Valid Data	15	Number of Detected Data	9
Number of Distinct Detected Data	9	Number of Non-Detect Data	6
		Percent Non-Detects	40.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.1	Minimum Detected	0.0953
Maximum Detected	35	Maximum Detected	3.555
Mean of Detected	7.422	Mean of Detected	1.393
SD of Detected	10.77	SD of Detected	1.083
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	13
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	86.67%

Warning: There are only 9 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.614	Shapiro Wilk Test Statistic	0.932
5% Shapiro Wilk Critical Value	0.829	5% Shapiro Wilk Critical Value	0.829
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	6.52	Mean	1.493
SD	8.221	SD	0.829
95% DL/2 (t) UCL	10.26	95% H-Stat (DL/2) UCL	12.44
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.234
		SD in Log Scale	0.912
		Mean in Original Scale	5.689
		SD in Original Scale	8.492
		95% Percentile Bootstrap UCL	9.673
		95% BCA Bootstrap UCL	11.95
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.708	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	10.49		
nu star	12.74		
A-D Test Statistic	0.648	Nonparametric Statistics	
5% A-D Critical Value	0.745	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.745	Mean	5.642
5% K-S Critical Value	0.287	SD	8.215
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	2.277
		95% KM (t) UCL	9.653
Assuming Gamma Distribution		95% KM (z) UCL	9.388
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	9.573
Minimum	1.1	95% KM (bootstrap t) UCL	16.92
Maximum	35	95% KM (BCA) UCL	9.86
Mean	7.368	95% KM (Percentile Bootstrap) UCL	9.891
Median	6.09	95% KM (Chebyshev) UCL	15.57
SD	8.156	97.5% KM (Chebyshev) UCL	19.86
k star	1.244	99% KM (Chebyshev) UCL	28.3
Theta star	5.92		
Nu star	37.33	Potential UCLs to Use	
AppChi2	24.35	95% KM (BCA) UCL	9.86
95% Gamma Approximate UCL	11.3		
95% Adjusted Gamma UCL	11.93		

Note: DL/2 is not a recommended method.

Nickel

General Statistics

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Number of Valid Data	15	Number of Detected Data	13
Number of Distinct Detected Data	12	Number of Non-Detect Data	2
		Percent Non-Detects	13.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0024	Minimum Detected	-6.032
Maximum Detected	0.0615	Maximum Detected	-2.789
Mean of Detected	0.0126	Mean of Detected	-4.987
SD of Detected	0.0171	SD of Detected	1.068
Minimum Non-Detect	0.04	Minimum Non-Detect	-3.219
Maximum Non-Detect	0.04	Maximum Non-Detect	-3.219
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.658	Shapiro Wilk Test Statistic	0.873
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0136	Mean	-4.844
SD	0.0161	SD	1.059
95% DL/2 (t) UCL	0.0209	95% H-Stat (DL/2) UCL	0.0461
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.006
		SD in Log Scale	1.005
		Mean in Original Scale	0.0118
		SD in Original Scale	0.016
		95% Percentile Bootstrap UCL	0.0195
		95% BCA Bootstrap UCL	0.0216
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.781	Data appear Lognormal at 5% Significance Level	
Theta Star	0.0161		
nu star	20.3		
A-D Test Statistic	1.008	Nonparametric Statistics	
5% A-D Critical Value	0.76	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.76	Mean	0.012
5% K-S Critical Value	0.244	SD	0.0157
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00433
		95% KM (t) UCL	0.0197
Assuming Gamma Distribution		95% KM (z) UCL	0.0192
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0197
Minimum	0.0024	95% KM (bootstrap t) UCL	0.0302
Maximum	0.0615	95% KM (BCA) UCL	0.0194
Mean	0.0126	95% KM (Percentile Bootstrap) UCL	0.0194
Median	0.0065	95% KM (Chebyshev) UCL	0.0309

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
SD	0.0159	97.5% KM (Chebyshev) UCL	0.0391
k star	0.902	99% KM (Chebyshev) UCL	0.0551
Theta star	0.014		
Nu star	27.05	Potential UCLs to Use	
AppChi2	16.19	97.5% KM (Chebyshev) UCL	0.0391
95% Gamma Approximate UCL	0.021		
95% Adjusted Gamma UCL	0.0225		

Note: DL/2 is not a recommended method.

Phenanthrene

General Statistics			
Number of Valid Data	15	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	11
		Percent Non-Detects	73.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.73	Minimum Detected	-0.315
Maximum Detected	2.1	Maximum Detected	0.742
Mean of Detected	1.253	Mean of Detected	0.14
SD of Detected	0.614	SD of Detected	0.468
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	15
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.904	Shapiro Wilk Test Statistic	0.955
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.134	Mean	1.243
SD	1.833	SD	0.723
95% DL/2 (t) UCL	4.968	95% H-Stat (DL/2) UCL	14.39
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.14

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
		SD in Log Scale	0.449
		Mean in Original Scale	1.264
		SD in Original Scale	0.569
		95% Percentile Bootstrap UCL	1.505
		95% BCA Bootstrap UCL	1.497
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.683	Data appear Normal at 5% Significance Level	
Theta Star	0.744		
nu star	13.46		
A-D Test Statistic	0.289	Nonparametric Statistics	
5% A-D Critical Value	0.659	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.659	Mean	1.253
5% K-S Critical Value	0.396	SD	0.532
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.307
		95% KM (t) UCL	1.794
Assuming Gamma Distribution		95% KM (z) UCL	1.758
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.856
Minimum	0.318	95% KM (bootstrap t) UCL	2.471
Maximum	2.1	95% KM (BCA) UCL	1.738
Mean	1.247	95% KM (Percentile Bootstrap) UCL	1.795
Median	1.291	95% KM (Chebyshev) UCL	2.591
SD	0.556	97.5% KM (Chebyshev) UCL	3.171
k star	3.616	99% KM (Chebyshev) UCL	4.309
Theta star	0.345		
Nu star	108.5	Potential UCLs to Use	
AppChi2	85.44	95% KM (t) UCL	1.794
95% Gamma Approximate UCL	1.583	95% KM (Percentile Bootstrap) UCL	1.795
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Phenol

General Statistics			
Number of Valid Data	15	Number of Detected Data	13
Number of Distinct Detected Data	13	Number of Non-Detect Data	2
		Percent Non-Detects	13.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.3	Minimum Detected	0.262
Maximum Detected	100	Maximum Detected	4.605
Mean of Detected	27.09	Mean of Detected	2.333
SD of Detected	39.78	SD of Detected	1.404
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	11
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4

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Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	73.33%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.607	Shapiro Wilk Test Statistic	0.87
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	24.18	Mean	2.243
SD	37.62	SD	1.321
95% DL/2 (t) UCL	41.29	95% H-Stat (DL/2) UCL	90.23
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.253
		SD in Log Scale	1.317
		Mean in Original Scale	24.23
		SD in Original Scale	37.59
		95% Percentile Bootstrap UCL	42.1
		95% BCA Bootstrap UCL	42.9
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.539	Data appear Lognormal at 5% Significance Level	
Theta Star	50.26		
nu star	14.01		
A-D Test Statistic	1.449	Nonparametric Statistics	
5% A-D Critical Value	0.779	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.779	Mean	24.24
5% K-S Critical Value	0.248	SD	36.33
Data not Gamma Distributed at 5% Significance Level		SE of Mean	9.768
		95% KM (t) UCL	41.44
Assuming Gamma Distribution		95% KM (z) UCL	40.3
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	41.35
Minimum	1.3	95% KM (bootstrap t) UCL	44.86
Maximum	100	95% KM (BCA) UCL	42.24
Mean	25.51	95% KM (Percentile Bootstrap) UCL	41.78
Median	8.8	95% KM (Chebyshev) UCL	66.81
SD	37.06	97.5% KM (Chebyshev) UCL	85.24
k star	0.61	99% KM (Chebyshev) UCL	121.4
Theta star	41.85		
Nu star	18.29	Potential UCLs to Use	
AppChi2	9.598	97.5% KM (Chebyshev) UCL	85.24
95% Gamma Approximate UCL	48.6		
95% Adjusted Gamma UCL	52.82		

Note: DL/2 is not a recommended method.

Selenium

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Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		

General Statistics

Number of Valid Data	15	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	12
		Percent Non-Detects	80.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0022	Minimum Detected	-6.119
Maximum Detected	0.0076	Maximum Detected	-4.88
Mean of Detected	0.00407	Mean of Detected	-5.677
SD of Detected	0.00306	SD of Detected	0.692
Minimum Non-Detect	0.005	Minimum Non-Detect	-5.298
Maximum Non-Detect	0.01	Maximum Non-Detect	-4.605

Note: Data have multiple DLs - Use of KM Method is recomm	Number treated as Non-Detect	15
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.778	Shapiro Wilk Test Statistic	0.802
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00328	Mean	-5.797
SD	0.00155	SD	0.377
95% DL/2 (t) UCL	0.00398	95% H-Stat (DL/2) UCL	0.00489

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.959
		SD in Log Scale	0.452
		Mean in Original Scale	0.00287
		SD in Original Scale	0.00156
		95% Percentile Bootstrap UCL	0.00355
		95% BCA Bootstrap UCL	0.00387

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level
Theta Star	N/A	

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.00274
5% K-S Critical Value	N/A	SD	0.00147
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00052
		95% KM (t) UCL	0.00366
Assuming Gamma Distribution		95% KM (z) UCL	0.0036
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00356
Minimum	N/A	95% KM (bootstrap t) UCL	0.00789
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.0076
Median	N/A	95% KM (Chebyshev) UCL	0.00503
SD	N/A	97.5% KM (Chebyshev) UCL	0.00601
k star	N/A	99% KM (Chebyshev) UCL	0.00795
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.00366
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	0.0076
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Sodium

General Statistics			
Number of Valid Observations	15	Number of Distinct Observations	15
Raw Statistics		Log-transformed Statistics	
Minimum	12	Minimum of Log Data	2.485
Maximum	1090	Maximum of Log Data	6.994
Mean	395.8	Mean of log Data	5.537
Median	278	SD of log Data	1.197
SD	313.2		
Coefficient of Variation	0.791		
Skewness	0.888		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.92	Shapiro Wilk Test Statistic	0.883
Shapiro Wilk Critical Value	0.881	Shapiro Wilk Critical Value	0.881
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	538.2	95% H-UCL	1389
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1209
95% Adjusted-CLT UCL	548.6	97.5% Chebyshev (MVUE) UCL	1524
95% Modified-t UCL	541.3	99% Chebyshev (MVUE) UCL	2141

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Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.057	Data appear Normal at 5% Significance Level	
Theta Star	374.3		
MLE of Mean	395.8		
MLE of Standard Deviation	384.9		
nu star	31.72		
Approximate Chi Square Value (.05)	19.85	Nonparametric Statistics	
Adjusted Level of Significance	0.0324	95% CLT UCL	528.8
Adjusted Chi Square Value	18.7	95% Jackknife UCL	538.2
		95% Standard Bootstrap UCL	525.2
Anderson-Darling Test Statistic	0.254	95% Bootstrap-t UCL	562.9
Anderson-Darling 5% Critical Value	0.758	95% Hall's Bootstrap UCL	559.2
Kolmogorov-Smirnov Test Statistic	0.136	95% Percentile Bootstrap UCL	534.1
Kolmogorov-Smirnov 5% Critical Value	0.227	95% BCA Bootstrap UCL	541.5
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	748.3
		97.5% Chebyshev(Mean, Sd) UCL	900.8
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1200
95% Approximate Gamma UCL	632.5		
95% Adjusted Gamma UCL	671.4		
Potential UCL to Use		Use 95% Student's-t UCL	538.2

Toluene

General Statistics			
Number of Valid Data	15	Number of Detected Data	8
Number of Distinct Detected Data	8	Number of Non-Detect Data	7
		Percent Non-Detects	46.67%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.11	Minimum Detected	-2.207
Maximum Detected	30	Maximum Detected	3.401
Mean of Detected	5.735	Mean of Detected	0.569
SD of Detected	10.06	SD of Detected	1.739
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	5	Maximum Non-Detect	1.609
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	13
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	86.67%

Warning: There are only 8 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.605	Shapiro Wilk Test Statistic	0.99
5% Shapiro Wilk Critical Value	0.818	5% Shapiro Wilk Critical Value	0.818
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	3.342	Mean	-0.144
SD	7.608	SD	1.567
95% DL/2 (t) UCL	6.802	95% H-Stat (DL/2) UCL	10.86
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.469
		SD in Log Scale	1.782
		Mean in Original Scale	3.177
		SD in Original Scale	7.654
		95% Percentile Bootstrap UCL	6.833
		95% BCA Bootstrap UCL	9.043
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.417	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	13.75		
nu star	6.671		
A-D Test Statistic	0.362	Nonparametric Statistics	
5% A-D Critical Value	0.76	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.76	Mean	3.214
5% K-S Critical Value	0.308	SD	7.388
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	2.042
		95% KM (t) UCL	6.811
Assuming Gamma Distribution		95% KM (z) UCL	6.573
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	6.7
Minimum	0.11	95% KM (bootstrap t) UCL	17.73
Maximum	30	95% KM (BCA) UCL	7.185
Mean	5.807	95% KM (Percentile Bootstrap) UCL	6.919
Median	5.105	95% KM (Chebyshev) UCL	12.12
SD	7.133	97.5% KM (Chebyshev) UCL	15.97
k star	0.782	99% KM (Chebyshev) UCL	23.53
Theta star	7.429		
Nu star	23.45	Potential UCLs to Use	
AppChi2	13.43	95% KM (BCA) UCL	7.185
95% Gamma Approximate UCL	10.14		
95% Adjusted Gamma UCL	10.89		

Note: DL/2 is not a recommended method.

Vanadium

General Statistics			
Number of Valid Data	15	Number of Detected Data	9
Number of Distinct Detected Data	8	Number of Non-Detect Data	6

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Honeywell - Wastebeds 1-8 Site
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
		Percent Non-Detects	40.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00066	Minimum Detected	-7.323
Maximum Detected	0.0359	Maximum Detected	-3.327
Mean of Detected	0.00645	Mean of Detected	-5.751
SD of Detected	0.0112	SD of Detected	1.092
Minimum Non-Detect	0.05	Minimum Non-Detect	-2.996
Maximum Non-Detect	0.25	Maximum Non-Detect	-1.386
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	15
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 9 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.512	Shapiro Wilk Test Statistic	0.876
5% Shapiro Wilk Critical Value	0.829	5% Shapiro Wilk Critical Value	0.829
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0205	Mean	-4.819
SD	0.0314	SD	1.494
95% DL/2 (t) UCL	0.0348	95% H-Stat (DL/2) UCL	0.274
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.751
		SD in Log Scale	0.958
		Mean in Original Scale	0.00553
		SD in Original Scale	0.00875
		95% Percentile Bootstrap UCL	0.00946
		95% BCA Bootstrap UCL	0.0119
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.63	Data appear Lognormal at 5% Significance Level	
Theta Star	0.0102		
nu star	11.34		
A-D Test Statistic	1.133	Nonparametric Statistics	
5% A-D Critical Value	0.749	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.749	Mean	0.00645
5% K-S Critical Value	0.288	SD	0.0105

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00372
		95% KM (t) UCL	0.013
Assuming Gamma Distribution		95% KM (z) UCL	0.0126
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0132
Minimum	1E-09	95% KM (bootstrap t) UCL	0.065
Maximum	0.0359	95% KM (BCA) UCL	0.0138
Mean	0.00646	95% KM (Percentile Bootstrap) UCL	0.0131
Median	0.0027	95% KM (Chebyshev) UCL	0.0227
SD	0.00925	97.5% KM (Chebyshev) UCL	0.0297
k star	0.384	99% KM (Chebyshev) UCL	0.0435
Theta star	0.0168		
Nu star	11.52	Potential UCLs to Use	
AppChi2	4.914	97.5% KM (Chebyshev) UCL	0.0297
95% Gamma Approximate UCL	0.0151		
95% Adjusted Gamma UCL	0.0169		

Note: DL/2 is not a recommended method.

Xylenes (total)

General Statistics			
Number of Valid Data	13	Number of Detected Data	4
Number of Distinct Detected Data	3	Number of Non-Detect Data	9
		Percent Non-Detects	69.23%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.87	Minimum Detected	-0.139
Maximum Detected	24	Maximum Detected	3.178
Mean of Detected	7.818	Mean of Detected	1.341
SD of Detected	10.84	SD of Detected	1.37
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	5	Maximum Non-Detect	1.609
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	12
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	92.31%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.716	Shapiro Wilk Test Statistic	0.923
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

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Honeywell - Wastebeds 1-8 Site
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General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.752	Mean	-0.37
SD	6.491	SD	1.507
95% DL/2 (t) UCL	5.96	95% H-Stat (DL/2) UCL	5.243
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.475
		SD in Log Scale	2.392
		Mean in Original Scale	2.496
		SD in Original Scale	6.561
		95% Percentile Bootstrap UCL	6.059
		95% BCA Bootstrap UCL	8.018
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.373	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	20.94		
nu star	2.986		
A-D Test Statistic	0.478	Nonparametric Statistics	
5% A-D Critical Value	0.669	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.669	Mean	3.04
5% K-S Critical Value	0.404	SD	6.112
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	1.959
		95% KM (t) UCL	6.532
Assuming Gamma Distribution		95% KM (z) UCL	6.263
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	5.897
Minimum	1E-09	95% KM (bootstrap t) UCL	15.1
Maximum	147.6	95% KM (BCA) UCL	24
Mean	38.1	95% KM (Percentile Bootstrap) UCL	8
Median	21.56	95% KM (Chebyshev) UCL	11.58
SD	46.7	97.5% KM (Chebyshev) UCL	15.28
k star	0.253	99% KM (Chebyshev) UCL	22.53
Theta star	150.6		
Nu star	6.577	Potential UCLs to Use	
AppChi2	1.942	95% KM (t) UCL	6.532
95% Gamma Approximate UCL	129.1		
95% Adjusted Gamma UCL	N/A		
Note: DL/2 is not a recommended method.			

Zinc

General Statistics			
Number of Valid Data	15	Number of Detected Data	10
Number of Distinct Detected Data	10	Number of Non-Detect Data	5
		Percent Non-Detects	33.33%
Raw Statistics		Log-transformed Statistics	

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operatio	2000		
Minimum Detected	0.0041	Minimum Detected	-5.497
Maximum Detected	0.091	Maximum Detected	-2.397
Mean of Detected	0.0248	Mean of Detected	-4.323
SD of Detected	0.0315	SD of Detected	1.117
Minimum Non-Detect	0.01	Minimum Non-Detect	-4.605
Maximum Non-Detect	0.05	Maximum Non-Detect	-2.996
Note: Data have multiple DLs - Use of KM Method is recomm		Number treated as Non-Detect	13
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	86.67%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.689	Shapiro Wilk Test Statistic	0.86
5% Shapiro Wilk Critical Value	0.842	5% Shapiro Wilk Critical Value	0.842
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0202	Mean	-4.449
SD	0.0265	SD	0.981
95% DL/2 (t) UCL	0.0322	95% H-Stat (DL/2) UCL	0.0543
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.51
		SD in Log Scale	0.959
		Mean in Original Scale	0.0192
		SD in Original Scale	0.0266
		95% Percentile Bootstrap UCL	0.0306
		95% BCA Bootstrap UCL	0.0369
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.718	Data appear Lognormal at 5% Significance Level	
Theta Star	0.0345		
nu star	14.36		
A-D Test Statistic	0.959	Nonparametric Statistics	
5% A-D Critical Value	0.751	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.751	Mean	0.019
5% K-S Critical Value	0.274	SD	0.0258
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00706
		95% KM (t) UCL	0.0315
Assuming Gamma Distribution		95% KM (z) UCL	0.0306
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0313
Minimum	0.0041	95% KM (bootstrap t) UCL	0.0566
Maximum	0.091	95% KM (BCA) UCL	0.0319
Mean	0.0246	95% KM (Percentile Bootstrap) UCL	0.0313
Median	0.0169	95% KM (Chebyshev) UCL	0.0498
SD	0.0255	97.5% KM (Chebyshev) UCL	0.0631
k star	1.094	99% KM (Chebyshev) UCL	0.0893

Electronic Appendix F6, Table 5
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Habitat Surface Water

General UCL Statistics for Data Sets with Non-Detects

User Selected Options				
Full Precision	OFF			
Confidence Coefficient	95%			
Number of Bootstrap Operatio	2000			
Theta star		0.0225		
Nu star		32.81	Potential UCLs to Use	
AppChi2		20.72	97.5% KM (Chebyshev) UCL	0.0631
95% Gamma Approximate UCL		0.039		
95% Adjusted Gamma UCL		0.0414		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1-Phenyl-1-(2,4-dimethylphenyl)ethane

General Statistics

Number of Valid Data	22	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	18
		Percent Non-Detects	81.82%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.83	Minimum Detected	-0.186
Maximum Detected	3.7	Maximum Detected	1.308
Mean of Detected	2.083	Mean of Detected	0.601
SD of Detected	1.193	SD of Detected	0.613
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	300	Maximum Non-Detect	5.704

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	22
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.942	Shapiro Wilk Test Statistic	0.967
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	18.31	Mean	1.889
SD	36.91	SD	1.234
95% DL/2 (t) UCL	31.85	95% H-Stat (DL/2) UCL	36.75
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.601
		SD in Log Scale	0.457
		Mean in Original Scale	2.011
		SD in Original Scale	0.921
		95% Percentile Bootstrap UCL	2.335
		95% BCA Bootstrap UCL	2.352
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.147	Data appear Normal at 5% Significance Level	
Theta Star	1.815		
nu star	9.179		
A-D Test Statistic	0.262	Nonparametric Statistics	
5% A-D Critical Value	0.659	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.659	Mean	2.083
5% K-S Critical Value	0.396	SD	1.033
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.597
		95% KM (t) UCL	3.109
Assuming Gamma Distribution		95% KM (z) UCL	3.064
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	3.241

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Minimum	0.584	95% KM (bootstrap t) UCL	3.968
Maximum	3.7	95% KM (BCA) UCL	2.983
Mean	2.089	95% KM (Percentile Bootstrap) UCL	3.225
Median	2.105	95% KM (Chebyshev) UCL	4.683
SD	0.87	97.5% KM (Chebyshev) UCL	5.808
k star	4.351	99% KM (Chebyshev) UCL	8.019
Theta star	0.48		
Nu star	191.4	Potential UCLs to Use	
AppChi2	160.4	95% KM (t) UCL	3.109
95% Gamma Approximate UCL	2.492	95% KM (Percentile Bootstrap) UCL	3.225
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

1-Phenyl-1-(4-methylphenyl)ethane

General Statistics

Number of Valid Data	22	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	19
		Percent Non-Detects	86.36%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.8	Minimum Detected	0.588
Maximum Detected	2.4	Maximum Detected	0.875
Mean of Detected	2.167	Mean of Detected	0.765
SD of Detected	0.321	SD of Detected	0.155
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	300	Maximum Non-Detect	5.704

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	22
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.871	Shapiro Wilk Test Statistic	0.858
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	21.2	Mean	2.059
SD	38.63	SD	1.239
95% DL/2 (t) UCL	35.38	95% H-Stat (DL/2) UCL	49.33

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.765
		SD in Log Scale	0.112
		Mean in Original Scale	2.163
		SD in Original Scale	0.24
		95% Percentile Bootstrap UCL	2.243

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

95% BCA Bootstrap UCL	2.247

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	2.167
5% K-S Critical Value	N/A	SD	0.262
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.186
		95% KM (t) UCL	2.486
Assuming Gamma Distribution		95% KM (z) UCL	2.472
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.549
Minimum	N/A	95% KM (bootstrap t) UCL	2.525
Maximum	N/A	95% KM (BCA) UCL	2.4
Mean	N/A	95% KM (Percentile Bootstrap) UCL	2.4
Median	N/A	95% KM (Chebyshev) UCL	2.976
SD	N/A	97.5% KM (Chebyshev) UCL	3.326
k star	N/A	99% KM (Chebyshev) UCL	4.013
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	2.486
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	2.4
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

2,4-Dimethylphenol

General Statistics			
Number of Valid Data	46	Number of Detected Data	5
Number of Distinct Detected Data	4	Number of Non-Detect Data	41
		Percent Non-Detects	89.13%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	3.3	Minimum Detected	1.194
Maximum Detected	4.4	Maximum Detected	1.482
Mean of Detected	3.92	Mean of Detected	1.362
SD of Detected	0.402	SD of Detected	0.106
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.937	Shapiro Wilk Test Statistic	0.919
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	27.05	Mean	2.19
SD	56.99	SD	1.222
95% DL/2 (t) UCL	41.16	95% H-Stat (DL/2) UCL	32.07
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.362
		SD in Log Scale	0.0859
		Mean in Original Scale	3.917
		SD in Original Scale	0.335
		95% Percentile Bootstrap UCL	4
		95% BCA Bootstrap UCL	3.999
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	45.67	Data appear Normal at 5% Significance Level	
Theta Star	0.0858		
nu star	456.7		
A-D Test Statistic	0.349	Nonparametric Statistics	
5% A-D Critical Value	0.678	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.678	Mean	3.92
5% K-S Critical Value	0.357	SD	0.36
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.18
		95% KM (t) UCL	4.222
Assuming Gamma Distribution		95% KM (z) UCL	4.216
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	4.254
Minimum	2.92	95% KM (bootstrap t) UCL	4.238
Maximum	4.411	95% KM (BCA) UCL	4.16
Mean	3.929	95% KM (Percentile Bootstrap) UCL	4.2
Median	3.993	95% KM (Chebyshev) UCL	4.705
SD	0.336	97.5% KM (Chebyshev) UCL	5.044
k star	122.4	99% KM (Chebyshev) UCL	5.711
Theta star	0.0321		
Nu star	11258	Potential UCLs to Use	
AppChi2	11013	95% KM (t) UCL	4.222
95% Gamma Approximate UCL	4.017	95% KM (Percentile Bootstrap) UCL	4.2
95% Adjusted Gamma UCL	4.019		
Note: DL/2 is not a recommended method.			

2-Methylnaphthalene

General Statistics			
Number of Valid Data	46	Number of Detected Data	18
Number of Distinct Detected Data	17	Number of Non-Detect Data	28
		Percent Non-Detects	60.87%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.25	Minimum Detected	-1.386
Maximum Detected	12	Maximum Detected	2.485
Mean of Detected	5.596	Mean of Detected	1.383
SD of Detected	3.492	SD of Detected	1.042
Minimum Non-Detect	9.4	Minimum Non-Detect	2.241
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.955	Shapiro Wilk Test Statistic	0.841
5% Shapiro Wilk Critical Value	0.897	5% Shapiro Wilk Critical Value	0.897
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	24.24	Mean	1.962
SD	56.62	SD	1.329
95% DL/2 (t) UCL	38.26	95% H-Stat (DL/2) UCL	45.14
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.274
		SD in Log Scale	0.766
		Mean in Original Scale	4.498
		SD in Original Scale	2.779
		95% Percentile Bootstrap UCL	5.193
		95% BCA Bootstrap UCL	5.203
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.388	Data appear Normal at 5% Significance Level	
Theta Star	4.031		
nu star	49.97		
A-D Test Statistic	0.731	Nonparametric Statistics	
5% A-D Critical Value	0.755	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.755	Mean	5.198
5% K-S Critical Value	0.207	SD	3.126
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.732
		95% KM (t) UCL	6.428
Assuming Gamma Distribution		95% KM (z) UCL	6.403
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	6.453
Minimum	0.25	95% KM (bootstrap t) UCL	6.413
Maximum	12	95% KM (BCA) UCL	6.293
Mean	5.772	95% KM (Percentile Bootstrap) UCL	6.357
Median	6.033	95% KM (Chebyshev) UCL	8.391
SD	2.518	97.5% KM (Chebyshev) UCL	9.772
k star	3.057	99% KM (Chebyshev) UCL	12.49
Theta star	1.888		
Nu star	281.2	Potential UCLs to Use	
AppChi2	243.4	95% KM (t) UCL	6.428
95% Gamma Approximate UCL	6.669	95% KM (Percentile Bootstrap) UCL	6.357
95% Adjusted Gamma UCL	6.7		
Note: DL/2 is not a recommended method.			

2-Methylphenol

General Statistics			
Number of Valid Data	46	Number of Detected Data	15
Number of Distinct Detected Data	13	Number of Non-Detect Data	31
		Percent Non-Detects	67.39%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	12	Minimum Detected	2.485
Maximum Detected	320	Maximum Detected	5.768
Mean of Detected	99.47	Mean of Detected	3.992
SD of Detected	108.7	SD of Detected	1.138

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.73	Shapiro Wilk Test Statistic	0.836
5% Shapiro Wilk Critical Value	0.881	5% Shapiro Wilk Critical Value	0.881
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	43.18	Mean	2.587
SD	81.14	SD	1.379
95% DL/2 (t) UCL	63.27	95% H-Stat (DL/2) UCL	37.73
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.748
		SD in Log Scale	1.903
		Mean in Original Scale	34.41
		SD in Original Scale	75.99
		95% Percentile Bootstrap UCL	54.07
		95% BCA Bootstrap UCL	57.89
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.808	Data do not follow a Discernable Distribution (0.05)	
Theta Star	123.1		
nu star	24.25		
A-D Test Statistic	1.559	Nonparametric Statistics	
5% A-D Critical Value	0.765	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.765	Mean	41.34
5% K-S Critical Value	0.228	SD	73.28
Data not Gamma Distributed at 5% Significance Level		SE of Mean	11.31
		95% KM (t) UCL	60.33
Assuming Gamma Distribution		95% KM (z) UCL	59.94
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	58.42
Minimum	1E-09	95% KM (bootstrap t) UCL	67.9
Maximum	320	95% KM (BCA) UCL	69.87
Mean	83.65	95% KM (Percentile Bootstrap) UCL	63.51
Median	52.59	95% KM (Chebyshev) UCL	90.64
SD	75.18	97.5% KM (Chebyshev) UCL	112
k star	0.284	99% KM (Chebyshev) UCL	153.9
Theta star	294.5		
Nu star	26.13	Potential UCLs to Use	
AppChi2	15.48	95% KM (BCA) UCL	69.87
95% Gamma Approximate UCL	141.2		
95% Adjusted Gamma UCL	143.7		
Note: DL/2 is not a recommended method.			

4-Methylphenol

General Statistics			
Number of Valid Data	46	Number of Detected Data	21
Number of Distinct Detected Data	20	Number of Non-Detect Data	25
		Percent Non-Detects	54.35%

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.3	Minimum Detected	0.262
Maximum Detected	3600	Maximum Detected	8.189
Mean of Detected	680.1	Mean of Detected	4.024
SD of Detected	1217	SD of Detected	2.481
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	41
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	89.13%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.596	Shapiro Wilk Test Statistic	0.886
5% Shapiro Wilk Critical Value	0.908	5% Shapiro Wilk Critical Value	0.908
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	318.6	Mean	2.809
SD	878.4	SD	2.082
95% DL/2 (t) UCL	536.1	95% H-Stat (DL/2) UCL	279.1
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.089
		SD in Log Scale	2.623
		Mean in Original Scale	312.1
		SD in Original Scale	880
		95% Percentile Bootstrap UCL	531
		95% BCA Bootstrap UCL	586.8
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.271	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2509		
nu star	11.39		
A-D Test Statistic	2.185	Nonparametric Statistics	
5% A-D Critical Value	0.855	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.855	Mean	312.3
5% K-S Critical Value	0.206	SD	870.3
Data not Gamma Distributed at 5% Significance Level		SE of Mean	131.5
		95% KM (t) UCL	533.2
Assuming Gamma Distribution		95% KM (z) UCL	528.6
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	530.2
Minimum	1.3	95% KM (bootstrap t) UCL	661.3
Maximum	3600	95% KM (BCA) UCL	564.1
Mean	704.1	95% KM (Percentile Bootstrap) UCL	529.5
Median	579.2	95% KM (Chebyshev) UCL	885.5
SD	823.6	97.5% KM (Chebyshev) UCL	1134
k star	0.521	99% KM (Chebyshev) UCL	1621
Theta star	1350		
Nu star	47.97	Potential UCLs to Use	
AppChi2	33.07	99% KM (Chebyshev) UCL	1621
95% Gamma Approximate UCL	1021		
95% Adjusted Gamma UCL	1034		

Note: DL/2 is not a recommended method.

Acenaphthene

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

General Statistics

Number of Valid Data	46	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	45
		Percent Non-Detects	97.83%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, B

The data set for variable Acenaphthene was not processed!

Acetophenone

General Statistics

Number of Valid Data	35	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	24
		Percent Non-Detects	68.57%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	3	Minimum Detected	1.099
Maximum Detected	90	Maximum Detected	4.5
Mean of Detected	29.69	Mean of Detected	2.68
SD of Detected	34.21	SD of Detected	1.285
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	300	Maximum Non-Detect	5.704

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	35
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.758	Shapiro Wilk Test Statistic	0.887
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	19.73	Mean	2.142
SD	34.68	SD	1.087
95% DL/2 (t) UCL	29.64	95% H-Stat (DL/2) UCL	25.39

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.951
		SD in Log Scale	0.996
		Mean in Original Scale	13.4
		SD in Original Scale	21.83
		95% Percentile Bootstrap UCL	20.11
		95% BCA Bootstrap UCL	21.62

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.665	Data appear Gamma Distributed at 5% Significance Level
Theta Star	44.68	
nu star	14.62	

		Nonparametric Statistics	
A-D Test Statistic	0.738		
5% A-D Critical Value	0.759	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.759	Mean	13.21
5% K-S Critical Value	0.264	SD	22.18
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	4.08

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

		95% KM (t) UCL	20.11
Assuming Gamma Distribution		95% KM (z) UCL	19.92
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	19.93
Minimum	3	95% KM (bootstrap t) UCL	25.44
Maximum	90	95% KM (BCA) UCL	20.31
Mean	30.19	95% KM (Percentile Bootstrap) UCL	19.93
Median	28.05	95% KM (Chebyshev) UCL	31
SD	21.62	97.5% KM (Chebyshev) UCL	38.69
k star	1.684	99% KM (Chebyshev) UCL	53.81
Theta star	17.92		
Nu star	117.9	Potential UCLs to Use	
AppChi2	93.83	95% KM (t) UCL	20.11
95% Gamma Approximate UCL	37.93		
95% Adjusted Gamma UCL	38.35		

Note: DL/2 is not a recommended method.

Aluminum

General Statistics			
Number of Valid Data	46	Number of Detected Data	30
Number of Distinct Detected Data	29	Number of Non-Detect Data	16
		Percent Non-Detects	34.78%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.066	Minimum Detected	-2.718
Maximum Detected	58.2	Maximum Detected	4.064
Mean of Detected	5.808	Mean of Detected	-0.191
SD of Detected	14.5	SD of Detected	1.898
Minimum Non-Detect	0.1	Minimum Non-Detect	-2.303
Maximum Non-Detect	1	Maximum Non-Detect	0

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	33
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	13
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	71.74%

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.437	Shapiro Wilk Test Statistic	0.919
5% Shapiro Wilk Critical Value	0.927	5% Shapiro Wilk Critical Value	0.927
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	3.836	Mean	-0.954
SD	11.96	SD	1.918
95% DL/2 (t) UCL	6.798	95% H-Stat (DL/2) UCL	4.871

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.308
		SD in Log Scale	2.26
		Mean in Original Scale	3.807
		SD in Original Scale	11.97
		95% Percentile Bootstrap UCL	7.029
		95% BCA Bootstrap UCL	8.22

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.333	Data do not follow a Discernable Distribution (0.05)	
Theta Star	17.44		
nu star	19.99		

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

A-D Test Statistic	2.639	Nonparametric Statistics	
5% A-D Critical Value	0.844	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.844	Mean	3.823
5% K-S Critical Value	0.173	SD	11.83
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.774
		95% KM (t) UCL	6.803
Assuming Gamma Distribution		95% KM (z) UCL	6.742
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	6.785
Minimum	1E-09	95% KM (bootstrap t) UCL	14.23
Maximum	58.2	95% KM (BCA) UCL	7
Mean	4.116	95% KM (Percentile Bootstrap) UCL	7.193
Median	0.198	95% KM (Chebyshev) UCL	11.56
SD	11.97	97.5% KM (Chebyshev) UCL	14.9
k star	0.117	99% KM (Chebyshev) UCL	21.48
Theta star	35.27		
Nu star	10.74	Potential UCLs to Use	
AppChi2	4.406	97.5% KM (Chebyshev) UCL	14.9
95% Gamma Approximate UCL	10.03		
95% Adjusted Gamma UCL	10.34		

Note: DL/2 is not a recommended method.

Arsenic

General Statistics

Number of Valid Data	46	Number of Detected Data	8
Number of Distinct Detected Data	8	Number of Non-Detect Data	38
		Percent Non-Detects	82.61%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0032	Minimum Detected	-5.745
Maximum Detected	0.139	Maximum Detected	-1.973
Mean of Detected	0.0505	Mean of Detected	-3.37
SD of Detected	0.0413	SD of Detected	1.114
Minimum Non-Detect	0.0036	Minimum Non-Detect	-5.627
Maximum Non-Detect	0.0616	Maximum Non-Detect	-2.787

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	44
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	2
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	95.65%

Warning: There are only 8 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.873	Shapiro Wilk Test Statistic	0.881
5% Shapiro Wilk Critical Value	0.818	5% Shapiro Wilk Critical Value	0.818
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0176	Mean	-4.565
SD	0.0234	SD	0.996
95% DL/2 (t) UCL	0.0234	95% H-Stat (DL/2) UCL	0.0218

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.269
		SD in Log Scale	1.279
		Mean in Original Scale	0.0128
		SD in Original Scale	0.0241
		95% Percentile Bootstrap UCL	0.0194
		95% BCA Bootstrap UCL	0.0208

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.988	Data appear Normal at 5% Significance Level	
Theta Star	0.0511		
nu star	15.8		
A-D Test Statistic	0.29	Nonparametric Statistics	
5% A-D Critical Value	0.729	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.729	Mean	0.0121
5% K-S Critical Value	0.299	SD	0.0242
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00389
		95% KM (t) UCL	0.0186
Assuming Gamma Distribution		95% KM (z) UCL	0.0185
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0239
Minimum	0.0032	95% KM (bootstrap t) UCL	0.0207
Maximum	0.139	95% KM (BCA) UCL	0.0474
Mean	0.0398	95% KM (Percentile Bootstrap) UCL	0.0349
Median	0.0391	95% KM (Chebyshev) UCL	0.0291
SD	0.0245	97.5% KM (Chebyshev) UCL	0.0364
k star	2.176	99% KM (Chebyshev) UCL	0.0508
Theta star	0.0183		
Nu star	200.2	Potential UCLs to Use	
AppChi2	168.4	95% KM (t) UCL	0.0186
95% Gamma Approximate UCL	0.0473	95% KM (Percentile Bootstrap) UCL	0.0349
95% Adjusted Gamma UCL	0.0476		

Note: DL/2 is not a recommended method.

Barium

General Statistics			
Number of Valid Observations	46	Number of Distinct Observations	43
Raw Statistics		Log-transformed Statistics	
Minimum	0.111	Minimum of Log Data	-2.198
Maximum	20.9	Maximum of Log Data	3.04
Mean	1.495	Mean of log Data	-0.699
Median	0.412	SD of log Data	1.155
SD	4.198		
Coefficient of Variation	2.808		
Skewness	4.438		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.323	Shapiro Wilk Test Statistic	0.872
Shapiro Wilk Critical Value	0.945	Shapiro Wilk Critical Value	0.945
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	2.534	95% H-UCL	1.489
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1.801
95% Adjusted-CLT UCL	2.946	97.5% Chebyshev (MVUE) UCL	2.171

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
95% Modified-t UCL	2.602	99% Chebyshev (MVUE) UCL	2.898
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.544	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.75		
MLE of Mean	1.495		
MLE of Standard Deviation	2.027		
nu star	50.02		
Approximate Chi Square Value (.05)	34.78	Nonparametric Statistics	
Adjusted Level of Significance	0.0448	95% CLT UCL	2.513
Adjusted Chi Square Value	34.37	95% Jackknife UCL	2.534
		95% Standard Bootstrap UCL	2.52
Anderson-Darling Test Statistic	5.521	95% Bootstrap-t UCL	7.502
Anderson-Darling 5% Critical Value	0.807	95% Hall's Bootstrap UCL	7.306
Kolmogorov-Smirnov Test Statistic	0.276	95% Percentile Bootstrap UCL	2.668
Kolmogorov-Smirnov 5% Critical Value	0.137	95% BCA Bootstrap UCL	3.136
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	4.193
		97.5% Chebyshev(Mean, Sd) UCL	5.361
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	7.654
95% Approximate Gamma UCL	2.15		
95% Adjusted Gamma UCL	2.176		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	7.654

Benzene

General Statistics			
Number of Valid Data	46	Number of Detected Data	31
Number of Distinct Detected Data	31	Number of Non-Detect Data	15
		Percent Non-Detects	32.61%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.12	Minimum Detected	-2.12
Maximum Detected	13000	Maximum Detected	9.473
Mean of Detected	3597	Mean of Detected	5.366
SD of Detected	4461	SD of Detected	3.881
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	5	Maximum Non-Detect	1.609
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	23
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	23
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	50.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.754	Shapiro Wilk Test Statistic	0.85
5% Shapiro Wilk Critical Value	0.929	5% Shapiro Wilk Critical Value	0.929
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2424	Mean	3.535
SD	4021	SD	4.168
95% DL/2 (t) UCL	3420	95% H-Stat (DL/2) UCL	2577580
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	3.441
		SD in Log Scale	4.366
		Mean in Original Scale	2424

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
		SD in Original Scale	4021
		95% Percentile Bootstrap UCL	3393
		95% BCA Bootstrap UCL	3499
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.249	Data do not follow a Discernable Distribution (0.05)	
Theta Star	14466		
nu star	15.42		
A-D Test Statistic	1.368	Nonparametric Statistics	
5% A-D Critical Value	0.876	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.876	Mean	2424
5% K-S Critical Value	0.173	SD	3977
Data not Gamma Distributed at 5% Significance Level		SE of Mean	596.1
		95% KM (t) UCL	3425
Assuming Gamma Distribution		95% KM (z) UCL	3404
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	3420
Minimum	0.12	95% KM (bootstrap t) UCL	3647
Maximum	13000	95% KM (BCA) UCL	3390
Mean	2844	95% KM (Percentile Bootstrap) UCL	3401
Median	943.5	95% KM (Chebyshev) UCL	5022
SD	3816	97.5% KM (Chebyshev) UCL	6147
k star	0.327	99% KM (Chebyshev) UCL	8355
Theta star	8686		
Nu star	30.12	Potential UCLs to Use	
AppChi2	18.58	99% KM (Chebyshev) UCL	8355
95% Gamma Approximate UCL	4608		
95% Adjusted Gamma UCL	4682		

Note: DL/2 is not a recommended method.

bis(2-Ethylhexyl)phthalate

General Statistics			
Number of Valid Data	46	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	40
		Percent Non-Detects	86.96%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.42	Minimum Detected	-0.868
Maximum Detected	2.6	Maximum Detected	0.956
Mean of Detected	1.285	Mean of Detected	0.113
SD of Detected	0.729	SD of Detected	0.595
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.896	Shapiro Wilk Test Statistic	0.943
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	26.87	Mean	2.047
SD	57.09	SD	1.412
95% DL/2 (t) UCL	41.01	95% H-Stat (DL/2) UCL	55.44
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.113
		SD in Log Scale	0.462
		Mean in Original Scale	1.241
		SD in Original Scale	0.596
		95% Percentile Bootstrap UCL	1.385
		95% BCA Bootstrap UCL	1.415
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	2.003	Data appear Normal at 5% Significance Level	
Theta Star	0.642		
nu star	24.03		
A-D Test Statistic	0.306	Nonparametric Statistics	
5% A-D Critical Value	0.7	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.7	Mean	1.285
5% K-S Critical Value	0.334	SD	0.666
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.298
		95% KM (t) UCL	1.785
Assuming Gamma Distribution		95% KM (z) UCL	1.775
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.827
Minimum	1E-09	95% KM (bootstrap t) UCL	2.131
Maximum	2.6	95% KM (BCA) UCL	1.8
Mean	1.303	95% KM (Percentile Bootstrap) UCL	1.774
Median	1.356	95% KM (Chebyshev) UCL	2.583
SD	0.528	97.5% KM (Chebyshev) UCL	3.144
k star	1.046	99% KM (Chebyshev) UCL	4.247
Theta star	1.247		
Nu star	96.2	Potential UCLs to Use	
AppChi2	74.57	95% KM (t) UCL	1.785
95% Gamma Approximate UCL	1.681	95% KM (Percentile Bootstrap) UCL	1.774
95% Adjusted Gamma UCL	1.695		
Note: DL/2 is not a recommended method.			

Cadmium

General Statistics			
Number of Valid Data	44	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	37
		Percent Non-Detects	84.09%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00025	Minimum Detected	-8.294
Maximum Detected	0.0067	Maximum Detected	-5.006
Mean of Detected	0.00233	Mean of Detected	-6.58
SD of Detected	0.00241	SD of Detected	1.15
Minimum Non-Detect	0.00028	Minimum Non-Detect	-8.181
Maximum Non-Detect	0.1	Maximum Non-Detect	-2.303
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	44
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Warning: There are only 7 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.825	Shapiro Wilk Test Statistic	0.941
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00403	Mean	-6.065
SD	0.00796	SD	0.925
95% DL/2 (t) UCL	0.00605	95% H-Stat (DL/2) UCL	0.0052
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-7.139
		SD in Log Scale	0.886
		Mean in Original Scale	0.00118
		SD in Original Scale	0.00125
		95% Percentile Bootstrap UCL	0.00152
		95% BCA Bootstrap UCL	0.00159
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.725	Data appear Normal at 5% Significance Level	
Theta Star	0.00321		
nu star	10.15		
A-D Test Statistic	0.39	Nonparametric Statistics	
5% A-D Critical Value	0.726	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.726	Mean	0.00129
5% K-S Critical Value	0.319	SD	0.00146
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.000414
		95% KM (t) UCL	0.00199
Assuming Gamma Distribution		95% KM (z) UCL	0.00197
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00198
Minimum	0.00025	95% KM (bootstrap t) UCL	0.00216
Maximum	0.0067	95% KM (BCA) UCL	0.00217
Mean	0.00239	95% KM (Percentile Bootstrap) UCL	0.00213
Median	0.00239	95% KM (Chebyshev) UCL	0.0031
SD	0.000932	97.5% KM (Chebyshev) UCL	0.00388
k star	5.524	99% KM (Chebyshev) UCL	0.00541
Theta star	0.000432		
Nu star	486.1	Potential UCLs to Use	
AppChi2	436	95% KM (t) UCL	0.00199
95% Gamma Approximate UCL	0.00266	95% KM (Percentile Bootstrap) UCL	0.00213
95% Adjusted Gamma UCL	0.00267		

Note: DL/2 is not a recommended method.

Calcium

General Statistics

Number of Valid Observations	46	Number of Distinct Observations	41

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Raw Statistics		Log-transformed Statistics	
Minimum	565	Minimum of Log Data	6.337
Maximum	11000	Maximum of Log Data	9.306
Mean	3811	Mean of log Data	7.797
Median	1735	SD of log Data	0.974
SD	3453		
Coefficient of Variation	0.906		
Skewness	0.754		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.782	Shapiro Wilk Test Statistic	0.855
Shapiro Wilk Critical Value	0.945	Shapiro Wilk Critical Value	0.945
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	4666	95% H-UCL	5462
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	6665
95% Adjusted-CLT UCL	4709	97.5% Chebyshev (MVUE) UCL	7882
95% Modified-t UCL	4676	99% Chebyshev (MVUE) UCL	10272
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	1.187	Data do not follow a Discernable Distribution (0.05)	
Theta Star	3211		
MLE of Mean	3811		
MLE of Standard Deviation	3498		
nu star	109.2		
Approximate Chi Square Value (.05)	86.07	Nonparametric Statistics	
Adjusted Level of Significance	0.0448	95% CLT UCL	4649
Adjusted Chi Square Value	85.41	95% Jackknife UCL	4666
		95% Standard Bootstrap UCL	4643
Anderson-Darling Test Statistic	3.078	95% Bootstrap-t UCL	4778
Anderson-Darling 5% Critical Value	0.773	95% Hall's Bootstrap UCL	4673
Kolmogorov-Smirnov Test Statistic	0.2	95% Percentile Bootstrap UCL	4653
Kolmogorov-Smirnov 5% Critical Value	0.134	95% BCA Bootstrap UCL	4738
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	6030
		97.5% Chebyshev(Mean, Sd) UCL	6990
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	8876
95% Approximate Gamma UCL	4835		
95% Adjusted Gamma UCL	4873		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	6030

Carbazole

General Statistics			
Number of Valid Data	46	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	42
		Percent Non-Detects	91.30%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.43	Minimum Detected	-0.844
Maximum Detected	1.1	Maximum Detected	0.0953
Mean of Detected	0.773	Mean of Detected	-0.332
SD of Detected	0.327	SD of Detected	0.453
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.888	Shapiro Wilk Test Statistic	0.895
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	27.03	Mean	2.082
SD	57.02	SD	1.404
95% DL/2 (t) UCL	41.15	95% H-Stat (DL/2) UCL	54.4
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.332
		SD in Log Scale	0.385
		Mean in Original Scale	0.771
		SD in Original Scale	0.307
		95% Percentile Bootstrap UCL	0.846
		95% BCA Bootstrap UCL	0.853
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.897	Data appear Normal at 5% Significance Level	
Theta Star	0.407		
nu star	15.17		
A-D Test Statistic	0.393	Nonparametric Statistics	
5% A-D Critical Value	0.658	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.658	Mean	0.773
5% K-S Critical Value	0.396	SD	0.283
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.164
		95% KM (t) UCL	1.047
Assuming Gamma Distribution		95% KM (z) UCL	1.042
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.086
Minimum	0.0857	95% KM (bootstrap t) UCL	1.111
Maximum	1.244	95% KM (BCA) UCL	1.067
Mean	0.774	95% KM (Percentile Bootstrap) UCL	1.067
Median	0.8	95% KM (Chebyshev) UCL	1.486
SD	0.269	97.5% KM (Chebyshev) UCL	1.795
k star	5.44	99% KM (Chebyshev) UCL	2.401
Theta star	0.142		
Nu star	500.5	Potential UCLs to Use	
AppChi2	449.6	95% KM (t) UCL	1.047
95% Gamma Approximate UCL	0.861	95% KM (Percentile Bootstrap) UCL	1.067
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Carbon disulfide

General Statistics

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Valid Data	45	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	40
		Percent Non-Detects	88.89%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.37	Minimum Detected	-0.994
Maximum Detected	110	Maximum Detected	4.7
Mean of Detected	24.55	Mean of Detected	1.328
SD of Detected	47.91	SD of Detected	2.218
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	1000	Maximum Non-Detect	6.908
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	45
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.611	Shapiro Wilk Test Statistic	0.941
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	34.18	Mean	1.474
SD	84.57	SD	2.178
95% DL/2 (t) UCL	55.36	95% H-Stat (DL/2) UCL	148.2
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.272
		SD in Log Scale	1.738
		Mean in Original Scale	3.14
		SD in Original Scale	16.36
		95% Percentile Bootstrap UCL	7.88
		95% BCA Bootstrap UCL	12.91
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.276	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	88.82		
nu star	2.764		
A-D Test Statistic	0.516	Nonparametric Statistics	
5% A-D Critical Value	0.731	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.731	Mean	3.716
5% K-S Critical Value	0.378	SD	17.35
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	3.121
		95% KM (t) UCL	8.961
Assuming Gamma Distribution		95% KM (z) UCL	8.85
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	8.03
Minimum	1E-09	95% KM (bootstrap t) UCL	84.34
Maximum	110	95% KM (BCA) UCL	18.78
Mean	19.68	95% KM (Percentile Bootstrap) UCL	11.37
Median	17.99	95% KM (Chebyshev) UCL	17.32

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
SD	19.9	97.5% KM (Chebyshev) UCL	23.21
k star	0.139	99% KM (Chebyshev) UCL	34.77
Theta star	141.3		
Nu star	12.54	Potential UCLs to Use	
AppChi2	5.585	95% KM (t) UCL	8.961
95% Gamma Approximate UCL	44.19		
95% Adjusted Gamma UCL	45.45		

Note: DL/2 is not a recommended method.

Cobalt

General Statistics			
Number of Valid Data	45	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	42
		Percent Non-Detects	93.33%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0846	Minimum Detected	-2.47
Maximum Detected	0.175	Maximum Detected	-1.743
Mean of Detected	0.138	Mean of Detected	-2.028
SD of Detected	0.0473	SD of Detected	0.388
Minimum Non-Detect	0.0018	Minimum Non-Detect	-6.32
Maximum Non-Detect	0.5	Maximum Non-Detect	-0.693
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	45
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.913	Shapiro Wilk Test Statistic	0.877
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0445	Mean	-3.619
SD	0.0583	SD	0.987
95% DL/2 (t) UCL	0.0592	95% H-Stat (DL/2) UCL	0.0601
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.268
		SD in Log Scale	1.039
		Mean in Original Scale	0.0248
		SD in Original Scale	0.0348
		95% Percentile Bootstrap UCL	0.0343
		95% BCA Bootstrap UCL	0.0362
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.0885
5% K-S Critical Value	N/A	SD	0.0174
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00332
		95% KM (t) UCL	0.0941
Assuming Gamma Distribution		95% KM (z) UCL	0.094
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.133
Minimum	N/A	95% KM (bootstrap t) UCL	0.0911
Maximum	N/A	95% KM (BCA) UCL	0.175
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.175
Median	N/A	95% KM (Chebyshev) UCL	0.103
SD	N/A	97.5% KM (Chebyshev) UCL	0.109
k star	N/A	99% KM (Chebyshev) UCL	0.122
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.0941
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	0.175
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Copper

General Statistics			
Number of Valid Data	44	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	37
		Percent Non-Detects	84.09%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0022	Minimum Detected	-6.119
Maximum Detected	0.114	Maximum Detected	-2.172
Mean of Detected	0.0517	Mean of Detected	-3.592
SD of Detected	0.0413	SD of Detected	1.548
Minimum Non-Detect	0.0028	Minimum Non-Detect	-5.878
Maximum Non-Detect	0.1	Maximum Non-Detect	-2.303
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	43
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.73%

Warning: There are only 7 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.937	Shapiro Wilk Test Statistic	0.817
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0234	Mean	-4.122
SD	0.0228	SD	0.879

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
95% DL/2 (t) UCL	0.0292	95% H-Stat (DL/2) UCL	0.0344
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.397
		SD in Log Scale	1.384
		Mean in Original Scale	0.0126
		SD in Original Scale	0.0235
		95% Percentile Bootstrap UCL	0.0187
		95% BCA Bootstrap UCL	0.0209
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.624	Data appear Normal at 5% Significance Level	
Theta Star	0.0827		
nu star	8.74		
A-D Test Statistic	0.53	Nonparametric Statistics	
5% A-D Critical Value	0.73	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.73	Mean	0.0119
5% K-S Critical Value	0.321	SD	0.0244
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00425
		95% KM (t) UCL	0.019
Assuming Gamma Distribution		95% KM (z) UCL	0.0189
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0181
Minimum	0.0022	95% KM (bootstrap t) UCL	0.02
Maximum	0.114	95% KM (BCA) UCL	0.0574
Mean	0.0442	95% KM (Percentile Bootstrap) UCL	0.0492
Median	0.0452	95% KM (Chebyshev) UCL	0.0304
SD	0.0193	97.5% KM (Chebyshev) UCL	0.0384
k star	3.436	99% KM (Chebyshev) UCL	0.0541
Theta star	0.0129		
Nu star	302.3	Potential UCLs to Use	
AppChi2	263.1	95% KM (t) UCL	0.019
95% Gamma Approximate UCL	0.0508	95% KM (Percentile Bootstrap) UCL	0.0492
95% Adjusted Gamma UCL	0.051		

Note: DL/2 is not a recommended method.

Cyanide, Total

General Statistics			
Number of Valid Data	46	Number of Detected Data	24
Number of Distinct Detected Data	24	Number of Non-Detect Data	22
		Percent Non-Detects	47.83%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0065	Minimum Detected	-5.036
Maximum Detected	0.36	Maximum Detected	-1.022
Mean of Detected	0.0606	Mean of Detected	-3.487
SD of Detected	0.0818	SD of Detected	1.152
Minimum Non-Detect	0.01	Minimum Non-Detect	-4.605
Maximum Non-Detect	0.01	Maximum Non-Detect	-4.605
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.669	Shapiro Wilk Test Statistic	0.9
5% Shapiro Wilk Critical Value	0.916	5% Shapiro Wilk Critical Value	0.916
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.034	Mean	-4.353
SD	0.0649	SD	1.231
95% DL/2 (t) UCL	0.0501	95% H-Stat (DL/2) UCL	0.0321
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-4.593
		SD in Log Scale	1.556
		Mean in Original Scale	0.0336
		SD in Original Scale	0.0651
		95% Percentile Bootstrap UCL	0.0507
		95% BCA Bootstrap UCL	0.0557
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.78	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0777		
nu star	37.45		
A-D Test Statistic	1.524	Nonparametric Statistics	
5% A-D Critical Value	0.778	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.778	Mean	0.0352
5% K-S Critical Value	0.184	SD	0.0636
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00959
		95% KM (t) UCL	0.0514
Assuming Gamma Distribution		95% KM (z) UCL	0.051
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0512
Minimum	1E-09	95% KM (bootstrap t) UCL	0.062
Maximum	0.36	95% KM (BCA) UCL	0.0522
Mean	0.0631	95% KM (Percentile Bootstrap) UCL	0.0523
Median	0.03	95% KM (Chebyshev) UCL	0.0771
SD	0.0718	97.5% KM (Chebyshev) UCL	0.0951
k star	0.288	99% KM (Chebyshev) UCL	0.131
Theta star	0.219		
Nu star	26.52	Potential UCLs to Use	
AppChi2	15.78	95% KM (Chebyshev) UCL	0.0771
95% Gamma Approximate UCL	0.106		
95% Adjusted Gamma UCL	0.108		

Note: DL/2 is not a recommended method.

Cyclohexane

General Statistics			
Number of Valid Data	35	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	32
		Percent Non-Detects	91.43%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.52	Minimum Detected	-0.654
Maximum Detected	3.4	Maximum Detected	1.224
Mean of Detected	1.907	Mean of Detected	0.386
SD of Detected	1.443	SD of Detected	0.955
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	35
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 3 Distinct Detected Values in this data set

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.996	Shapiro Wilk Test Statistic	0.966
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	21.48	Mean	1.174
SD	50.11	SD	1.921
95% DL/2 (t) UCL	35.8	95% H-Stat (DL/2) UCL	68.17
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.519
		SD in Log Scale	0.703
		Mean in Original Scale	0.764
		SD in Original Scale	0.635
		95% Percentile Bootstrap UCL	0.95
		95% BCA Bootstrap UCL	1.006
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data appear Normal at 5% Significance Level	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.797
5% K-S Critical Value	N/A	SD	0.765
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.242
		95% KM (t) UCL	1.206
Assuming Gamma Distribution		95% KM (z) UCL	1.195
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.6
Minimum	N/A	95% KM (bootstrap t) UCL	1.14
Maximum	N/A	95% KM (BCA) UCL	3.4
Mean	N/A	95% KM (Percentile Bootstrap) UCL	3.4
Median	N/A	95% KM (Chebyshev) UCL	1.852
SD	N/A	97.5% KM (Chebyshev) UCL	2.308
k star	N/A	99% KM (Chebyshev) UCL	3.204
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	1.206
95% Gamma Approximate UCL	N/A	95% KM (Percentile Bootstrap) UCL	3.4
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Endosulfan I

General Statistics

Number of Valid Data	69	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	68

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Number of Missing Values	14	Percent Non-Detects	98.55%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, B

Ethylbenzene

General Statistics			
Number of Valid Data	45	Number of Detected Data	20
Number of Distinct Detected Data	19	Number of Non-Detect Data	25
		Percent Non-Detects	55.56%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.12	Minimum Detected	-2.12
Maximum Detected	260	Maximum Detected	5.561
Mean of Detected	66.3	Mean of Detected	3.082
SD of Detected	70.4	SD of Detected	2.146
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	45
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.843	Shapiro Wilk Test Statistic	0.872
5% Shapiro Wilk Critical Value	0.905	5% Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	38.39	Mean	1.583
SD	65.53	SD	2.351
95% DL/2 (t) UCL	54.8	95% H-Stat (DL/2) UCL	114.4
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	1.045
		SD in Log Scale	2.551
		Mean in Original Scale	30.09
		SD in Original Scale	56.68
		95% Percentile Bootstrap UCL	45.54
		95% BCA Bootstrap UCL	47.71
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.51	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	129.9		
nu star	20.42		
A-D Test Statistic	0.501	Nonparametric Statistics	
5% A-D Critical Value	0.797	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.797	Mean	31.04
5% K-S Critical Value	0.204	SD	56.92
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	8.873
		95% KM (t) UCL	45.94
Assuming Gamma Distribution		95% KM (z) UCL	45.63
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	45.75
Minimum	0.12	95% KM (bootstrap t) UCL	51.3
Maximum	260	95% KM (BCA) UCL	47.94

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		

Mean	65.17	95% KM (Percentile Bootstrap) UCL	46.66
Median	61	95% KM (Chebyshev) UCL	69.71
SD	50.58	97.5% KM (Chebyshev) UCL	86.45
k star	0.997	99% KM (Chebyshev) UCL	119.3
Theta star	65.34		
Nu star	89.76	Potential UCLs to Use	
AppChi2	68.92	95% KM (t) UCL	45.94
95% Gamma Approximate UCL	84.88		
95% Adjusted Gamma UCL	85.63		

Note: DL/2 is not a recommended method.

Fluoranthene

General Statistics			
Number of Valid Data	46	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	44
		Percent Non-Detects	95.65%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.38	Minimum Detected	-0.968
Maximum Detected	0.57	Maximum Detected	-0.562
Mean of Detected	0.475	Mean of Detected	-0.765
SD of Detected	0.134	SD of Detected	0.287
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	500	Maximum Non-Detect	6.215

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	27.19	Mean	2.145
SD	56.95	SD	1.346
95% DL/2 (t) UCL	41.29	95% H-Stat (DL/2) UCL	44.7

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mean in Original Scale	N/A
SD in Original Scale	N/A
95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	0.475
5% K-S Critical Value	N/A	SD	0.095
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.095
		95% KM (t) UCL	0.635
Assuming Gamma Distribution		95% KM (z) UCL	0.631
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.698
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	0.57
Mean	N/A	95% KM (Percentile Bootstrap) UCL	0.57
Median	N/A	95% KM (Chebyshev) UCL	0.889
SD	N/A	97.5% KM (Chebyshev) UCL	1.068
k star	N/A	99% KM (Chebyshev) UCL	1.42
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	0.635
95% Gamma Approximate UCL	N/A	95% KM (% Bootstrap) UCL	0.57
95% Adjusted Gamma UCL	N/A		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Iron

General Statistics

Number of Valid Data	43	Number of Detected Data	27
Number of Distinct Detected Data	27	Number of Non-Detect Data	16
		Percent Non-Detects	37.21%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0933	Minimum Detected	-2.372
Maximum Detected	100	Maximum Detected	4.605
Mean of Detected	10.08	Mean of Detected	0.277
SD of Detected	25.24	SD of Detected	2.025
Minimum Non-Detect	0.0845	Minimum Non-Detect	-2.471
Maximum Non-Detect	0.5	Maximum Non-Detect	-0.693

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	25
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	18
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	58.14%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.432	Shapiro Wilk Test Statistic	0.933
5% Shapiro Wilk Critical Value	0.923	5% Shapiro Wilk Critical Value	0.923
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Mean	6.365	Mean	-0.795
SD	20.45	SD	2.161
95% DL/2 (t) UCL	11.61	95% H-Stat (DL/2) UCL	16.05
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.37
		SD in Log Scale	2.808
		Mean in Original Scale	6.342
		SD in Original Scale	20.46
		95% Percentile Bootstrap UCL	12.12
		95% BCA Bootstrap UCL	14.52
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.321	Data appear Lognormal at 5% Significance Level	
Theta Star	31.41		
nu star	17.33		
A-D Test Statistic	1.955	Nonparametric Statistics	
5% A-D Critical Value	0.845	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.845	Mean	6.369
5% K-S Critical Value	0.182	SD	20.21
Data not Gamma Distributed at 5% Significance Level		SE of Mean	3.141
		95% KM (t) UCL	11.65
Assuming Gamma Distribution		95% KM (z) UCL	11.54
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	11.61
Minimum	1E-09	95% KM (bootstrap t) UCL	29.74
Maximum	100	95% KM (BCA) UCL	12.01
Mean	6.841	95% KM (Percentile Bootstrap) UCL	12.02
Median	0.557	95% KM (Chebyshev) UCL	20.06
SD	20.45	97.5% KM (Chebyshev) UCL	25.98
k star	0.122	99% KM (Chebyshev) UCL	37.62
Theta star	56		
Nu star	10.51	Potential UCLs to Use	
AppChi2	4.261	99% KM (Chebyshev) UCL	37.62
95% Gamma Approximate UCL	16.87		
95% Adjusted Gamma UCL	17.43		

Note: DL/2 is not a recommended method.

Isopropylbenzene

General Statistics			
Number of Valid Data	35	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	31
		Percent Non-Detects	88.57%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.9	Minimum Detected	0.642
Maximum Detected	19	Maximum Detected	2.944
Mean of Detected	10.93	Mean of Detected	2.108
SD of Detected	7.123	SD of Detected	1.015
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	35
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.992	Shapiro Wilk Test Statistic	0.86
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	18.88	Mean	1.198
SD	46.65	SD	1.848
95% DL/2 (t) UCL	32.21	95% H-Stat (DL/2) UCL	44.22
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-1.672
		SD in Log Scale	2.066
		Mean in Original Scale	1.518
		SD in Original Scale	4.048
		95% Percentile Bootstrap UCL	2.683
		95% BCA Bootstrap UCL	3.219
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.646	Data appear Normal at 5% Significance Level	
Theta Star	16.9		
nu star	5.171		
A-D Test Statistic	0.358	Nonparametric Statistics	
5% A-D Critical Value	0.661	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.661	Mean	3.288
5% K-S Critical Value	0.398	SD	4.057
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.919
		95% KM (t) UCL	4.842
Assuming Gamma Distribution		95% KM (z) UCL	4.8
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	8.13
Minimum	1.9	95% KM (bootstrap t) UCL	4.237
Maximum	110.4	95% KM (BCA) UCL	19
Mean	45.26	95% KM (Percentile Bootstrap) UCL	13.64
Median	44.54	95% KM (Chebyshev) UCL	7.293
SD	32.19	97.5% KM (Chebyshev) UCL	9.026
k star	1.38	99% KM (Chebyshev) UCL	12.43
Theta star	32.8		
Nu star	96.58	Potential UCLs to Use	
AppChi2	74.91	95% KM (t) UCL	4.842
95% Gamma Approximate UCL	58.35	95% KM (Percentile Bootstrap) UCL	13.64
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Lead

General Statistics			
Number of Valid Data	46	Number of Detected Data	16
Number of Distinct Detected Data	16	Number of Non-Detect Data	30
		Percent Non-Detects	65.22%
Raw Statistics		Log-transformed Statistics	

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum Detected	0.0044	Minimum Detected	-5.426
Maximum Detected	0.058	Maximum Detected	-2.847
Mean of Detected	0.0245	Mean of Detected	-3.944
SD of Detected	0.0162	SD of Detected	0.748
Minimum Non-Detect	0.001	Minimum Non-Detect	-6.908
Maximum Non-Detect	0.05	Maximum Non-Detect	-2.996
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	45
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.83%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.923	Shapiro Wilk Test Statistic	0.965
5% Shapiro Wilk Critical Value	0.887	5% Shapiro Wilk Critical Value	0.887
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0121	Mean	-4.955
SD	0.0137	SD	1.043
95% DL/2 (t) UCL	0.0155	95% H-Stat (DL/2) UCL	0.0133
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.088
		SD in Log Scale	1.062
		Mean in Original Scale	0.0111
		SD in Original Scale	0.0137
		95% Percentile Bootstrap UCL	0.0146
		95% BCA Bootstrap UCL	0.0148
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.895	Data appear Normal at 5% Significance Level	
Theta Star	0.0129		
nu star	60.65		
A-D Test Statistic	0.208	Nonparametric Statistics	
5% A-D Critical Value	0.749	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.749	Mean	0.0118
5% K-S Critical Value	0.218	SD	0.0133
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00206
		95% KM (t) UCL	0.0153
Assuming Gamma Distribution		95% KM (z) UCL	0.0152
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0148
Minimum	0.0044	95% KM (bootstrap t) UCL	0.0157
Maximum	0.058	95% KM (BCA) UCL	0.0186
Mean	0.0249	95% KM (Percentile Bootstrap) UCL	0.0169
Median	0.0252	95% KM (Chebyshev) UCL	0.0208
SD	0.0106	97.5% KM (Chebyshev) UCL	0.0247
k star	4.645	99% KM (Chebyshev) UCL	0.0324
Theta star	0.00536		
Nu star	427.3	Potential UCLs to Use	
AppChi2	380.4	95% KM (t) UCL	0.0153
95% Gamma Approximate UCL	0.0279	95% KM (Percentile Bootstrap) UCL	0.0169
95% Adjusted Gamma UCL	0.0281		

Note: DL/2 is not a recommended method.

Manganese

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
General Statistics			
Number of Valid Data	46	Number of Detected Data	31
Number of Distinct Detected Data	30	Number of Non-Detect Data	15
		Percent Non-Detects	32.61%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0042	Minimum Detected	-5.473
Maximum Detected	17.1	Maximum Detected	2.839
Mean of Detected	1.987	Mean of Detected	-1.576
SD of Detected	4.673	SD of Detected	2.276
Minimum Non-Detect	0.0053	Minimum Non-Detect	-5.24
Maximum Non-Detect	0.25	Maximum Non-Detect	-1.386
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	34
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	12
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	73.91%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.465	Shapiro Wilk Test Statistic	0.958
5% Shapiro Wilk Critical Value	0.929	5% Shapiro Wilk Critical Value	0.929
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.344	Mean	-2.689
SD	3.928	SD	2.531
95% DL/2 (t) UCL	2.317	95% H-Stat (DL/2) UCL	4.797
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-2.968
		SD in Log Scale	2.848
		Mean in Original Scale	1.341
		SD in Original Scale	3.93
		95% Percentile Bootstrap UCL	2.314
		95% BCA Bootstrap UCL	2.7
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.296	Data appear Lognormal at 5% Significance Level	
Theta Star	6.71		
nu star	18.36		
A-D Test Statistic	2.031	Nonparametric Statistics	
5% A-D Critical Value	0.853	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.853	Mean	1.342
5% K-S Critical Value	0.171	SD	3.886
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.582
		95% KM (t) UCL	2.321
Assuming Gamma Distribution		95% KM (z) UCL	2.3
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.315
Minimum	1E-09	95% KM (bootstrap t) UCL	2.955
Maximum	17.1	95% KM (BCA) UCL	2.392
Mean	1.353	95% KM (Percentile Bootstrap) UCL	2.42
Median	0.0743	95% KM (Chebyshev) UCL	3.881
SD	3.926	97.5% KM (Chebyshev) UCL	4.98
k star	0.117	99% KM (Chebyshev) UCL	7.138
Theta star	11.52		
Nu star	10.8	Potential UCLs to Use	
AppChi2	4.449	99% KM (Chebyshev) UCL	7.138
95% Gamma Approximate UCL	3.285		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

95% Adjusted Gamma UCL	3.386

Note: DL/2 is not a recommended method.

Mercury

General Statistics			
Number of Valid Data	44	Number of Detected Data	18
Number of Distinct Detected Data	16	Number of Non-Detect Data	26
		Percent Non-Detects	59.09%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00002	Minimum Detected	-10.82
Maximum Detected	0.0016	Maximum Detected	-6.438
Mean of Detected	0.00029	Mean of Detected	-8.938
SD of Detected	0.000457	SD of Detected	1.234
Minimum Non-Detect	0.00002	Minimum Non-Detect	-10.82
Maximum Non-Detect	0.0004	Maximum Non-Detect	-7.824
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	40
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.91%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.584	Shapiro Wilk Test Statistic	0.949
5% Shapiro Wilk Critical Value	0.897	5% Shapiro Wilk Critical Value	0.897
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.000171	Mean	-9.308
SD	0.000306	SD	1.067
95% DL/2 (t) UCL	0.000248	95% H-Stat (DL/2) UCL	0.000237
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-9.698
		SD in Log Scale	1.346
		Mean in Original Scale	0.000158
		SD in Original Scale	0.000313
		95% Percentile Bootstrap UCL	0.000247
		95% BCA Bootstrap UCL	0.00028
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.665	Data appear Lognormal at 5% Significance Level	
Theta Star	0.000436		
nu star	23.96		
A-D Test Statistic	1.068	Nonparametric Statistics	
5% A-D Critical Value	0.778	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.778	Mean	0.000159
5% K-S Critical Value	0.211	SD	0.000307
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.86E-05
		95% KM (t) UCL	0.000241
Assuming Gamma Distribution		95% KM (z) UCL	0.000239
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.000239
Minimum	1E-09	95% KM (bootstrap t) UCL	0.000367
Maximum	0.0016	95% KM (BCA) UCL	0.000243
Mean	0.000284	95% KM (Percentile Bootstrap) UCL	0.000241
Median	0.000128	95% KM (Chebyshev) UCL	0.000371

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
SD	0.000379	97.5% KM (Chebyshev) UCL	0.000462
k star	0.246	99% KM (Chebyshev) UCL	0.000642
Theta star	0.00116		
Nu star	21.61	Potential UCLs to Use	
AppChi2	12.05	95% KM (BCA) UCL	0.000243
95% Gamma Approximate UCL	0.00051		
95% Adjusted Gamma UCL	0.000521		

Note: DL/2 is not a recommended method.

Methylcyclohexane

General Statistics			
Number of Valid Data	35	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	31
		Percent Non-Detects	88.57%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.37	Minimum Detected	-0.994
Maximum Detected	1	Maximum Detected	0
Mean of Detected	0.545	Mean of Detected	-0.701
SD of Detected	0.304	SD of Detected	0.47
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	35
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.692	Shapiro Wilk Test Statistic	0.73
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	18.33	Mean	0.943
SD	46.87	SD	1.93
95% DL/2 (t) UCL	31.73	95% H-Stat (DL/2) UCL	74.98
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-0.855
		SD in Log Scale	0.295
		Mean in Original Scale	0.444
		SD in Original Scale	0.146
		95% Percentile Bootstrap UCL	0.487
		95% BCA Bootstrap UCL	0.492
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.539	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.354		

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
nu star	12.31		
A-D Test Statistic	0.756	Nonparametric Statistics	
5% A-D Critical Value	0.659	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.659	Mean	0.431
5% K-S Critical Value	0.396	SD	0.148
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0443
		95% KM (t) UCL	0.506
Assuming Gamma Distribution		95% KM (z) UCL	0.504
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.502
Minimum	0.177	95% KM (bootstrap t) UCL	0.695
Maximum	1	95% KM (BCA) UCL	N/A
Mean	0.46	95% KM (Percentile Bootstrap) UCL	0.536
Median	0.427	95% KM (Chebyshev) UCL	0.624
SD	0.188	97.5% KM (Chebyshev) UCL	0.708
k star	5.804	99% KM (Chebyshev) UCL	0.872
Theta star	0.0792		
Nu star	406.3	Potential UCLs to Use	
AppChi2	360.6	95% KM (t) UCL	0.506
95% Gamma Approximate UCL	0.518	95% KM (% Bootstrap) UCL	0.536
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Methyl Mercury (Derived)

General Statistics			
Number of Valid Data	44	Number of Detected Data	18
Number of Distinct Detected Data	16	Number of Non-Detect Data	26
		Percent Non-Detects	59.09%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	2E-07	Minimum Detected	-15.42
Maximum Detected	0.000016	Maximum Detected	-11.04
Mean of Detected	2.9E-06	Mean of Detected	-13.54
SD of Detected	4.57E-06	SD of Detected	1.234
Minimum Non-Detect	2E-07	Minimum Non-Detect	-15.42
Maximum Non-Detect	0.000004	Maximum Non-Detect	-12.43
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	40
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	90.91%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.584	Shapiro Wilk Test Statistic	0.949
5% Shapiro Wilk Critical Value	0.897	5% Shapiro Wilk Critical Value	0.897
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.71E-06	Mean	-13.91
SD	3.06E-06	SD	1.067
95% DL/2 (t) UCL	2.48E-06	95% H-Stat (DL/2) UCL	2.34E-06
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-14.3
		SD in Log Scale	1.346
		Mean in Original Scale	1.58E-06

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
		SD in Original Scale	3.13E-06
		95% Percentile Bootstrap UCL	2.46E-06
		95% BCA Bootstrap UCL	2.68E-06
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.665	Data appear Lognormal at 5% Significance Level	
Theta Star	4.36E-06		
nu star	23.96		
A-D Test Statistic	1.068	Nonparametric Statistics	
5% A-D Critical Value	0.778	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.778	Mean	1.59E-06
5% K-S Critical Value	0.211	SD	3.07E-06
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.86E-07
		95% KM (t) UCL	2.41E-06
Assuming Gamma Distribution		95% KM (z) UCL	2.39E-06
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.39E-06
Minimum	1E-09	95% KM (bootstrap t) UCL	3.66E-06
Maximum	0.000016	95% KM (BCA) UCL	2.47E-06
Mean	2.84E-06	95% KM (Percentile Bootstrap) UCL	2.47E-06
Median	1.28E-06	95% KM (Chebyshev) UCL	3.71E-06
SD	3.79E-06	97.5% KM (Chebyshev) UCL	4.62E-06
k star	0.339	99% KM (Chebyshev) UCL	6.42E-06
Theta star	8.39E-06		
Nu star	29.85	Potential UCLs to Use	
AppChi2	18.38	95% KM (BCA) UCL	2.47E-06
95% Gamma Approximate UCL	4.62E-06		
95% Adjusted Gamma UCL	4.7E-06		
Note: DL/2 is not a recommended method.			

Naphthalene

General Statistics			
Number of Valid Data	46	Number of Detected Data	23
Number of Distinct Detected Data	21	Number of Non-Detect Data	23
		Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.44	Minimum Detected	-0.821
Maximum Detected	4800	Maximum Detected	8.476
Mean of Detected	678.2	Mean of Detected	4.632
SD of Detected	1197	SD of Detected	2.582
Minimum Non-Detect	9.3	Minimum Non-Detect	2.23
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	40
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	6
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	86.96%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.618	Shapiro Wilk Test Statistic	0.934
5% Shapiro Wilk Critical Value	0.914	5% Shapiro Wilk Critical Value	0.914
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	349	Mean	3.271
SD	901.7	SD	2.377

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
95% DL/2 (t) UCL	572.3	95% H-Stat (DL/2) UCL	923.7
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.448
		SD in Log Scale	3.023
		Mean in Original Scale	340.4
		SD in Original Scale	904.2
		95% Percentile Bootstrap UCL	570.9
		95% BCA Bootstrap UCL	653.4
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.338	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	2006		
nu star	15.55		
A-D Test Statistic	0.492	Nonparametric Statistics	
5% A-D Critical Value	0.837	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.837	Mean	341.3
5% K-S Critical Value	0.195	SD	894.2
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	134.8
		95% KM (t) UCL	567.7
Assuming Gamma Distribution		95% KM (z) UCL	563
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	565.2
Minimum	0.44	95% KM (bootstrap t) UCL	738.5
Maximum	4800	95% KM (BCA) UCL	566.1
Mean	689.9	95% KM (Percentile Bootstrap) UCL	579.6
Median	583.2	95% KM (Chebyshev) UCL	928.9
SD	843.6	97.5% KM (Chebyshev) UCL	1183
k star	0.614	99% KM (Chebyshev) UCL	1683
Theta star	1123		
Nu star	56.51	Potential UCLs to Use	
AppChi2	40.23	95% KM (t) UCL	567.7
95% Gamma Approximate UCL	969.1		
95% Adjusted Gamma UCL	979.9		

Note: DL/2 is not a recommended method.

Nickel

General Statistics			
Number of Valid Data	46	Number of Detected Data	17
Number of Distinct Detected Data	16	Number of Non-Detect Data	29
		Percent Non-Detects	63.04%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0016	Minimum Detected	-6.438
Maximum Detected	0.252	Maximum Detected	-1.378
Mean of Detected	0.0454	Mean of Detected	-3.953
SD of Detected	0.0698	SD of Detected	1.376
Minimum Non-Detect	0.0087	Minimum Non-Detect	-4.744
Maximum Non-Detect	0.5	Maximum Non-Detect	-0.693
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.622	Shapiro Wilk Test Statistic	0.964
5% Shapiro Wilk Critical Value	0.892	5% Shapiro Wilk Critical Value	0.892

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0387	Mean	-3.907
SD	0.0632	SD	1.06
95% DL/2 (t) UCL	0.0543	95% H-Stat (DL/2) UCL	0.0621
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.599
		SD in Log Scale	1.226
		Mean in Original Scale	0.0233
		SD in Original Scale	0.0456
		95% Percentile Bootstrap UCL	0.0357
		95% BCA Bootstrap UCL	0.0399
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.617	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.0735		
nu star	20.99		
A-D Test Statistic	0.737	Nonparametric Statistics	
5% A-D Critical Value	0.781	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.781	Mean	0.0237
5% K-S Critical Value	0.218	SD	0.046
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00731
		95% KM (t) UCL	0.036
Assuming Gamma Distribution		95% KM (z) UCL	0.0358
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0358
Minimum	0.0016	95% KM (bootstrap t) UCL	0.0531
Maximum	0.252	95% KM (BCA) UCL	0.0386
Mean	0.0454	95% KM (Percentile Bootstrap) UCL	0.0362
Median	0.0446	95% KM (Chebyshev) UCL	0.0556
SD	0.0417	97.5% KM (Chebyshev) UCL	0.0694
k star	1.61	99% KM (Chebyshev) UCL	0.0965
Theta star	0.0282		
Nu star	148.1	Potential UCLs to Use	
AppChi2	121	95% KM (t) UCL	0.036
95% Gamma Approximate UCL	0.0555		
95% Adjusted Gamma UCL	0.0559		

Note: DL/2 is not a recommended method.

o-Xylene

General Statistics			
Number of Valid Data	35	Number of Detected Data	17
Number of Distinct Detected Data	17	Number of Non-Detect Data	18
		Percent Non-Detects	51.43%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.43	Minimum Detected	-0.844
Maximum Detected	750	Maximum Detected	6.62
Mean of Detected	220	Mean of Detected	4.13
SD of Detected	242.1	SD of Detected	2.304
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	5	Maximum Non-Detect	1.609
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	21
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	14

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	60.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.846	Shapiro Wilk Test Statistic	0.881
5% Shapiro Wilk Critical Value	0.892	5% Shapiro Wilk Critical Value	0.892
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	107.5	Mean	1.971
SD	199.7	SD	2.712
95% DL/2 (t) UCL	164.6	95% H-Stat (DL/2) UCL	760.3
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	1.93
		SD in Log Scale	2.926
		Mean in Original Scale	108
		SD in Original Scale	199.5
		95% Percentile Bootstrap UCL	165.8
		95% BCA Bootstrap UCL	175.4
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.453	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	486		
nu star	15.39		
A-D Test Statistic	0.3	Nonparametric Statistics	
5% A-D Critical Value	0.798	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.798	Mean	107.2
5% K-S Critical Value	0.221	SD	197
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	34.33
		95% KM (t) UCL	165.3
Assuming Gamma Distribution		95% KM (z) UCL	163.7
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	164.3
Minimum	0.43	95% KM (bootstrap t) UCL	183.9
Maximum	750	95% KM (BCA) UCL	170.8
Mean	221.5	95% KM (Percentile Bootstrap) UCL	163.6
Median	193.5	95% KM (Chebyshev) UCL	256.8
SD	169.8	97.5% KM (Chebyshev) UCL	321.6
k star	0.87	99% KM (Chebyshev) UCL	448.8
Theta star	254.6		
Nu star	60.9	Potential UCLs to Use	
AppChi2	43.95	95% KM (t) UCL	165.3
95% Gamma Approximate UCL	306.9		
95% Adjusted Gamma UCL	311.8		

Note: DL/2 is not a recommended method.

Phenanthrene

General Statistics			
Number of Valid Data	46	Number of Detected Data	19
Number of Distinct Detected Data	11	Number of Non-Detect Data	27
		Percent Non-Detects	58.70%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.35	Minimum Detected	-1.05
Maximum Detected	2	Maximum Detected	0.693
Mean of Detected	1.343	Mean of Detected	0.225

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
SD of Detected	0.411	SD of Detected	0.436
Minimum Non-Detect	9.4	Minimum Non-Detect	2.241
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.906	Shapiro Wilk Test Statistic	0.738
5% Shapiro Wilk Critical Value	0.901	5% Shapiro Wilk Critical Value	0.901
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	25.78	Mean	1.663
SD	57.53	SD	1.65
95% DL/2 (t) UCL	40.02	95% H-Stat (DL/2) UCL	98.14
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	0.225
		SD in Log Scale	0.317
		Mean in Original Scale	1.305
		SD in Original Scale	0.329
		95% Percentile Bootstrap UCL	1.384
		95% BCA Bootstrap UCL	1.381
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	6.241	Data appear Normal at 5% Significance Level	
Theta Star	0.215		
nu star	237.2		
A-D Test Statistic	1.434	Nonparametric Statistics	
5% A-D Critical Value	0.742	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.742	Mean	1.343
5% K-S Critical Value	0.199	SD	0.4
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0942
		95% KM (t) UCL	1.501
Assuming Gamma Distribution		95% KM (z) UCL	1.498
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.503
Minimum	0.35	95% KM (bootstrap t) UCL	1.48
Maximum	2	95% KM (BCA) UCL	1.491
Mean	1.376	95% KM (Percentile Bootstrap) UCL	1.489
Median	1.428	95% KM (Chebyshev) UCL	1.753
SD	0.311	97.5% KM (Chebyshev) UCL	1.931
k star	12.9	99% KM (Chebyshev) UCL	2.28
Theta star	0.107		
Nu star	1187	Potential UCLs to Use	
AppChi2	1108	95% KM (t) UCL	1.501
95% Gamma Approximate UCL	1.474	95% KM (Percentile Bootstrap) UCL	1.489
95% Adjusted Gamma UCL	1.477		
Note: DL/2 is not a recommended method.			

Phenol

General Statistics			
Number of Valid Data	46	Number of Detected Data	32
Number of Distinct Detected Data	28	Number of Non-Detect Data	14

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
		Percent Non-Detects	30.43%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.1	Minimum Detected	0.0953
Maximum Detected	2400	Maximum Detected	7.783
Mean of Detected	222	Mean of Detected	2.895
SD of Detected	533.4	SD of Detected	2.259
Minimum Non-Detect	9.4	Minimum Non-Detect	2.241
Maximum Non-Detect	11	Maximum Non-Detect	2.398
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	29
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	17
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	63.04%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.485	Shapiro Wilk Test Statistic	0.905
5% Shapiro Wilk Critical Value	0.93	5% Shapiro Wilk Critical Value	0.93
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	156	Mean	2.503
SD	454.1	SD	1.969
95% DL/2 (t) UCL	268.4	95% H-Stat (DL/2) UCL	176.1
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.346
		SD in Log Scale	2.111
		Mean in Original Scale	155.7
		SD in Original Scale	454.2
		95% Percentile Bootstrap UCL	268.5
		95% BCA Bootstrap UCL	318.4
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.273	Data do not follow a Discernable Distribution (0.05)	
Theta Star	812.8		
nu star	17.48		
A-D Test Statistic	3.068	Nonparametric Statistics	
5% A-D Critical Value	0.864	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.864	Mean	155.6
5% K-S Critical Value	0.169	SD	449.2
Data not Gamma Distributed at 5% Significance Level		SE of Mean	67.3
		95% KM (t) UCL	268.6
Assuming Gamma Distribution		95% KM (z) UCL	266.3
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	268
Minimum	1E-09	95% KM (bootstrap t) UCL	391.6
Maximum	2400	95% KM (BCA) UCL	275.4
Mean	184.1	95% KM (Percentile Bootstrap) UCL	277.8
Median	14.34	95% KM (Chebyshev) UCL	448.9
SD	452.7	97.5% KM (Chebyshev) UCL	575.8
k star	0.155	99% KM (Chebyshev) UCL	825.2
Theta star	1186		
Nu star	14.28	Potential UCLs to Use	
AppChi2	6.76	99% KM (Chebyshev) UCL	825.2
95% Gamma Approximate UCL	388.7		
95% Adjusted Gamma UCL	398.6		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Selenium

General Statistics

Number of Valid Data	46	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	41
		Percent Non-Detects	89.13%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0249	Minimum Detected	-3.693
Maximum Detected	0.128	Maximum Detected	-2.056
Mean of Detected	0.0785	Mean of Detected	-2.669
SD of Detected	0.037	SD of Detected	0.613
Minimum Non-Detect	0.0041	Minimum Non-Detect	-5.497
Maximum Non-Detect	0.113	Maximum Non-Detect	-2.18

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	45
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	1
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	97.83%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.963	Shapiro Wilk Test Statistic	0.863
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0214	Mean	-4.289
SD	0.0248	SD	0.952
95% DL/2 (t) UCL	0.0276	95% H-Stat (DL/2) UCL	0.0277
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-4.82
		SD in Log Scale	1.089
		Mean in Original Scale	0.0159
		SD in Original Scale	0.0254
		95% Percentile Bootstrap UCL	0.0227
		95% BCA Bootstrap UCL	0.0237
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.813	Data appear Normal at 5% Significance Level	
Theta Star	0.0433		
nu star	18.13		
A-D Test Statistic	0.394	Nonparametric Statistics	
5% A-D Critical Value	0.681	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.681	Mean	0.0308
5% K-S Critical Value	0.358	SD	0.02
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00332
		95% KM (t) UCL	0.0364
Assuming Gamma Distribution		95% KM (z) UCL	0.0363
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0596

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum	0.0249	95% KM (bootstrap t) UCL	0.0347
Maximum	0.128	95% KM (BCA) UCL	0.0897
Mean	0.082	95% KM (Percentile Bootstrap) UCL	0.0812
Median	0.0833	95% KM (Chebyshev) UCL	0.0453
SD	0.0176	97.5% KM (Chebyshev) UCL	0.0515
k star	16.76	99% KM (Chebyshev) UCL	0.0638
Theta star	0.00489		
Nu star	1542	Potential UCLs to Use	
AppChi2	1452	95% KM (t) UCL	0.0364
95% Gamma Approximate UCL	0.0871	95% KM (Percentile Bootstrap) UCL	0.0812
95% Adjusted Gamma UCL	0.0873		

Note: DL/2 is not a recommended method.

Silver

General Statistics			
Number of Valid Data	46	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	41
		Percent Non-Detects	89.13%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00065	Minimum Detected	-7.339
Maximum Detected	0.01	Maximum Detected	-4.605
Mean of Detected	0.00627	Mean of Detected	-5.43
SD of Detected	0.00407	SD of Detected	1.156
Minimum Non-Detect	0.0062	Minimum Non-Detect	-5.083
Maximum Non-Detect	0.1	Maximum Non-Detect	-2.303
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 5 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.869	Shapiro Wilk Test Statistic	0.793
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00866	Mean	-5.173
SD	0.0119	SD	0.79
95% DL/2 (t) UCL	0.0116	95% H-Stat (DL/2) UCL	0.011
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-6.297
		SD in Log Scale	0.817
		Mean in Original Scale	0.00256
		SD in Original Scale	0.00231
		95% Percentile Bootstrap UCL	0.00315
		95% BCA Bootstrap UCL	0.00322

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.751	Data appear Normal at 5% Significance Level	
Theta Star	0.00835		
nu star	7.509		
A-D Test Statistic	0.553	Nonparametric Statistics	
5% A-D Critical Value	0.686	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.686	Mean	0.003
5% K-S Critical Value	0.362	SD	0.00275
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0011
		95% KM (t) UCL	0.00484
Assuming Gamma Distribution		95% KM (z) UCL	0.0048
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.00581
Minimum	1E-09	95% KM (bootstrap t) UCL	0.00506
Maximum	0.01	95% KM (BCA) UCL	0.00903
Mean	0.0045	95% KM (Percentile Bootstrap) UCL	0.00853
Median	0.0045	95% KM (Chebyshev) UCL	0.00778
SD	0.00293	97.5% KM (Chebyshev) UCL	0.00985
k star	0.429	99% KM (Chebyshev) UCL	0.0139
Theta star	0.0105		
Nu star	39.45	Potential UCLs to Use	
AppChi2	26.06	95% KM (t) UCL	0.00484
95% Gamma Approximate UCL	0.00681	95% KM (Percentile Bootstrap) UCL	0.00853
95% Adjusted Gamma UCL	0.00691		

Note: DL/2 is not a recommended method.

Sodium

General Statistics			
Number of Valid Observations	46	Number of Distinct Observations	46
Raw Statistics		Log-transformed Statistics	
Minimum	26.3	Minimum of Log Data	3.27
Maximum	10250	Maximum of Log Data	9.235
Mean	2706	Mean of log Data	6.48
Median	567	SD of log Data	2.063
SD	3396		
Coefficient of Variation	1.255		
Skewness	1.031		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.754	Shapiro Wilk Test Statistic	0.883
Shapiro Wilk Critical Value	0.945	Shapiro Wilk Critical Value	0.945
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	3547	95% H-UCL	16911
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	14092
95% Adjusted-CLT UCL	3611	97.5% Chebyshev (MVUE) UCL	18108
95% Modified-t UCL	3560	99% Chebyshev (MVUE) UCL	25997
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.438	Data do not follow a Discernable Distribution (0.05)	
Theta Star	6176		
MLE of Mean	2706		
MLE of Standard Deviation	4088		
nu star	40.32		
Approximate Chi Square Value (.05)	26.77	Nonparametric Statistics	

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Adjusted Level of Significance	0.0448	95% CLT UCL	3530
Adjusted Chi Square Value	26.41	95% Jackknife UCL	3547
		95% Standard Bootstrap UCL	3507
Anderson-Darling Test Statistic	1.747	95% Bootstrap-t UCL	3606
Anderson-Darling 5% Critical Value	0.825	95% Hall's Bootstrap UCL	3581
Kolmogorov-Smirnov Test Statistic	0.163	95% Percentile Bootstrap UCL	3575
Kolmogorov-Smirnov 5% Critical Value	0.139	95% BCA Bootstrap UCL	3638
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	4889
		97.5% Chebyshev(Mean, Sd) UCL	5834
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	7689
95% Approximate Gamma UCL	4076		
95% Adjusted Gamma UCL	4132		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	7689

Styrene

General Statistics			
Number of Valid Data	45	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	41
		Percent Non-Detects	91.11%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	70	Minimum Detected	4.248
Maximum Detected	210	Maximum Detected	5.347
Mean of Detected	137.5	Mean of Detected	4.851
SD of Detected	57.37	SD of Detected	0.454
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	45
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.97	Shapiro Wilk Test Statistic	0.953
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	37.86	Mean	1.527
SD	66.33	SD	2.353
95% DL/2 (t) UCL	54.47	95% H-Stat (DL/2) UCL	214.3
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	2.978
		SD in Log Scale	0.88
		Mean in Original Scale	30.49
		SD in Original Scale	38.89
		95% Percentile Bootstrap UCL	40.69

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
		95% BCA Bootstrap UCL	44.14
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.933	Data appear Normal at 5% Significance Level	
Theta Star	71.13		
nu star	15.46		
A-D Test Statistic	0.273	Nonparametric Statistics	
5% A-D Critical Value	0.658	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.658	Mean	76.59
5% K-S Critical Value	0.395	SD	25.22
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	4.53
		95% KM (t) UCL	84.2
Assuming Gamma Distribution		95% KM (z) UCL	84.04
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	114
Minimum	20.78	95% KM (bootstrap t) UCL	81.87
Maximum	218.5	95% KM (BCA) UCL	210
Mean	138.2	95% KM (Percentile Bootstrap) UCL	145.3
Median	142.5	95% KM (Chebyshev) UCL	96.33
SD	51.41	97.5% KM (Chebyshev) UCL	104.9
k star	4.945	99% KM (Chebyshev) UCL	121.7
Theta star	27.95		
Nu star	445	Potential UCLs to Use	
AppChi2	397.1	95% KM (t) UCL	84.2
95% Gamma Approximate UCL	154.9	95% KM (Percentile Bootstrap) UCL	145.3
95% Adjusted Gamma UCL	N/A		

Note: DL/2 is not a recommended method.

Thallium

General Statistics			
Number of Valid Data	46	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	40
		Percent Non-Detects	86.96%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0046	Minimum Detected	-5.382
Maximum Detected	0.12	Maximum Detected	-2.12
Mean of Detected	0.0677	Mean of Detected	-3.102
SD of Detected	0.0449	SD of Detected	1.247
Minimum Non-Detect	0.01	Minimum Non-Detect	-4.605
Maximum Non-Detect	0.158	Maximum Non-Detect	-1.845
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.942	Shapiro Wilk Test Statistic	0.813
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0257	Mean	-4.07
SD	0.0262	SD	0.915
95% DL/2 (t) UCL	0.0321	95% H-Stat (DL/2) UCL	0.033
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.046
		SD in Log Scale	1.219
		Mean in Original Scale	0.0149
		SD in Original Scale	0.0262
		95% Percentile Bootstrap UCL	0.0217
		95% BCA Bootstrap UCL	0.0232
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.794	Data appear Normal at 5% Significance Level	
Theta Star	0.0853		
nu star	9.522		
A-D Test Statistic	0.477	Nonparametric Statistics	
5% A-D Critical Value	0.71	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.71	Mean	0.0138
5% K-S Critical Value	0.338	SD	0.0264
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00442
		95% KM (t) UCL	0.0212
Assuming Gamma Distribution		95% KM (z) UCL	0.021
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0265
Minimum	0.0046	95% KM (bootstrap t) UCL	0.0206
Maximum	0.12	95% KM (BCA) UCL	0.0884
Mean	0.07	95% KM (Percentile Bootstrap) UCL	0.0725
Median	0.0702	95% KM (Chebyshev) UCL	0.033
SD	0.0152	97.5% KM (Chebyshev) UCL	0.0413
k star	8.802	99% KM (Chebyshev) UCL	0.0577
Theta star	0.00795		
Nu star	809.7	Potential UCLs to Use	
AppChi2	744.7	95% KM (t) UCL	0.0212
95% Gamma Approximate UCL	0.0761	95% KM (Percentile Bootstrap) UCL	0.0725
95% Adjusted Gamma UCL	0.0763		

Note: DL/2 is not a recommended method.

Toluene

General Statistics			
Number of Valid Data	46	Number of Detected Data	22
Number of Distinct Detected Data	22	Number of Non-Detect Data	24
		Percent Non-Detects	52.17%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.36	Minimum Detected	-1.022
Maximum Detected	9200	Maximum Detected	9.127
Mean of Detected	2342	Mean of Detected	4.796
SD of Detected	3417	SD of Detected	3.843
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	500	Maximum Non-Detect	6.215
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	33
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	13
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	71.74%

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.684	Shapiro Wilk Test Statistic	0.85
5% Shapiro Wilk Critical Value	0.911	5% Shapiro Wilk Critical Value	0.911
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1135	Mean	2.708
SD	2611	SD	3.644
95% DL/2 (t) UCL	1781	95% H-Stat (DL/2) UCL	101861
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	1.847
		SD in Log Scale	4.15
		Mean in Original Scale	1121
		SD in Original Scale	2616
		95% Percentile Bootstrap UCL	1803
		95% BCA Bootstrap UCL	1895
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.239	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	9815		
nu star	10.5		
A-D Test Statistic	0.903	Nonparametric Statistics	
5% A-D Critical Value	0.874	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.874	Mean	1120
5% K-S Critical Value	0.204	SD	2588
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	390.5
		95% KM (t) UCL	1776
Assuming Gamma Distribution		95% KM (z) UCL	1763
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1768
Minimum	0.36	95% KM (bootstrap t) UCL	2028
Maximum	9200	95% KM (BCA) UCL	1812
Mean	2217	95% KM (Percentile Bootstrap) UCL	1778
Median	1673	95% KM (Chebyshev) UCL	2823
SD	2389	97.5% KM (Chebyshev) UCL	3559
k star	0.434	99% KM (Chebyshev) UCL	5006
Theta star	5106		
Nu star	39.94	Potential UCLs to Use	
AppChi2	26.46	95% KM (t) UCL	1776
95% Gamma Approximate UCL	3346		
95% Adjusted Gamma UCL	3391		

Note: DL/2 is not a recommended method.

Vanadium

General Statistics

Number of Valid Data	46	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	40
		Percent Non-Detects	86.96%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0028	Minimum Detected	-5.878
Maximum Detected	0.176	Maximum Detected	-1.737
Mean of Detected	0.0658	Mean of Detected	-3.724
SD of Detected	0.0781	SD of Detected	1.815

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum Non-Detect	0.0014	Minimum Non-Detect	-6.571
Maximum Non-Detect	0.5	Maximum Non-Detect	-0.693
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	46
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	0
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.78	Shapiro Wilk Test Statistic	0.869
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0459	Mean	-3.753
SD	0.066	SD	1.163
95% DL/2 (t) UCL	0.0622	95% H-Stat (DL/2) UCL	0.0764
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.797
		SD in Log Scale	1.695
		Mean in Original Scale	0.0134
		SD in Original Scale	0.034
		95% Percentile Bootstrap UCL	0.0224
		95% BCA Bootstrap UCL	0.0269
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.418	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.157		
nu star	5.016		
A-D Test Statistic	0.423	Nonparametric Statistics	
5% A-D Critical Value	0.729	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.729	Mean	0.0154
5% K-S Critical Value	0.346	SD	0.0354
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00666
		95% KM (t) UCL	0.0266
Assuming Gamma Distribution		95% KM (z) UCL	0.0263
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0259
Minimum	1E-09	95% KM (bootstrap t) UCL	0.0298
Maximum	0.176	95% KM (BCA) UCL	0.0464
Mean	0.05	95% KM (Percentile Bootstrap) UCL	0.038
Median	0.0534	95% KM (Chebyshev) UCL	0.0444
SD	0.0382	97.5% KM (Chebyshev) UCL	0.057
k star	0.282	99% KM (Chebyshev) UCL	0.0816
Theta star	0.177		
Nu star	25.93	Potential UCLs to Use	
AppChi2	15.32	95% KM (t) UCL	0.0266
95% Gamma Approximate UCL	0.0846		
95% Adjusted Gamma UCL	0.0861		

Note: DL/2 is not a recommended method.

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Xylenes (total)

General Statistics

Number of Valid Data	11	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	5
		Percent Non-Detects	45.45%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.5	Minimum Detected	0.916
Maximum Detected	7500	Maximum Detected	8.923
Mean of Detected	2527	Mean of Detected	6.389
SD of Detected	3027	SD of Detected	2.897
Minimum Non-Detect	0.5	Minimum Non-Detect	-0.693
Maximum Non-Detect	300	Maximum Non-Detect	5.704

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	6
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	5
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	54.55%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.829	Shapiro Wilk Test Statistic	0.832
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1392	Mean	3.465
SD	2506	SD	4.322
95% DL/2 (t) UCL	2762	95% H-Stat (DL/2) UCL	4.44E+10
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	3.211
		SD in Log Scale	4.231
		Mean in Original Scale	1379
		SD in Original Scale	2514
		95% Percentile Bootstrap UCL	2642
		95% BCA Bootstrap UCL	3013
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.335	Data appear Normal at 5% Significance Level	
Theta Star	7551		
nu star	4.016		
A-D Test Statistic	0.26	Nonparametric Statistics	
5% A-D Critical Value	0.744	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.744	Mean	1380
5% K-S Critical Value	0.351	SD	2397
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	791.6
		95% KM (t) UCL	2814
Assuming Gamma Distribution		95% KM (z) UCL	2682
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2669

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
Minimum	2.5	95% KM (bootstrap t) UCL	6605
Maximum	7500	95% KM (BCA) UCL	3429
Mean	2271	95% KM (Percentile Bootstrap) UCL	2936
Median	1854	95% KM (Chebyshev) UCL	4830
SD	2168	97.5% KM (Chebyshev) UCL	6323
k star	0.605	99% KM (Chebyshev) UCL	9256
Theta star	3754		
Nu star	13.31	Potential UCLs to Use	
AppChi2	6.101	95% KM (t) UCL	2814
95% Gamma Approximate UCL	4954	95% KM (Percentile Bootstrap) UCL	2936
95% Adjusted Gamma UCL	5675		

Note: DL/2 is not a recommended method.

Xylenes, m & p

General Statistics			
Number of Valid Data	35	Number of Detected Data	17
Number of Distinct Detected Data	17	Number of Non-Detect Data	18
		Percent Non-Detects	51.43%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.38	Minimum Detected	-0.968
Maximum Detected	2500	Maximum Detected	7.824
Mean of Detected	609.5	Mean of Detected	4.288
SD of Detected	803.6	SD of Detected	3.117
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	210	Maximum Non-Detect	5.347
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	27
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	8
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	77.14%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.778	Shapiro Wilk Test Statistic	0.874
5% Shapiro Wilk Critical Value	0.892	5% Shapiro Wilk Critical Value	0.892
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	299.8	Mean	2.267
SD	630.4	SD	3.081
95% DL/2 (t) UCL	480	95% H-Stat (DL/2) UCL	7716
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	1.622
		SD in Log Scale	3.668
		Mean in Original Scale	296.8
		SD in Original Scale	631.7
		95% Percentile Bootstrap UCL	475.2
		95% BCA Bootstrap UCL	526.3
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.304	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	2008		
nu star	10.32		
A-D Test Statistic	0.487	Nonparametric Statistics	
5% A-D Critical Value	0.837	Kaplan-Meier (KM) Method	

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
K-S Test Statistic	0.837	Mean	296.8
5% K-S Critical Value	0.226	SD	622.6
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	108.5
		95% KM (t) UCL	480.3
Assuming Gamma Distribution		95% KM (z) UCL	475.3
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	477.4
Minimum	0.38	95% KM (bootstrap t) UCL	579.4
Maximum	2500	95% KM (BCA) UCL	497.3
Mean	597.5	95% KM (Percentile Bootstrap) UCL	483
Median	532.1	95% KM (Chebyshev) UCL	769.7
SD	555.2	97.5% KM (Chebyshev) UCL	974.3
k star	0.564	99% KM (Chebyshev) UCL	1376
Theta star	1059		
Nu star	39.49	Potential UCLs to Use	
AppChi2	26.1	95% KM (t) UCL	480.3
95% Gamma Approximate UCL	904.3		
95% Adjusted Gamma UCL	922.6		

Note: DL/2 is not a recommended method.

Zinc

General Statistics			
Number of Valid Data	46	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	35
		Percent Non-Detects	76.09%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0055	Minimum Detected	-5.203
Maximum Detected	0.199	Maximum Detected	-1.614
Mean of Detected	0.0468	Mean of Detected	-3.54
SD of Detected	0.0546	SD of Detected	1.032
Minimum Non-Detect	0.005	Minimum Non-Detect	-5.298
Maximum Non-Detect	0.111	Maximum Non-Detect	-2.198
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	45
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	1
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	97.83%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.695	Shapiro Wilk Test Statistic	0.971
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.022	Mean	-4.211
SD	0.0308	SD	0.78
95% DL/2 (t) UCL	0.0296	95% H-Stat (DL/2) UCL	0.0259
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-5.014
		SD in Log Scale	1.217
		Mean in Original Scale	0.0155
		SD in Original Scale	0.0315
		95% Percentile Bootstrap UCL	0.0239
		95% BCA Bootstrap UCL	0.0279
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	

Electronic Appendix F6, Table 6
Honeywell - Wastebeds 1-8 Site
Baseline Ecological Risk Assessment
Pro-UCL version 4.0 Output - Shallow Groundwater

General UCL Statistics for Data Sets with Non-Detects

User Selected Options			
Full Precision	OFF		
Confidence Coefficient	95%		
Number of Bootstrap Operations	2000		
k star (bias corrected)	0.921	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.0508		
nu star	20.27		
A-D Test Statistic	0.338	Nonparametric Statistics	
5% A-D Critical Value	0.748	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.748	Mean	0.0172
5% K-S Critical Value	0.261	SD	0.0308
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00489
		95% KM (t) UCL	0.0254
Assuming Gamma Distribution		95% KM (z) UCL	0.0252
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	0.0248
Minimum	0.0055	95% KM (bootstrap t) UCL	0.0332
Maximum	0.199	95% KM (BCA) UCL	0.0325
Mean	0.0442	95% KM (Percentile Bootstrap) UCL	0.0284
Median	0.041	95% KM (Chebyshev) UCL	0.0385
SD	0.0275	97.5% KM (Chebyshev) UCL	0.0477
k star	3.48	99% KM (Chebyshev) UCL	0.0659
Theta star	0.0127		
Nu star	320.1	Potential UCLs to Use	
AppChi2	279.7	95% KM (t) UCL	0.0254
95% Gamma Approximate UCL	0.0506		
95% Adjusted Gamma UCL	0.0508		

Note: DL/2 is not a recommended method.