

MW-111 1,1-DCE											
General Statistics											
Total Number of Observations					6	Number of Distinct Observations					6
Number of Detects					5	Number of Non-Detects					1
Number of Distinct Detects					5	Number of Distinct Non-Detects					1
Minimum Detect					0.36	Minimum Non-Detect					0.55
Maximum Detect					0.64	Maximum Non-Detect					0.55
Variance Detects					0.0109	Percent Non-Detects					16.67%
Mean Detects					0.504	SD Detects					0.105
Median Detects					0.49	CV Detects					0.207
Skewness Detects					-0.123	Kurtosis Detects					0.196
Mean of Logged Detects					-0.703	SD of Logged Detects					0.215
Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,											
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,											
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).											
The Chebyshev UCL often results in gross overestimates of the mean.											
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.											
Normal GOF Test on Detects Only											
Shapiro Wilk Test Statistic					0.988	Shapiro Wilk GOF Test					
1% Shapiro Wilk Critical Value					0.686	Detected Data appear Normal at 1% Significance Level					
Lilliefors Test Statistic					0.173	Lilliefors GOF Test					
1% Lilliefors Critical Value					0.396	Detected Data appear Normal at 1% Significance Level					
Detected Data appear Normal at 1% Significance Level											
Note GOF tests may be unreliable for small sample sizes											
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
KM Mean					0.493	KM Standard Error of Mean					0.0436
90KM SD					0.0917	95% KM (BCA) UCL					0.555
95% KM (t) UCL					0.581	95% KM (Percentile Bootstrap) UCL					0.56
95% KM (z) UCL					0.565	95% KM Bootstrap t UCL					0.58
90% KM Chebyshev UCL					0.624	95% KM Chebyshev UCL					0.683
97.5% KM Chebyshev UCL					0.766	99% KM Chebyshev UCL					0.927
Gamma GOF Tests on Detected Observations Only											
A-D Test Statistic					0.209	Anderson-Darling GOF Test					
5% A-D Critical Value					0.679	Detected data appear Gamma Distributed at 5% Significance Level					

K-S Test Statistic				0.182	Kolmogorov-Smirnov GOF					
5% K-S Critical Value				0.357	Detected data appear Gamma Distributed at 5% Significance Level					
Detected data appear Gamma Distributed at 5% Significance Level										
Note GOF tests may be unreliable for small sample sizes										
Gamma Statistics on Detected Data Only										
k hat (MLE)				27.87	k star (bias corrected MLE)				11.28	
Theta hat (MLE)				0.0181	Theta star (bias corrected MLE)				0.0447	
nu hat (MLE)				278.7	nu star (bias corrected)				112.8	
Mean (detects)				0.504						
Gamma ROS Statistics using Imputed Non-Detects										
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
For such situations, GROS method may yield incorrect values of UCLs and BTVs										
This is especially true when the sample size is small.										
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
Minimum				0.36	Mean				0.493	
Maximum				0.64	Median				0.48	
SD				0.0973	CV				0.197	
k hat (MLE)				30.76	k star (bias corrected MLE)				15.49	
Theta hat (MLE)				0.016	Theta star (bias corrected MLE)				0.0318	
nu hat (MLE)				369.1	nu star (bias corrected)				185.9	
Adjusted Level of Significance (β)										
Approximate Chi Square Value (185.89, α)					155.4	Adjusted Chi Square Value (185.89, β)				145.2
95% Gamma Approximate UCL					0.59	95% Gamma Adjusted UCL				0.631
Estimates of Gamma Parameters using KM Estimates										
Mean (KM)				0.493	SD (KM)				0.0917	
Variance (KM)				0.0084	SE of Mean (KM)				0.0436	
k hat (KM)				28.97	k star (KM)				14.6	
nu hat (KM)				347.7	nu star (KM)				175.2	
theta hat (KM)				0.017	theta star (KM)				0.0338	
80% gamma percentile (KM)					0.597	90% gamma percentile (KM)				0.664
95% gamma percentile (KM)					0.723	99% gamma percentile (KM)				0.842
Gamma Kaplan-Meier (KM) Statistics										
Approximate Chi Square Value (175.17, α)					145.6	Adjusted Chi Square Value (175.17, β)				135.8
95% KM Approximate Gamma UCL					0.594	95% KM Adjusted Gamma UCL				0.636

Lognormal GOF Test on Detected Observations Only												
Shapiro Wilk Test Statistic				0.973	Shapiro Wilk GOF Test							
10% Shapiro Wilk Critical Value				0.806	Detected Data appear Lognormal at 10% Significance Level							
Lilliefors Test Statistic				0.205	Lilliefors GOF Test							
10% Lilliefors Critical Value				0.319	Detected Data appear Lognormal at 10% Significance Level							
Detected Data appear Lognormal at 10% Significance Level												
Note GOF tests may be unreliable for small sample sizes												
Lognormal ROS Statistics Using Imputed Non-Detects												
Mean in Original Scale				0.492	Mean in Log Scale						-0.725	
SD in Original Scale				0.0977	SD in Log Scale						0.2	
95% t UCL (assumes normality of ROS data)				0.573	95% Percentile Bootstrap UCL						0.552	
95% BCA Bootstrap UCL				0.557	95% Bootstrap t UCL						0.596	
95% H-UCL (Log ROS)				0.594								
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution												
KM Mean (logged)				-0.724	KM Geo Mean						0.485	
KM SD (logged)				0.19	95% Critical H Value (KM-Log)						2.055	
KM Standard Error of Mean (logged)				0.0917	95% H-UCL (KM -Log)						0.588	
KM SD (logged)				0.19	95% Critical H Value (KM-Log)						2.055	
KM Standard Error of Mean (logged)				0.0917								
DL/2 Statistics												
DL/2 Normal					DL/2 Log-Transformed							
Mean in Original Scale				0.466	Mean in Log Scale						-0.801	
SD in Original Scale				0.132	SD in Log Scale						0.308	
95% t UCL (Assumes normality)				0.575	95% H-Stat UCL						0.64	
DL/2 is not a recommended method, provided for comparisons and historical reasons												
Nonparametric Distribution Free UCL Statistics												
Detected Data appear Normal Distributed at 1% Significance Level												
Suggested UCL to Use												
95% KM (t) UCL					0.581							
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												