

MW-82 PCE												
General Statistics												
Total Number of Observations					6	Number of Distinct Observations					5	
						Number of Missing Observations					0	
Minimum					1.1	Mean					1.417	
Maximum					1.8	Median					1.4	
SD					0.232	Std. Error of Mean					0.0946	
Coefficient of Variation					0.164	Skewness					0.568	
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												
Shapiro Wilk Test Statistic					0.955	Shapiro Wilk GOF Test						
1% Shapiro Wilk Critical Value					0.713	Data appear Normal at 1% Significance Level						
Lilliefors Test Statistic					0.195	Lilliefors GOF Test						
1% Lilliefors Critical Value					0.373	Data appear Normal at 1% Significance Level						
Data appear Normal at 1% Significance Level												
Note GOF tests may be unreliable for small sample sizes												
Assuming Normal Distribution												
95% Normal UCL						95% UCLs (Adjusted for Skewness)						
95% Student's-t UCL					1.607	95% Adjusted-CLT UCL (Chen-1995)						1.596
						95% Modified-t UCL (Johnson-1978)						1.611
Gamma GOF Test												
A-D Test Statistic					0.26	Anderson-Darling Gamma GOF Test						
5% A-D Critical Value					0.697	Detected data appear Gamma Distributed at 5% Significance Level						
K-S Test Statistic					0.179	Kolmogorov-Smirnov Gamma GOF Test						

5% K-S Critical Value				0.332	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											
k hat (MLE)				45.64	k star (bias corrected MLE)					22.93	
Theta hat (MLE)				0.031	Theta star (bias corrected MLE)					0.0618	
nu hat (MLE)				547.7	nu star (bias corrected)					275.2	
MLE Mean (bias corrected)					1.417	MLE Sd (bias corrected)					0.296
						Approximate Chi Square Value (0.05)					237.8
Adjusted Level of Significance					0.0122	Adjusted Chi Square Value					225.1
Assuming Gamma Distribution											
95% Approximate Gamma UCL					1.64	95% Adjusted Gamma UCL					1.732
Lognormal GOF Test											
Shapiro Wilk Test Statistic					0.968	Shapiro Wilk Lognormal GOF Test					
10% Shapiro Wilk Critical Value					0.826	Data appear Lognormal at 10% Significance Level					
Lilliefors Test Statistic				0.171	Lilliefors Lognormal GOF Test						
10% Lilliefors Critical Value					0.298	Data appear Lognormal at 10% Significance Level					
Data appear Lognormal at 10% Significance Level											
Note GOF tests may be unreliable for small sample sizes											
Lognormal Statistics											
Minimum of Logged Data					0.0953	Mean of logged Data					0.337
Maximum of Logged Data					0.588	SD of logged Data					0.162
Assuming Lognormal Distribution											
95% H-UCL					1.643	90% Chebyshev (MVUE) UCL					1.698
95% Chebyshev (MVUE) UCL					1.826	97.5% Chebyshev (MVUE) UCL					2.002
99% Chebyshev (MVUE) UCL					2.35						
Nonparametric Distribution Free UCL Statistics											

Data appear to follow a Discernible Distribution												
Nonparametric Distribution Free UCLs												
95% CLT UCL					1.572	95% BCA Bootstrap UCL					1.55	
95% Standard Bootstrap UCL					1.559	95% Bootstrap-t UCL					1.641	
95% Hall's Bootstrap UCL					1.781	95% Percentile Bootstrap UCL					1.55	
90% Chebyshev(Mean, Sd) UCL					1.7	95% Chebyshev(Mean, Sd) UCL					1.829	
97.5% Chebyshev(Mean, Sd) UCL					2.007	99% Chebyshev(Mean, Sd) UCL					2.358	
Suggested UCL to Use												
95% Student's-t UCL					1.607							
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.												