	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Uncensored Full Data Sets										
2											
3		User Selected Options									
4		Date/Time of Computation			ProUCL 5.110/13/2016 2:42:19 PM						
5		From File			ProUCL input 01-007(a) 0-1, 0-5, 0-10.xls						
6		Full Precision			OFF						
7		Confidence Coefficient			95%						
8	Number of Bootstrap Operations				2000						
9											
10											
11	Plutonium-239/240										
12											
13	General Statistics										
14	Total Number of Observations				15		Number of Distinct Observations				15
15							Number of Missing Observations				0
16	Minimum				0.17		Mean				6.797
17	Maximum				22.3		Median				5.82
18	SD				7.068		Std. Error of Mean				1.825
19	Coefficient of Variation				1.04		Skewness				1.372
20											
21	Normal GOF Test										
22	Shapiro Wilk Test Statistic				0.82		Shapiro Wilk GOF Test				
23	5% Shapiro Wilk Critical Value				0.881		Data Not Normal at 5% Significance Level				
24	Lilliefors Test Statistic				0.19		Lilliefors GOF Test				
25	5% Lilliefors Critical Value				0.22		Data appear Normal at 5% Significance Level				
26	Data appear Approximate Normal at 5% Significance Level										
27											
28	Assuming Normal Distribution										
29	95% Normal UCL						95% UCLs (Adjusted for Skewness)				
30	95% Student's-t UCL				10.01		95% Adjusted-CLT UCL (Chen-1995)				10.49
31							95% Modified-t UCL (Johnson-1978)				10.12
32											
33	Gamma GOF Test										
34	A-D Test Statistic				0.243		Anderson-Darling Gamma GOF Test				
35	5% A-D Critical Value				0.77		Detected data appear Gamma Distributed at 5% Significance Level				
36	K-S Test Statistic				0.125		Kolmogorov-Smirnov Gamma GOF Test				
37	5% K-S Critical Value				0.229		Detected data appear Gamma Distributed at 5% Significance Level				
38	Detected data appear Gamma Distributed at 5% Significance Level										
39											
40	Gamma Statistics										
41	k hat (MLE)				0.846		k star (bias corrected MLE)				0.721
42	Theta hat (MLE)				8.033		Theta star (bias corrected MLE)				9.423
43	nu hat (MLE)				25.38		nu star (bias corrected)				21.64
44	MLE Mean (bias corrected)				6.797		MLE Sd (bias corrected)				8.003
45							Approximate Chi Square Value (0.05)				12.07
46	Adjusted Level of Significance				0.0324		Adjusted Chi Square Value				11.2
47											
48	Assuming Gamma Distribution										
49	95% Approximate Gamma UCL (use when n>=50))				12.19		95% Adjusted Gamma UCL (use when n<50)				13.14
50											
51	Lognormal GOF Test										
52	Shapiro Wilk Test Statistic				0.937		Shapiro Wilk Lognormal GOF Test				

	A	B	C	D	E	F	G	H	I	J	K	L
53				5% Shapiro Wilk Critical Value		0.881		Data appear Lognormal at 5% Significance Level				
54				Lilliefors Test Statistic		0.18		**Lilliefors Lognormal GOF Test**				
55				5% Lilliefors Critical Value		0.22		Data appear Lognormal at 5% Significance Level				
56					**Data appear Lognormal at 5% Significance Level**							
57												
58					**Lognormal Statistics**							
59				Minimum of Logged Data		-1.772				Mean of logged Data		1.22
60				Maximum of Logged Data		3.105				SD of logged Data		1.439
61												
62					**Assuming Lognormal Distribution**							
63					95% H-UCL	36.62				90% Chebyshev (MVUE) UCL		19.17
64				95% Chebyshev (MVUE) UCL		24.02				97.5% Chebyshev (MVUE) UCL		30.76
65				99% Chebyshev (MVUE) UCL		43.99						
66												
67					**Nonparametric Distribution Free UCL Statistics**							
68					**Data appear to follow a Discernible Distribution at 5% Significance Level**							
69												
70					**Nonparametric Distribution Free UCLs**							
71					95% CLT UCL	9.799				95% Jackknife UCL		10.01
72				95% Standard Bootstrap UCL		9.658				95% Bootstrap-t UCL		11.93
73				95% Hall's Bootstrap UCL		13.18				95% Percentile Bootstrap UCL		9.923
74				95% BCA Bootstrap UCL		10.51						
75				90% Chebyshev(Mean, Sd) UCL		12.27				95% Chebyshev(Mean, Sd) UCL		14.75
76				97.5% Chebyshev(Mean, Sd) UCL		18.19				99% Chebyshev(Mean, Sd) UCL		24.96
77												
78					**Suggested UCL to Use**							
79				95% Student's-t UCL		10.01						
80												
81				When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test								
82				When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL								
83												
84				Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
85				Recommendations are based upon data size, data distribution, and skewness.								
86				These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).								
87				However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
88												