	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			3/3/2015 9:03:35 AM								
5	From File			EPC_204SubEU5.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	Arsenic											
12												
13	General Statistics											
14	Total Number of Observations					11	Number of Distinct Observations					5
15							Number of Missing Observations					0
16	Minimum					3	Mean					17.56
17	Maximum					107	Median					10
18	SD					29.78	Std. Error of Mean					8.979
19	Coefficient of Variation					1.696	Skewness					3.268
20												
21	Normal GOF Test											
22	Shapiro Wilk Test Statistic					0.412	Shapiro Wilk GOF Test					
23	5% Shapiro Wilk Critical Value					0.85	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.509	Lilliefors GOF Test					
25	5% Lilliefors Critical Value					0.267	Data Not Normal at 5% Significance Level					
26	Data Not 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					33.84	95% Adjusted-CLT UCL (Chen-1995)					41.79
31							95% Modified-t UCL (Johnson-1978)					35.31
32												
33	Gamma GOF Test											
34	A-D Test Statistic					2.31	Anderson-Darling Gamma GOF Test					
35	5% A-D Critical Value					0.751	Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.482	Kolmogrov-Smirnoff Gamma GOF Test					
37	5% K-S Critical Value					0.262	Data Not Gamma Distributed at 5% Significance Level					
38	Data Not Gamma Distributed at 5% Significance Level											
39												
40	Gamma Statistics											
41	k hat (MLE)					1.04	k star (bias corrected MLE)					0.817
42	Theta hat (MLE)					16.88	Theta star (bias corrected MLE)					21.49
43	nu hat (MLE)					22.89	nu star (bias corrected)					17.98
44	MLE Mean (bias corrected)					17.56	MLE Sd (bias corrected)					19.43
45							Approximate Chi Square Value (0.05)					9.376
46	Adjusted Level of Significance					0.0278	Adjusted Chi Square Value					8.381
47												
48	Assuming Gamma Distribution											
49	95% Approximate Gamma UCL (use when n>=50))					33.68	95% Adjusted Gamma UCL (use when n<50)					37.68
50												
51	Lognormal GOF Test											
52	Shapiro Wilk Test Statistic					0.681	Shapiro Wilk Lognormal GOF Test					

	A	B	C	D	E	F	G	H	I	J	K	L
53					5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level					
54					Lilliefors Test Statistic	0.414	**Lilliefors Lognormal GOF Test**					
55					5% Lilliefors Critical Value	0.267	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59					Minimum of Logged Data	1.099	Mean of logged Data					2.314
60					Maximum of Logged Data	4.673	SD of logged Data					0.898
61												
62	**Assuming Lognormal Distribution**											
63					95% H-UCL	33.54	90% Chebyshev (MVUE) UCL					26.76
64					95% Chebyshev (MVUE) UCL	32.35	97.5% Chebyshev (MVUE) UCL					40.1
65					99% Chebyshev (MVUE) UCL	55.33						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	32.33	95% Jackknife UCL					33.84
72					95% Standard Bootstrap UCL	32.15	95% Bootstrap-t UCL					146.5
73					95% Hall's Bootstrap UCL	201	95% Percentile Bootstrap UCL					35.26
74					95% BCA Bootstrap UCL	43.49						
75					90% Chebyshev(Mean, Sd) UCL	44.5	95% Chebyshev(Mean, Sd) UCL					56.7
76					97.5% Chebyshev(Mean, Sd) UCL	73.64	99% Chebyshev(Mean, Sd) UCL					106.9
77												
78	**Suggested UCL to Use**											
79					95% Chebyshev (Mean, Sd) UCL	56.7						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84	For additional insight the user may want to consult a statistician.											
85												
86												
87	**Cobalt**											
88												
89	**General Statistics**											
90					Total Number of Observations	11	Number of Distinct Observations					4
91							Number of Missing Observations					0
92					Minimum	3.9	Mean					8.633
93					Maximum	17	Median					8.633
94					SD	3.25	Std. Error of Mean					0.98
95					Coefficient of Variation	0.376	Skewness					1.537
96												
97	**Normal GOF Test**											
98					Shapiro Wilk Test Statistic	0.691	**Shapiro Wilk GOF Test**					
99					5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level					
100					Lilliefors Test Statistic	0.409	**Lilliefors GOF Test**					
101					5% Lilliefors Critical Value	0.267	Data Not Normal at 5% Significance Level					
102	**Data Not Normal at 5% Significance Level**											
103												
104	**Assuming Normal Distribution**											

	A	B	C	D	E	F	G	H	I	J	K	L
105	95% Normal UCL						95% UCLs (Adjusted for Skewness)					
106					95% Student's-t UCL	10.41				95% Adjusted-CLT UCL (Chen-1995)		10.73
107										95% Modified-t UCL (Johnson-1978)		10.48
108												
109	Gamma GOF Test											
110					A-D Test Statistic	1.661	Anderson-Darling Gamma GOF Test					
111					5% A-D Critical Value	0.73	Data Not Gamma Distributed at 5% Significance Level					
112					K-S Test Statistic	0.364	Kolmogrov-Smirnoff Gamma GOF Test					
113					5% K-S Critical Value	0.256	Data Not Gamma Distributed at 5% Significance Level					
114	Data Not Gamma Distributed at 5% Significance Level											
115												
116	Gamma Statistics											
117					k hat (MLE)	8.456				k star (bias corrected MLE)		6.21
118					Theta hat (MLE)	1.021				Theta star (bias corrected MLE)		1.39
119					nu hat (MLE)	186				nu star (bias corrected)		136.6
120					MLE Mean (bias corrected)	8.633				MLE Sd (bias corrected)		3.464
121										Approximate Chi Square Value (0.05)		110.6
122					Adjusted Level of Significance	0.0278				Adjusted Chi Square Value		106.8
123												
124	Assuming Gamma Distribution											
125					95% Approximate Gamma UCL (use when n>=50))	10.66				95% Adjusted Gamma UCL (use when n<50)		11.04
126												
127	Lognormal GOF Test											
128					Shapiro Wilk Test Statistic	0.75	Shapiro Wilk Lognormal GOF Test					
129					5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level					
130					Lilliefors Test Statistic	0.383	Lilliefors Lognormal GOF Test					
131					5% Lilliefors Critical Value	0.267	Data Not Lognormal at 5% Significance Level					
132	Data Not Lognormal at 5% Significance Level											
133												
134	Lognormal Statistics											
135					Minimum of Logged Data	1.361				Mean of logged Data		2.095
136					Maximum of Logged Data	2.833				SD of logged Data		0.367
137												
138	Assuming Lognormal Distribution											
139					95% H-UCL	10.99				90% Chebyshev (MVUE) UCL		11.54
140					95% Chebyshev (MVUE) UCL	12.86				97.5% Chebyshev (MVUE) UCL		14.69
141					99% Chebyshev (MVUE) UCL	18.27						
142												
143	Nonparametric Distribution Free UCL Statistics											
144	Data do not follow a Discernible Distribution (0.05)											
145												
146	Nonparametric Distribution Free UCLs											
147					95% CLT UCL	10.25				95% Jackknife UCL		10.41
148					95% Standard Bootstrap UCL	N/A				95% Bootstrap-t UCL		N/A
149					95% Hall's Bootstrap UCL	N/A				95% Percentile Bootstrap UCL		N/A
150					95% BCA Bootstrap UCL	N/A						
151					90% Chebyshev(Mean, Sd) UCL	11.57				95% Chebyshev(Mean, Sd) UCL		12.9
152					97.5% Chebyshev(Mean, Sd) UCL	14.75				99% Chebyshev(Mean, Sd) UCL		18.38
153												
154	Suggested UCL to Use											
155					95% Student's-t UCL	10.41				or 95% Modified-t UCL		10.48
156												

	A	B	C	D	E	F	G	H	I	J	K	L
157	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
158	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
159	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
160	For additional insight the user may want to consult a statistician.											
161												
162												
163	**Manganese**											
164												
165	**General Statistics**											
166	Total Number of Observations					11	Number of Distinct Observations					11
167							Number of Missing Observations					0
168	Minimum					575	Mean					835.7
169	Maximum					1500	Median					821
170	SD					254.5	Std. Error of Mean					76.72
171	Coefficient of Variation					0.304	Skewness					1.931
172												
173	**Normal GOF Test**											
174	Shapiro Wilk Test Statistic					0.811	**Shapiro Wilk GOF Test**					
175	5% Shapiro Wilk Critical Value					0.85	Data Not Normal at 5% Significance Level					
176	Lilliefors Test Statistic					0.241	**Lilliefors GOF Test**					
177	5% Lilliefors Critical Value					0.267	Data appear Normal at 5% Significance Level					
178	**Data appear Approximate Normal at 5% Significance Level**											
179												
180	**Assuming Normal Distribution**											
181	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
182	95% Student's-t UCL					974.8	95% Adjusted-CLT UCL (Chen-1995)					1010
183							95% Modified-t UCL (Johnson-1978)					982.2
184												
185	**Gamma GOF Test**											
186	A-D Test Statistic					0.492	**Anderson-Darling Gamma GOF Test**					
187	5% A-D Critical Value					0.729	Detected data appear Gamma Distributed at 5% Significance Level					
188	K-S Test Statistic					0.197	**Kolmogrov-Smirnoff Gamma GOF Test**					
189	5% K-S Critical Value					0.255	Detected data appear Gamma Distributed at 5% Significance Level					
190	**Detected data appear Gamma Distributed at 5% Significance Level**											
191												
192	**Gamma Statistics**											
193	k hat (MLE)					14.57	k star (bias corrected MLE)					10.66
194	Theta hat (MLE)					57.36	Theta star (bias corrected MLE)					78.42
195	nu hat (MLE)					320.5	nu star (bias corrected)					234.4
196	MLE Mean (bias corrected)					835.7	MLE Sd (bias corrected)					256
197							Approximate Chi Square Value (0.05)					200
198	Adjusted Level of Significance					0.0278	Adjusted Chi Square Value					194.8
199												
200	**Assuming Gamma Distribution**											
201	95% Approximate Gamma UCL (use when n>=50))					979.7	95% Adjusted Gamma UCL (use when n<50)					1006
202												
203	**Lognormal GOF Test**											
204	Shapiro Wilk Test Statistic					0.911	**Shapiro Wilk Lognormal GOF Test**					
205	5% Shapiro Wilk Critical Value					0.85	Data appear Lognormal at 5% Significance Level					
206	Lilliefors Test Statistic					0.182	**Lilliefors Lognormal GOF Test**					
207	5% Lilliefors Critical Value					0.267	Data appear Lognormal at 5% Significance Level					
208	**Data appear Lognormal at 5% Significance Level**											

	A	B	C	D	E	F	G	H	I	J	K	L
209												
210						Lognormal Statistics						
211					Minimum of Logged Data	6.354				Mean of logged Data		6.694
212					Maximum of Logged Data	7.313				SD of logged Data		0.265
213												
214						Assuming Lognormal Distribution						
215					95% H-UCL	981.5				90% Chebyshev (MVUE) UCL		1034
216					95% Chebyshev (MVUE) UCL	1125				97.5% Chebyshev (MVUE) UCL		1251
217					99% Chebyshev (MVUE) UCL	1500						
218												
219						Nonparametric Distribution Free UCL Statistics						
220						Data appear to follow a Discernible Distribution at 5% Significance Level						
221												
222						Nonparametric Distribution Free UCLs						
223					95% CLT UCL	961.9				95% Jackknife UCL		974.8
224					95% Standard Bootstrap UCL	954.4				95% Bootstrap-t UCL		1070
225					95% Hall's Bootstrap UCL	1569				95% Percentile Bootstrap UCL		969.5
226					95% BCA Bootstrap UCL	1024						
227					90% Chebyshev(Mean, Sd) UCL	1066				95% Chebyshev(Mean, Sd) UCL		1170
228					97.5% Chebyshev(Mean, Sd) UCL	1315				99% Chebyshev(Mean, Sd) UCL		1599
229												
230						Suggested UCL to Use						
231					95% Student's-t UCL	974.8						
232												
233						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.						
234						These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)						
235						and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.						
236						For additional insight the user may want to consult a statistician.						
237												
238												
239	PAH, Total											
240												
241						General Statistics						
242					Total Number of Observations	11				Number of Distinct Observations		3
243										Number of Missing Observations		0
244					Minimum	0.00184				Mean		0.0111
245					Maximum	0.0204				Median		0.0111
246					SD	0.00414				Std. Error of Mean		0.00125
247					Coefficient of Variation	0.373				Skewness		-2.36E-15
248												
249						Normal GOF Test						
250					Shapiro Wilk Test Statistic	0.627				Shapiro Wilk GOF Test		
251					5% Shapiro Wilk Critical Value	0.85				Data Not Normal at 5% Significance Level		
252					Lilliefors Test Statistic	0.409				Lilliefors GOF Test		
253					5% Lilliefors Critical Value	0.267				Data Not Normal at 5% Significance Level		
254						Data Not Normal at 5% Significance Level						
255												
256						Assuming Normal Distribution						
257					95% Normal UCL					95% UCLs (Adjusted for Skewness)		
258					95% Student's-t UCL	0.0134				95% Adjusted-CLT UCL (Chen-1995)		0.0132
259										95% Modified-t UCL (Johnson-1978)		0.0134
260												

	A	B	C	D	E	F	G	H	I	J	K	L
261						Gamma GOF Test						
262					A-D Test Statistic	2.548	Anderson-Darling Gamma GOF Test					
263					5% A-D Critical Value	0.732	Data Not Gamma Distributed at 5% Significance Level					
264					K-S Test Statistic	0.47	Kolmogrov-Smirnoff Gamma GOF Test					
265					5% K-S Critical Value	0.256	Data Not Gamma Distributed at 5% Significance Level					
266						Data Not Gamma Distributed at 5% Significance Level						
267												
268						Gamma Statistics						
269					k hat (MLE)	4.778			k star (bias corrected MLE)			3.536
270					Theta hat (MLE)	0.00232			Theta star (bias corrected MLE)			0.00314
271					nu hat (MLE)	105.1			nu star (bias corrected)			77.79
272					MLE Mean (bias corrected)	0.0111			MLE Sd (bias corrected)			0.00591
273									Approximate Chi Square Value (0.05)			58.47
274					Adjusted Level of Significance	0.0278			Adjusted Chi Square Value			55.75
275												
276						Assuming Gamma Distribution						
277					95% Approximate Gamma UCL (use when n>=50))	0.0148			95% Adjusted Gamma UCL (use when n<50)			0.0155
278												
279						Lognormal GOF Test						
280					Shapiro Wilk Test Statistic	0.523	Shapiro Wilk Lognormal GOF Test					
281					5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level					
282					Lilliefors Test Statistic	0.482	Lilliefors Lognormal GOF Test					
283					5% Lilliefors Critical Value	0.267	Data Not Lognormal at 5% Significance Level					
284						Data Not Lognormal at 5% Significance Level						
285												
286						Lognormal Statistics						
287					Minimum of Logged Data	-6.298			Mean of logged Data			-4.609
288					Maximum of Logged Data	-3.894			SD of logged Data			0.589
289												
290						Assuming Lognormal Distribution						
291					95% H-UCL	0.0182			90% Chebyshev (MVUE) UCL			0.018
292					95% Chebyshev (MVUE) UCL	0.0209			97.5% Chebyshev (MVUE) UCL			0.0249
293					99% Chebyshev (MVUE) UCL	0.0328						
294												
295						Nonparametric Distribution Free UCL Statistics						
296						Data do not follow a Discernible Distribution (0.05)						
297												
298						Nonparametric Distribution Free UCLs						
299					95% CLT UCL	0.0132			95% Jackknife UCL			0.0134
300					95% Standard Bootstrap UCL	N/A			95% Bootstrap-t UCL			N/A
301					95% Hall's Bootstrap UCL	N/A			95% Percentile Bootstrap UCL			N/A
302					95% BCA Bootstrap UCL	N/A						
303					90% Chebyshev(Mean, Sd) UCL	0.0149			95% Chebyshev(Mean, Sd) UCL			0.0166
304					97.5% Chebyshev(Mean, Sd) UCL	0.0189			99% Chebyshev(Mean, Sd) UCL			0.0235
305												
306						Suggested UCL to Use						
307					95% Chebyshev (Mean, Sd) UCL	0.0166						
308												
309						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.						
310						These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)						
311						and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.						
312						For additional insight the user may want to consult a statistician.						

	A	B	C	D	E	F	G	H	I	J	K	L
313												
314	Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be											
315	reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.											
316												
317												
318	Uranium-238											
319												
320	General Statistics											
321					Total Number of Observations	11			Number of Distinct Observations		5	
322									Number of Missing Observations		0	
323					Minimum	0.957			Mean		3.648	
324					Maximum	9.723			Median		3.648	
325					SD	2.243			Std. Error of Mean		0.676	
326					Coefficient of Variation	0.615			Skewness		2.091	
327												
328	Normal GOF Test											
329					Shapiro Wilk Test Statistic	0.692			Shapiro Wilk GOF Test			
330					5% Shapiro Wilk Critical Value	0.85			Data Not Normal at 5% Significance Level			
331					Lilliefors Test Statistic	0.409			Lilliefors GOF Test			
332					5% Lilliefors Critical Value	0.267			Data Not Normal at 5% Significance Level			
333	Data Not Normal at 5% Significance Level											
334												
335	Assuming Normal Distribution											
336	95% Normal UCL						95% UCLs (Adjusted for Skewness)					
337					95% Student's-t UCL	4.873			95% Adjusted-CLT UCL (Chen-1995)		5.215	
338									95% Modified-t UCL (Johnson-1978)		4.944	
339												
340	Gamma GOF Test											
341					A-D Test Statistic	1.2			Anderson-Darling Gamma GOF Test			
342					5% A-D Critical Value	0.733			Data Not Gamma Distributed at 5% Significance Level			
343					K-S Test Statistic	0.338			Kolmogrov-Smirnoff Gamma GOF Test			
344					5% K-S Critical Value	0.257			Data Not Gamma Distributed at 5% Significance Level			
345	Data Not Gamma Distributed at 5% Significance Level											
346												
347	Gamma Statistics											
348					k hat (MLE)	3.47			k star (bias corrected MLE)		2.584	
349					Theta hat (MLE)	1.051			Theta star (bias corrected MLE)		1.411	
350					nu hat (MLE)	76.34			nu star (bias corrected)		56.85	
351					MLE Mean (bias corrected)	3.648			MLE Sd (bias corrected)		2.269	
352									Approximate Chi Square Value (0.05)		40.52	
353					Adjusted Level of Significance	0.0278			Adjusted Chi Square Value		38.28	
354												
355	Assuming Gamma Distribution											
356					95% Approximate Gamma UCL (use when n>=50))	5.118			95% Adjusted Gamma UCL (use when n<50)		5.417	
357												
358	Lognormal GOF Test											
359					Shapiro Wilk Test Statistic	0.822			Shapiro Wilk Lognormal GOF Test			
360					5% Shapiro Wilk Critical Value	0.85			Data Not Lognormal at 5% Significance Level			
361					Lilliefors Test Statistic	0.329			Lilliefors Lognormal GOF Test			
362					5% Lilliefors Critical Value	0.267			Data Not Lognormal at 5% Significance Level			
363	Data Not Lognormal at 5% Significance Level											
364												

	A	B	C	D	E	F	G	H	I	J	K	L
365						Lognormal Statistics						
366					Minimum of Logged Data	-0.044				Mean of logged Data		1.143
367					Maximum of Logged Data	2.274				SD of logged Data		0.588
368												
369						Assuming Lognormal Distribution						
370					95% H-UCL	5.718				90% Chebyshev (MVUE) UCL		5.668
371					95% Chebyshev (MVUE) UCL	6.576				97.5% Chebyshev (MVUE) UCL		7.836
372					99% Chebyshev (MVUE) UCL	10.31						
373												
374						Nonparametric Distribution Free UCL Statistics						
375						Data do not follow a Discernible Distribution (0.05)						
376												
377						Nonparametric Distribution Free UCLs						
378					95% CLT UCL	4.76				95% Jackknife UCL		4.873
379					95% Standard Bootstrap UCL	4.709				95% Bootstrap-t UCL		5.455
380					95% Hall's Bootstrap UCL	10.14				95% Percentile Bootstrap UCL		4.815
381					95% BCA Bootstrap UCL	5.109						
382					90% Chebyshev(Mean, Sd) UCL	5.676				95% Chebyshev(Mean, Sd) UCL		6.595
383					97.5% Chebyshev(Mean, Sd) UCL	7.87				99% Chebyshev(Mean, Sd) UCL		10.38
384												
385						Suggested UCL to Use						
386					95% Chebyshev (Mean, Sd) UCL	6.595						
387												
388					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
389					These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)							
390					and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.							
391					For additional insight the user may want to consult a statistician.							
392												
393												
394	Vanadium											
395												
396						General Statistics						
397					Total Number of Observations	11				Number of Distinct Observations		9
398										Number of Missing Observations		0
399					Minimum	95				Mean		114.5
400					Maximum	132				Median		118
401					SD	12.36				Std. Error of Mean		3.725
402					Coefficient of Variation	0.108				Skewness		-0.331
403												
404						Normal GOF Test						
405					Shapiro Wilk Test Statistic	0.93				Shapiro Wilk GOF Test		
406					5% Shapiro Wilk Critical Value	0.85				Data appear Normal at 5% Significance Level		
407					Lilliefors Test Statistic	0.183				Lilliefors GOF Test		
408					5% Lilliefors Critical Value	0.267				Data appear Normal at 5% Significance Level		
409						Data appear Normal at 5% Significance Level						
410												
411						Assuming Normal Distribution						
412					95% Normal UCL					95% UCLs (Adjusted for Skewness)		
413					95% Student's-t UCL	121.3				95% Adjusted-CLT UCL (Chen-1995)		120.3
414										95% Modified-t UCL (Johnson-1978)		121.2
415												
416						Gamma GOF Test						

	A	B	C	D	E	F	G	H	I	J	K	L
417					A-D Test Statistic	0.438	**Anderson-Darling Gamma GOF Test**					
418					5% A-D Critical Value	0.726	Detected data appear Gamma Distributed at 5% Significance Level					
419					K-S Test Statistic	0.198	**Kolmogrov-Smirnoff Gamma GOF Test**					
420					5% K-S Critical Value	0.254	Detected data appear Gamma Distributed at 5% Significance Level					
421	**Detected data appear Gamma Distributed at 5% Significance Level**											
422												
423	**Gamma Statistics**											
424					k hat (MLE)	91.96	k star (bias corrected MLE)					66.94
425					Theta hat (MLE)	1.246	Theta star (bias corrected MLE)					1.711
426					nu hat (MLE)	2023	nu star (bias corrected)					1473
427					MLE Mean (bias corrected)	114.5	MLE Sd (bias corrected)					14
428							Approximate Chi Square Value (0.05)					1385
429					Adjusted Level of Significance	0.0278	Adjusted Chi Square Value					1371
430												
431	**Assuming Gamma Distribution**											
432					95% Approximate Gamma UCL (use when n>=50))	121.8	95% Adjusted Gamma UCL (use when n<50)					123.1
433												
434	**Lognormal GOF Test**											
435					Shapiro Wilk Test Statistic	0.92	**Shapiro Wilk Lognormal GOF Test**					
436					5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level					
437					Lilliefors Test Statistic	0.201	**Lilliefors Lognormal GOF Test**					
438					5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level					
439	**Data appear Lognormal at 5% Significance Level**											
440												
441	**Lognormal Statistics**											
442					Minimum of Logged Data	4.554	Mean of logged Data					4.736
443					Maximum of Logged Data	4.883	SD of logged Data					0.11
444												
445	**Assuming Lognormal Distribution**											
446					95% H-UCL	122	90% Chebyshev (MVUE) UCL					126
447					95% Chebyshev (MVUE) UCL	131.2	97.5% Chebyshev (MVUE) UCL					138.4
448					99% Chebyshev (MVUE) UCL	152.5						
449												
450	**Nonparametric Distribution Free UCL Statistics**											
451	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
452												
453	**Nonparametric Distribution Free UCLs**											
454					95% CLT UCL	120.7	95% Jackknife UCL					121.3
455					95% Standard Bootstrap UCL	120.3	95% Bootstrap-t UCL					121.2
456					95% Hall's Bootstrap UCL	119.9	95% Percentile Bootstrap UCL					120.4
457					95% BCA Bootstrap UCL	120.1						
458					90% Chebyshev(Mean, Sd) UCL	125.7	95% Chebyshev(Mean, Sd) UCL					130.8
459					97.5% Chebyshev(Mean, Sd) UCL	137.8	99% Chebyshev(Mean, Sd) UCL					151.6
460												
461	**Suggested UCL to Use**											
462					95% Student's-t UCL	121.3						
463												
464	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
465	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
466	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
467	For additional insight the user may want to consult a statistician.											
468												

	A	B	C	D	E	F	G	H	I	J	K	L
469	Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be											
470	reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.											
471												