	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			2/18/2015 1:45:23 PM								
5	From File			EPC_015Sub_EU05.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												

	A	B	C	D	E	F	G	H	I	J	K	L
11	Aluminum											
12												
13						General Statistics						
14					Total Number of Observations	12				Number of Distinct Observations		5
15										Number of Missing Observations		0
16					Minimum	5640				Mean		8638
17					Maximum	13800				Median		8638
18					SD	1870				Std. Error of Mean		539.7
19					Coefficient of Variation	0.216				Skewness		1.779
20												
21						Normal GOF Test						
22					Shapiro Wilk Test Statistic	0.684				Shapiro Wilk GOF Test		
23					5% Shapiro Wilk Critical Value	0.859				Data Not Normal at 5% Significance Level		
24					Lilliefors Test Statistic	0.417				Lilliefors GOF Test		
25					5% Lilliefors Critical Value	0.256				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	9607				95% Adjusted-CLT UCL (Chen-1995)		9821
31										95% Modified-t UCL (Johnson-1978)		9653
32												
33						Gamma GOF Test						
34					A-D Test Statistic	1.74				Anderson-Darling Gamma GOF Test		
35					5% A-D Critical Value	0.731				Data Not Gamma Distributed at 5% Significance Level		
36					K-S Test Statistic	0.391				Kolmogrov-Smirnoff Gamma GOF Test		
37					5% K-S Critical Value	0.245				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)	26.3				k star (bias corrected MLE)		19.78
42					Theta hat (MLE)	328.5				Theta star (bias corrected MLE)		436.7
43					nu hat (MLE)	631.1				nu star (bias corrected)		474.7
44					MLE Mean (bias corrected)	8638				MLE Sd (bias corrected)		1942
45										Approximate Chi Square Value (0.05)		425.2
46					Adjusted Level of Significance	0.029				Adjusted Chi Square Value		418
47												
48						Assuming Gamma Distribution						
49					95% Approximate Gamma UCL (use when n>=50))	9644				95% Adjusted Gamma UCL (use when n<50)		9809
50												
51						Lognormal GOF Test						
52					Shapiro Wilk Test Statistic	0.744				Shapiro Wilk Lognormal GOF Test		
53					5% Shapiro Wilk Critical Value	0.859				Data Not Lognormal at 5% Significance Level		
54					Lilliefors Test Statistic	0.379				Lilliefors Lognormal GOF Test		
55					5% Lilliefors Critical Value	0.256				Data Not Lognormal at 5% Significance Level		
56						Data Not Lognormal at 5% Significance Level						
57												
58						Lognormal Statistics						
59					Minimum of Logged Data	8.638				Mean of logged Data		9.045
60					Maximum of Logged Data	9.532				SD of logged Data		0.2
61												

	A	B	C	D	E	F	G	H	I	J	K	L
62					Assuming Lognormal Distribution							
63					95% H-UCL	9665				90% Chebyshev (MVUE) UCL		10136
64				95% Chebyshev (MVUE) UCL		10817				97.5% Chebyshev (MVUE) UCL		11763
65				99% Chebyshev (MVUE) UCL		13622						
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	9525				95% Jackknife UCL		9607
72				95% Standard Bootstrap UCL		9498				95% Bootstrap-t UCL		9854
73				95% Hall's Bootstrap UCL		14520				95% Percentile Bootstrap UCL		9498
74				95% BCA Bootstrap UCL		9748						
75				90% Chebyshev(Mean, Sd) UCL		10257				95% Chebyshev(Mean, Sd) UCL		10990
76				97.5% Chebyshev(Mean, Sd) UCL		12008				99% Chebyshev(Mean, Sd) UCL		14008
77												
78					Suggested UCL to Use							
79				95% Student's-t UCL		9607				or 95% Modified-t UCL		9653
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												

	A	B	C	D	E	F	G	H	I	J	K	L
87	Antimony											
88												
89					General Statistics							
90					Total Number of Observations	12				Number of Distinct Observations		12
91										Number of Missing Observations		0
92					Minimum	71.81				Mean		107.7
93					Maximum	177				Median		100.4
94					SD	27.63				Std. Error of Mean		7.975
95					Coefficient of Variation	0.257				Skewness		1.372
96												
97					Normal GOF Test							
98					Shapiro Wilk Test Statistic	0.882				Shapiro Wilk GOF Test		
99					5% Shapiro Wilk Critical Value	0.859				Data appear Normal at 5% Significance Level		
100					Lilliefors Test Statistic	0.2				Lilliefors GOF Test		
101					5% Lilliefors Critical Value	0.256				Data appear Normal at 5% Significance Level		
102					Data appear Normal at 5% Significance Level							
103												
104					Assuming Normal Distribution							
105					95% Normal UCL					95% UCLs (Adjusted for Skewness)		
106					95% Student's-t UCL	122				95% Adjusted-CLT UCL (Chen-1995)		124.2
107										95% Modified-t UCL (Johnson-1978)		122.6
108												
109					Gamma GOF Test							
110					A-D Test Statistic	0.407				Anderson-Darling Gamma GOF Test		
111					5% A-D Critical Value	0.732				Detected data appear Gamma Distributed at 5% Significance Level		
112					K-S Test Statistic	0.173				Kolmogrov-Smirnoff Gamma GOF Test		
113					5% K-S Critical Value	0.245				Detected data appear Gamma Distributed at 5% Significance Level		
114					Detected data appear Gamma Distributed at 5% Significance Level							
115												
116					Gamma Statistics							
117					k hat (MLE)	18.55				k star (bias corrected MLE)		13.97
118					Theta hat (MLE)	5.806				Theta star (bias corrected MLE)		7.711
119					nu hat (MLE)	445.2				nu star (bias corrected)		335.2
120					MLE Mean (bias corrected)	107.7				MLE Sd (bias corrected)		28.82
121										Approximate Chi Square Value (0.05)		293.8
122					Adjusted Level of Significance	0.029				Adjusted Chi Square Value		287.9
123												
124					Assuming Gamma Distribution							
125					95% Approximate Gamma UCL (use when n>=50))	122.9				95% Adjusted Gamma UCL (use when n<50)		125.4
126												
127					Lognormal GOF Test							
128					Shapiro Wilk Test Statistic	0.945				Shapiro Wilk Lognormal GOF Test		
129					5% Shapiro Wilk Critical Value	0.859				Data appear Lognormal at 5% Significance Level		
130					Lilliefors Test Statistic	0.158				Lilliefors Lognormal GOF Test		
131					5% Lilliefors Critical Value	0.256				Data appear Lognormal at 5% Significance Level		
132					Data appear Lognormal at 5% Significance Level							
133												
134					Lognormal Statistics							
135					Minimum of Logged Data	4.274				Mean of logged Data		4.652
136					Maximum of Logged Data	5.176				SD of logged Data		0.239
137												

	A	B	C	D	E	F	G	H	I	J	K	L
138	**Assuming Lognormal Distribution**											
139					95% H-UCL	123.4				90% Chebyshev (MVUE) UCL		130
140					95% Chebyshev (MVUE) UCL	140.1				97.5% Chebyshev (MVUE) UCL		154.2
141					99% Chebyshev (MVUE) UCL	181.8						
142												
143	**Nonparametric Distribution Free UCL Statistics**											
144	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
145												
146	**Nonparametric Distribution Free UCLs**											
147					95% CLT UCL	120.8				95% Jackknife UCL		122
148					95% Standard Bootstrap UCL	120.4				95% Bootstrap-t UCL		127.5
149					95% Hall's Bootstrap UCL	145.5				95% Percentile Bootstrap UCL		121.7
150					95% BCA Bootstrap UCL	123.1						
151					90% Chebyshev(Mean, Sd) UCL	131.6				95% Chebyshev(Mean, Sd) UCL		142.5
152					97.5% Chebyshev(Mean, Sd) UCL	157.5				99% Chebyshev(Mean, Sd) UCL		187.1
153												
154	**Suggested UCL to Use**											
155					95% Student's-t UCL	122						
156												
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												

	A	B	C	D	E	F	G	H	I	J	K	L
163	Arsenic											
164												
165					General Statistics							
166					Total Number of Observations	12			Number of Distinct Observations			11
167									Number of Missing Observations			0
168					Minimum	6.2			Mean			11.21
169					Maximum	19.15			Median			11
170					SD	4.011			Std. Error of Mean			1.158
171					Coefficient of Variation	0.358			Skewness			0.511
172												
173					Normal GOF Test							
174					Shapiro Wilk Test Statistic	0.95			Shapiro Wilk GOF Test			
175					5% Shapiro Wilk Critical Value	0.859			Data appear Normal at 5% Significance Level			
176					Lilliefors Test Statistic	0.108			Lilliefors GOF Test			
177					5% Lilliefors Critical Value	0.256			Data appear Normal at 5% Significance Level			
178					Data appear 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	13.29			95% Adjusted-CLT UCL (Chen-1995)			13.3
183									95% Modified-t UCL (Johnson-1978)			13.32
184												
185					Gamma GOF Test							
186					A-D Test Statistic	0.223			Anderson-Darling Gamma GOF Test			
187					5% A-D Critical Value	0.731			Detected data appear Gamma Distributed at 5% Significance Level			
188					K-S Test Statistic	0.128			Kolmogrov-Smirnoff Gamma GOF Test			
189					5% K-S Critical Value	0.246			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)	8.546			k star (bias corrected MLE)			6.465
194					Theta hat (MLE)	1.312			Theta star (bias corrected MLE)			1.734
195					nu hat (MLE)	205.1			nu star (bias corrected)			155.2
196					MLE Mean (bias corrected)	11.21			MLE Sd (bias corrected)			4.41
197									Approximate Chi Square Value (0.05)			127.4
198					Adjusted Level of Significance	0.029			Adjusted Chi Square Value			123.5
199												
200					Assuming Gamma Distribution							
201					95% Approximate Gamma UCL (use when n>=50))	13.66			95% Adjusted Gamma UCL (use when n<50)			14.08
202												
203					Lognormal GOF Test							
204					Shapiro Wilk Test Statistic	0.958			Shapiro Wilk Lognormal GOF Test			
205					5% Shapiro Wilk Critical Value	0.859			Data appear Lognormal at 5% Significance Level			
206					Lilliefors Test Statistic	0.128			Lilliefors Lognormal GOF Test			
207					5% Lilliefors Critical Value	0.256			Data appear Lognormal at 5% Significance Level			
208					Data appear Lognormal at 5% Significance Level							
209												
210					Lognormal Statistics							
211					Minimum of Logged Data	1.825			Mean of logged Data			2.357
212					Maximum of Logged Data	2.952			SD of logged Data			0.364
213												

	A	B	C	D	E	F	G	H	I	J	K	L
214	**Assuming Lognormal Distribution**											
215					95% H-UCL	14.04				90% Chebyshev (MVUE) UCL		14.81
216				95% Chebyshev (MVUE) UCL		16.43				97.5% Chebyshev (MVUE) UCL		18.68
217				99% Chebyshev (MVUE) UCL		23.11						
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	13.12				95% Jackknife UCL		13.29
224				95% Standard Bootstrap UCL		13.01				95% Bootstrap-t UCL		13.5
225				95% Hall's Bootstrap UCL		13.41				95% Percentile Bootstrap UCL		13.01
226				95% BCA Bootstrap UCL		13.32						
227				90% Chebyshev(Mean, Sd) UCL		14.69				95% Chebyshev(Mean, Sd) UCL		16.26
228				97.5% Chebyshev(Mean, Sd) UCL		18.44				99% Chebyshev(Mean, Sd) UCL		22.73
229												
230	**Suggested UCL to Use**											
231				95% Student's-t UCL		13.29						
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												

	A	B	C	D	E	F	G	H	I	J	K	L
239	Cadmium											
240												
241					General Statistics							
242					Total Number of Observations	12			Number of Distinct Observations			11
243									Number of Missing Observations			0
244					Minimum	0.31			Mean			14.98
245					Maximum	24.04			Median			15.24
246					SD	5.892			Std. Error of Mean			1.701
247					Coefficient of Variation	0.393			Skewness			-1.168
248												
249					Normal GOF Test							
250					Shapiro Wilk Test Statistic	0.905			Shapiro Wilk GOF Test			
251					5% Shapiro Wilk Critical Value	0.859			Data appear Normal at 5% Significance Level			
252					Lilliefors Test Statistic	0.223			Lilliefors GOF Test			
253					5% Lilliefors Critical Value	0.256			Data appear Normal at 5% Significance Level			
254					Data appear 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	18.04			95% Adjusted-CLT UCL (Chen-1995)			17.17
259									95% Modified-t UCL (Johnson-1978)			17.94
260												
261					Gamma GOF Test							
262					A-D Test Statistic	1.873			Anderson-Darling Gamma GOF Test			
263					5% A-D Critical Value	0.741			Data Not Gamma Distributed at 5% Significance Level			
264					K-S Test Statistic	0.391			Kolmogrov-Smirnoff Gamma GOF Test			
265					5% K-S Critical Value	0.249			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)	2.024			k star (bias corrected MLE)			1.574
270					Theta hat (MLE)	7.402			Theta star (bias corrected MLE)			9.521
271					nu hat (MLE)	48.58			nu star (bias corrected)			37.77
272					MLE Mean (bias corrected)	14.98			MLE Sd (bias corrected)			11.94
273									Approximate Chi Square Value (0.05)			24.7
274					Adjusted Level of Significance	0.029			Adjusted Chi Square Value			23.09
275												
276					Assuming Gamma Distribution							
277					95% Approximate Gamma UCL (use when n>=50))	22.91			95% Adjusted Gamma UCL (use when n<50)			24.5
278												
279					Lognormal GOF Test							
280					Shapiro Wilk Test Statistic	0.51			Shapiro Wilk Lognormal GOF Test			
281					5% Shapiro Wilk Critical Value	0.859			Data Not Lognormal at 5% Significance Level			
282					Lilliefors Test Statistic	0.432			Lilliefors Lognormal GOF Test			
283					5% Lilliefors Critical Value	0.256			Data Not Lognormal at 5% Significance Level			
284					Data Not Lognormal at 5% Significance Level							
285												
286					Lognormal Statistics							
287					Minimum of Logged Data	-1.171			Mean of logged Data			2.44
288					Maximum of Logged Data	3.18			SD of logged Data			1.158
289												

	A	B	C	D	E	F	G	H	I	J	K	L
290	**Assuming Lognormal Distribution**											
291					95% H-UCL	68.71				90% Chebyshev (MVUE) UCL		43.04
292				95% Chebyshev (MVUE) UCL		53.18				97.5% Chebyshev (MVUE) UCL		67.26
293				99% Chebyshev (MVUE) UCL		94.91						
294												
295	**Nonparametric Distribution Free UCL Statistics**											
296	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
297												
298	**Nonparametric Distribution Free UCLs**											
299					95% CLT UCL	17.78				95% Jackknife UCL		18.04
300				95% Standard Bootstrap UCL		17.58				95% Bootstrap-t UCL		17.61
301				95% Hall's Bootstrap UCL		17.39				95% Percentile Bootstrap UCL		17.59
302				95% BCA Bootstrap UCL		17.27						
303				90% Chebyshev(Mean, Sd) UCL		20.08				95% Chebyshev(Mean, Sd) UCL		22.4
304				97.5% Chebyshev(Mean, Sd) UCL		25.6				99% Chebyshev(Mean, Sd) UCL		31.9
305												
306	**Suggested UCL to Use**											
307				95% Student's-t UCL		18.04						
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.											
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												

	A	B	C	D	E	F	G	H	I	J	K	L
318	Chromium											
319												
320					General Statistics							
321					Total Number of Observations	12				Number of Distinct Observations		10
322										Number of Missing Observations		0
323					Minimum	10.8				Mean		53.63
324					Maximum	85				Median		46.31
325					SD	23.52				Std. Error of Mean		6.791
326					Coefficient of Variation	0.439				Skewness		0.0141
327												
328					Normal GOF Test							
329					Shapiro Wilk Test Statistic	0.911				Shapiro Wilk GOF Test		
330					5% Shapiro Wilk Critical Value	0.859				Data appear Normal at 5% Significance Level		
331					Lilliefors Test Statistic	0.177				Lilliefors GOF Test		
332					5% Lilliefors Critical Value	0.256				Data appear Normal at 5% Significance Level		
333					Data appear 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	65.82				95% Adjusted-CLT UCL (Chen-1995)		64.83
338										95% Modified-t UCL (Johnson-1978)		65.83
339												
340					Gamma GOF Test							
341					A-D Test Statistic	0.523				Anderson-Darling Gamma GOF Test		
342					5% A-D Critical Value	0.735				Detected data appear Gamma Distributed at 5% Significance Level		
343					K-S Test Statistic	0.2				Kolmogrov-Smirnoff Gamma GOF Test		
344					5% K-S Critical Value	0.246				Detected data appear Gamma Distributed at 5% Significance Level		
345					Detected data appear Gamma Distributed at 5% Significance Level							
346												
347					Gamma Statistics							
348					k hat (MLE)	4.325				k star (bias corrected MLE)		3.299
349					Theta hat (MLE)	12.4				Theta star (bias corrected MLE)		16.25
350					nu hat (MLE)	103.8				nu star (bias corrected)		79.18
351					MLE Mean (bias corrected)	53.63				MLE Sd (bias corrected)		29.52
352										Approximate Chi Square Value (0.05)		59.68
353					Adjusted Level of Significance	0.029				Adjusted Chi Square Value		57.1
354												
355					Assuming Gamma Distribution							
356					95% Approximate Gamma UCL (use when n>=50))	71.15				95% Adjusted Gamma UCL (use when n<50)		74.36
357												
358					Lognormal GOF Test							
359					Shapiro Wilk Test Statistic	0.831				Shapiro Wilk Lognormal GOF Test		
360					5% Shapiro Wilk Critical Value	0.859				Data Not Lognormal at 5% Significance Level		
361					Lilliefors Test Statistic	0.243				Lilliefors Lognormal GOF Test		
362					5% Lilliefors Critical Value	0.256				Data appear Lognormal at 5% Significance Level		
363					Data appear Approximate Lognormal at 5% Significance Level							
364												
365					Lognormal Statistics							
366					Minimum of Logged Data	2.38				Mean of logged Data		3.862
367					Maximum of Logged Data	4.443				SD of logged Data		0.572
368												

	A	B	C	D	E	F	G	H	I	J	K	L
369	**Assuming Lognormal Distribution**											
370					95% H-UCL	82.37				90% Chebyshev (MVUE) UCL		83.34
371				95% Chebyshev (MVUE) UCL		96.1				97.5% Chebyshev (MVUE) UCL		113.8
372				99% Chebyshev (MVUE) UCL		148.6						
373												
374	**Nonparametric Distribution Free UCL Statistics**											
375	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
376												
377	**Nonparametric Distribution Free UCLs**											
378					95% CLT UCL	64.8				95% Jackknife UCL		65.82
379				95% Standard Bootstrap UCL		64.33				95% Bootstrap-t UCL		67.12
380				95% Hall's Bootstrap UCL		64.81				95% Percentile Bootstrap UCL		64.06
381				95% BCA Bootstrap UCL		63.98						
382				90% Chebyshev(Mean, Sd) UCL		74				95% Chebyshev(Mean, Sd) UCL		83.23
383				97.5% Chebyshev(Mean, Sd) UCL		96.04				99% Chebyshev(Mean, Sd) UCL		121.2
384												
385	**Suggested UCL to Use**											
386				95% Student's-t UCL		65.82						
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												

	A	B	C	D	E	F	G	H	I	J	K	L
394	Copper											
395												
396					General Statistics							
397					Total Number of Observations	12			Number of Distinct Observations			12
398									Number of Missing Observations			0
399					Minimum	22.06			Mean			712
400					Maximum	6122			Median			245.9
401					SD	1713			Std. Error of Mean			494.5
402					Coefficient of Variation	2.406			Skewness			3.398
403												
404					Normal GOF Test							
405					Shapiro Wilk Test Statistic	0.42			Shapiro Wilk GOF Test			
406					5% Shapiro Wilk Critical Value	0.859			Data Not Normal at 5% Significance Level			
407					Lilliefors Test Statistic	0.451			Lilliefors GOF Test			
408					5% Lilliefors Critical Value	0.256			Data Not Normal at 5% Significance Level			
409					Data Not 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	1600			95% Adjusted-CLT UCL (Chen-1995)			2044
414									95% Modified-t UCL (Johnson-1978)			1681
415												
416					Gamma GOF Test							
417					A-D Test Statistic	1.059			Anderson-Darling Gamma GOF Test			
418					5% A-D Critical Value	0.791			Data Not Gamma Distributed at 5% Significance Level			
419					K-S Test Statistic	0.281			Kolmogrov-Smirnoff Gamma GOF Test			
420					5% K-S Critical Value	0.26			Data Not Gamma Distributed at 5% Significance Level			
421					Data Not Gamma Distributed at 5% Significance Level							
422												
423					Gamma Statistics							
424					k hat (MLE)	0.467			k star (bias corrected MLE)			0.406
425					Theta hat (MLE)	1526			Theta star (bias corrected MLE)			1756
426					nu hat (MLE)	11.2			nu star (bias corrected)			9.733
427					MLE Mean (bias corrected)	712			MLE Sd (bias corrected)			1118
428									Approximate Chi Square Value (0.05)			3.776
429					Adjusted Level of Significance	0.029			Adjusted Chi Square Value			3.23
430												
431					Assuming Gamma Distribution							
432					95% Approximate Gamma UCL (use when n>=50))	1835			95% Adjusted Gamma UCL (use when n<50)			2145
433												
434					Lognormal GOF Test							
435					Shapiro Wilk Test Statistic	0.92			Shapiro Wilk Lognormal GOF Test			
436					5% Shapiro Wilk Critical Value	0.859			Data appear Lognormal at 5% Significance Level			
437					Lilliefors Test Statistic	0.156			Lilliefors Lognormal GOF Test			
438					5% Lilliefors Critical Value	0.256			Data appear Lognormal at 5% Significance Level			
439					Data appear Lognormal at 5% Significance Level							
440												
441					Lognormal Statistics							
442					Minimum of Logged Data	3.094			Mean of logged Data			5.192
443					Maximum of Logged Data	8.72			SD of logged Data			1.615
444												

	A	B	C	D	E	F	G	H	I	J	K	L
445					Assuming Lognormal Distribution							
446					95% H-UCL	4966				90% Chebyshev (MVUE) UCL		1374
447				95% Chebyshev (MVUE) UCL		1751				97.5% Chebyshev (MVUE) UCL		2274
448				99% Chebyshev (MVUE) UCL		3301						
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	1525				95% Jackknife UCL		1600
455				95% Standard Bootstrap UCL		1473				95% Bootstrap-t UCL		6905
456				95% Hall's Bootstrap UCL		5430				95% Percentile Bootstrap UCL		1683
457				95% BCA Bootstrap UCL		2179						
458				90% Chebyshev(Mean, Sd) UCL		2196				95% Chebyshev(Mean, Sd) UCL		2868
459				97.5% Chebyshev(Mean, Sd) UCL		3800				99% Chebyshev(Mean, Sd) UCL		5632
460												
461					Suggested UCL to Use							
462				99% Chebyshev (Mean, Sd) UCL		5632						
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												
469												

	A	B	C	D	E	F	G	H	I	J	K	L
470	Iron											
471												
472					General Statistics							
473					Total Number of Observations	12				Number of Distinct Observations		12
474										Number of Missing Observations		0
475					Minimum	10545				Mean		19551
476					Maximum	34999				Median		18316
477					SD	6753				Std. Error of Mean		1949
478					Coefficient of Variation	0.345				Skewness		1.04
479												
480					Normal GOF Test							
481					Shapiro Wilk Test Statistic	0.929				Shapiro Wilk GOF Test		
482					5% Shapiro Wilk Critical Value	0.859				Data appear Normal at 5% Significance Level		
483					Lilliefors Test Statistic	0.178				Lilliefors GOF Test		
484					5% Lilliefors Critical Value	0.256				Data appear Normal at 5% Significance Level		
485					Data appear Normal at 5% Significance Level							
486												
487					Assuming Normal Distribution							
488					95% Normal UCL					95% UCLs (Adjusted for Skewness)		
489					95% Student's-t UCL	23052				95% Adjusted-CLT UCL (Chen-1995)		23383
490										95% Modified-t UCL (Johnson-1978)		23150
491												
492					Gamma GOF Test							
493					A-D Test Statistic	0.218				Anderson-Darling Gamma GOF Test		
494					5% A-D Critical Value	0.73				Detected data appear Gamma Distributed at 5% Significance Level		
495					K-S Test Statistic	0.137				Kolmogrov-Smirnoff Gamma GOF Test		
496					5% K-S Critical Value	0.245				Detected data appear Gamma Distributed at 5% Significance Level		
497					Detected data appear Gamma Distributed at 5% Significance Level							
498												
499					Gamma Statistics							
500					k hat (MLE)	9.955				k star (bias corrected MLE)		7.522
501					Theta hat (MLE)	1964				Theta star (bias corrected MLE)		2599
502					nu hat (MLE)	238.9				nu star (bias corrected)		180.5
503					MLE Mean (bias corrected)	19551				MLE Sd (bias corrected)		7129
504										Approximate Chi Square Value (0.05)		150.4
505					Adjusted Level of Significance	0.029				Adjusted Chi Square Value		146.3
506												
507					Assuming Gamma Distribution							
508					95% Approximate Gamma UCL (use when n>=50))	23459				95% Adjusted Gamma UCL (use when n<50)		24131
509												
510					Lognormal GOF Test							
511					Shapiro Wilk Test Statistic	0.983				Shapiro Wilk Lognormal GOF Test		
512					5% Shapiro Wilk Critical Value	0.859				Data appear Lognormal at 5% Significance Level		
513					Lilliefors Test Statistic	0.117				Lilliefors Lognormal GOF Test		
514					5% Lilliefors Critical Value	0.256				Data appear Lognormal at 5% Significance Level		
515					Data appear Lognormal at 5% Significance Level							
516												
517					Lognormal Statistics							
518					Minimum of Logged Data	9.263				Mean of logged Data		9.83
519					Maximum of Logged Data	10.46				SD of logged Data		0.331
520												

	A	B	C	D	E	F	G	H	I	J	K	L
521	Assuming Lognormal Distribution											
522					95% H-UCL	23844				90% Chebyshev (MVUE) UCL		25181
523					95% Chebyshev (MVUE) UCL	27741				97.5% Chebyshev (MVUE) UCL		31295
524					99% Chebyshev (MVUE) UCL	38275						
525												
526	Nonparametric Distribution Free UCL Statistics											
527	Data appear to follow a Discernible Distribution at 5% Significance Level											
528												
529	Nonparametric Distribution Free UCLs											
530					95% CLT UCL	22757				95% Jackknife UCL		23052
531					95% Standard Bootstrap UCL	22629				95% Bootstrap-t UCL		24117
532					95% Hall's Bootstrap UCL	24715				95% Percentile Bootstrap UCL		22846
533					95% BCA Bootstrap UCL	23380						
534					90% Chebyshev(Mean, Sd) UCL	25399				95% Chebyshev(Mean, Sd) UCL		28048
535					97.5% Chebyshev(Mean, Sd) UCL	31725				99% Chebyshev(Mean, Sd) UCL		38948
536												
537	Suggested UCL to Use											
538					95% Student's-t UCL	23052						
539												
540	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
541	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
542	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
543	For additional insight the user may want to consult a statistician.											
544												
545												

	A	B	C	D	E	F	G	H	I	J	K	L
546	Manganese											
547												
548					General Statistics							
549					Total Number of Observations	12			Number of Distinct Observations			12
550									Number of Missing Observations			0
551					Minimum	288.3			Mean			560.2
552					Maximum	1286			Median			530
553					SD	259.2			Std. Error of Mean			74.82
554					Coefficient of Variation	0.463			Skewness			2.109
555												
556					Normal GOF Test							
557					Shapiro Wilk Test Statistic	0.776			Shapiro Wilk GOF Test			
558					5% Shapiro Wilk Critical Value	0.859			Data Not Normal at 5% Significance Level			
559					Lilliefors Test Statistic	0.27			Lilliefors GOF Test			
560					5% Lilliefors Critical Value	0.256			Data Not Normal at 5% Significance Level			
561					Data Not Normal at 5% Significance Level							
562												
563					Assuming Normal Distribution							
564					95% Normal UCL				95% UCLs (Adjusted for Skewness)			
565					95% Student's-t UCL	694.6			95% Adjusted-CLT UCL (Chen-1995)			731.9
566									95% Modified-t UCL (Johnson-1978)			702.1
567												
568					Gamma GOF Test							
569					A-D Test Statistic	0.53			Anderson-Darling Gamma GOF Test			
570					5% A-D Critical Value	0.731			Detected data appear Gamma Distributed at 5% Significance Level			
571					K-S Test Statistic	0.208			Kolmogrov-Smirnoff Gamma GOF Test			
572					5% K-S Critical Value	0.246			Detected data appear Gamma Distributed at 5% Significance Level			
573					Detected data appear Gamma Distributed at 5% Significance Level							
574												
575					Gamma Statistics							
576					k hat (MLE)	6.565			k star (bias corrected MLE)			4.98
577					Theta hat (MLE)	85.33			Theta star (bias corrected MLE)			112.5
578					nu hat (MLE)	157.6			nu star (bias corrected)			119.5
579					MLE Mean (bias corrected)	560.2			MLE Sd (bias corrected)			251
580									Approximate Chi Square Value (0.05)			95.27
581					Adjusted Level of Significance	0.029			Adjusted Chi Square Value			91.97
582												
583					Assuming Gamma Distribution							
584					95% Approximate Gamma UCL (use when n>=50)	702.7			95% Adjusted Gamma UCL (use when n<50)			728
585												
586					Lognormal GOF Test							
587					Shapiro Wilk Test Statistic	0.918			Shapiro Wilk Lognormal GOF Test			
588					5% Shapiro Wilk Critical Value	0.859			Data appear Lognormal at 5% Significance Level			
589					Lilliefors Test Statistic	0.192			Lilliefors Lognormal GOF Test			
590					5% Lilliefors Critical Value	0.256			Data appear Lognormal at 5% Significance Level			
591					Data appear Lognormal at 5% Significance Level							
592												
593					Lognormal Statistics							
594					Minimum of Logged Data	5.664			Mean of logged Data			6.25
595					Maximum of Logged Data	7.159			SD of logged Data			0.398
596												

	A	B	C	D	E	F	G	H	I	J	K	L
597	Assuming Lognormal Distribution											
598					95% H-UCL	715				90% Chebyshev (MVUE) UCL		751.9
599				95% Chebyshev (MVUE) UCL		840.2				97.5% Chebyshev (MVUE) UCL		962.8
600				99% Chebyshev (MVUE) UCL		1204						
601												
602	Nonparametric Distribution Free UCL Statistics											
603	Data appear to follow a Discernible Distribution at 5% Significance Level											
604												
605	Nonparametric Distribution Free UCLs											
606					95% CLT UCL	683.3				95% Jackknife UCL		694.6
607				95% Standard Bootstrap UCL		676.6				95% Bootstrap-t UCL		782.6
608				95% Hall's Bootstrap UCL		1267				95% Percentile Bootstrap UCL		685.9
609				95% BCA Bootstrap UCL		745.9						
610				90% Chebyshev(Mean, Sd) UCL		784.6				95% Chebyshev(Mean, Sd) UCL		886.3
611				97.5% Chebyshev(Mean, Sd) UCL		1027				99% Chebyshev(Mean, Sd) UCL		1305
612												
613	Suggested UCL to Use											
614				95% Adjusted Gamma UCL		728						
615												
616	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
617	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
618	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
619	For additional insight the user may want to consult a statistician.											
620												
621												

	A	B	C	D	E	F	G	H	I	J	K	L
622	Mercury											
623												
624					General Statistics							
625					Total Number of Observations	12				Number of Distinct Observations		7
626										Number of Missing Observations		0
627					Minimum	0.0195				Mean		7.066
628					Maximum	10.63				Median		10
629					SD	4.356				Std. Error of Mean		1.258
630					Coefficient of Variation	0.617				Skewness		-1.06
631												
632					Normal GOF Test							
633					Shapiro Wilk Test Statistic	0.711				Shapiro Wilk GOF Test		
634					5% Shapiro Wilk Critical Value	0.859				Data Not Normal at 5% Significance Level		
635					Lilliefors Test Statistic	0.333				Lilliefors GOF Test		
636					5% Lilliefors Critical Value	0.256				Data Not Normal at 5% Significance Level		
637					Data Not Normal at 5% Significance Level							
638												
639					Assuming Normal Distribution							
640					95% Normal UCL					95% UCLs (Adjusted for Skewness)		
641					95% Student's-t UCL	9.325				95% Adjusted-CLT UCL (Chen-1995)		8.723
642										95% Modified-t UCL (Johnson-1978)		9.261
643												
644					Gamma GOF Test							
645					A-D Test Statistic	2.273				Anderson-Darling Gamma GOF Test		
646					5% A-D Critical Value	0.774				Data Not Gamma Distributed at 5% Significance Level		
647					K-S Test Statistic	0.394				Kolmogrov-Smirnoff Gamma GOF Test		
648					5% K-S Critical Value	0.257				Data Not Gamma Distributed at 5% Significance Level		
649					Data Not Gamma Distributed at 5% Significance Level							
650												
651					Gamma Statistics							
652					k hat (MLE)	0.639				k star (bias corrected MLE)		0.534
653					Theta hat (MLE)	11.07				Theta star (bias corrected MLE)		13.22
654					nu hat (MLE)	15.32				nu star (bias corrected)		12.83
655					MLE Mean (bias corrected)	7.066				MLE Sd (bias corrected)		9.666
656										Approximate Chi Square Value (0.05)		5.777
657					Adjusted Level of Significance	0.029				Adjusted Chi Square Value		5.072
658												
659					Assuming Gamma Distribution							
660					95% Approximate Gamma UCL (use when n>=50))	15.69				95% Adjusted Gamma UCL (use when n<50)		17.87
661												
662					Lognormal GOF Test							
663					Shapiro Wilk Test Statistic	0.636				Shapiro Wilk Lognormal GOF Test		
664					5% Shapiro Wilk Critical Value	0.859				Data Not Lognormal at 5% Significance Level		
665					Lilliefors Test Statistic	0.4				Lilliefors Lognormal GOF Test		
666					5% Lilliefors Critical Value	0.256				Data Not Lognormal at 5% Significance Level		
667					Data Not Lognormal at 5% Significance Level							
668												
669					Lognormal Statistics							
670					Minimum of Logged Data	-3.937				Mean of logged Data		0.996
671					Maximum of Logged Data	2.364				SD of logged Data		2.315
672												

	A	B	C	D	E	F	G	H	I	J	K	L
673					Assuming Lognormal Distribution							
674					95% H-UCL	2040				90% Chebyshev (MVUE) UCL		70.65
675				95% Chebyshev (MVUE) UCL		92.39				97.5% Chebyshev (MVUE) UCL		122.6
676				99% Chebyshev (MVUE) UCL		181.8						
677												
678					Nonparametric Distribution Free UCL Statistics							
679					Data do not follow a Discernible Distribution (0.05)							
680												
681					Nonparametric Distribution Free UCLs							
682					95% CLT UCL	9.135				95% Jackknife UCL		9.325
683				95% Standard Bootstrap UCL		9.04				95% Bootstrap-t UCL		8.966
684				95% Hall's Bootstrap UCL		8.631				95% Percentile Bootstrap UCL		9.011
685				95% BCA Bootstrap UCL		8.681						
686				90% Chebyshev(Mean, Sd) UCL		10.84				95% Chebyshev(Mean, Sd) UCL		12.55
687				97.5% Chebyshev(Mean, Sd) UCL		14.92				99% Chebyshev(Mean, Sd) UCL		19.58
688												
689					Suggested UCL to Use							
690				99% Chebyshev (Mean, Sd) UCL		19.58						
691												
692					Recommended UCL exceeds the maximum observation							
693												
694					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
695					These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)							
696					and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.							
697					For additional insight the user may want to consult a statistician.							
698												
699					Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be							
700					reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.							
701												
702												

	A	B	C	D	E	F	G	H	I	J	K	L
703	Neptunium-237											
704												
705					General Statistics							
706					Total Number of Observations	12			Number of Distinct Observations			3
707									Number of Missing Observations			0
708					Minimum	-0.001			Mean			0.345
709					Maximum	0.69			Median			0.345
710					SD	0.147			Std. Error of Mean			0.0425
711					Coefficient of Variation	0.428			Skewness			0
712												
713					Normal GOF Test							
714					Shapiro Wilk Test Statistic	0.6			Shapiro Wilk GOF Test			
715					5% Shapiro Wilk Critical Value	0.859			Data Not Normal at 5% Significance Level			
716					Lilliefors Test Statistic	0.417			Lilliefors GOF Test			
717					5% Lilliefors Critical Value	0.256			Data Not Normal at 5% Significance Level			
718					Data Not Normal at 5% Significance Level							
719												
720					Assuming Normal Distribution							
721					95% Normal UCL				95% UCLs (Adjusted for Skewness)			
722					95% Student's-t UCL	0.421			95% Adjusted-CLT UCL (Chen-1995)			0.414
723									95% Modified-t UCL (Johnson-1978)			0.421
724					Gamma Statistics Not Available							
725					Lognormal Statistics Not Available							
726												
727					Nonparametric Distribution Free UCL Statistics							
728					Data do not follow a Discernible Distribution (0.05)							
729												
730					Nonparametric Distribution Free UCLs							
731					95% CLT UCL	0.414			95% Jackknife UCL			0.421
732					95% Standard Bootstrap UCL	N/A			95% Bootstrap-t UCL			N/A
733					95% Hall's Bootstrap UCL	N/A			95% Percentile Bootstrap UCL			N/A
734					95% BCA Bootstrap UCL	N/A						
735					90% Chebyshev(Mean, Sd) UCL	0.472			95% Chebyshev(Mean, Sd) UCL			0.53
736					97.5% Chebyshev(Mean, Sd) UCL	0.61			99% Chebyshev(Mean, Sd) UCL			0.768
737												
738					Suggested UCL to Use							
739					95% Chebyshev (Mean, Sd) UCL	0.53						
740												
741	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
742	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
743	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
744	For additional insight the user may want to consult a statistician.											
745												
746												

	A	B	C	D	E	F	G	H	I	J	K	L
747	Nickel											
748												
749					General Statistics							
750					Total Number of Observations	12				Number of Distinct Observations		11
751										Number of Missing Observations		0
752					Minimum	7.4				Mean		233
753					Maximum	676				Median		164
754					SD	222.2				Std. Error of Mean		64.14
755					Coefficient of Variation	0.954				Skewness		0.816
756												
757					Normal GOF Test							
758					Shapiro Wilk Test Statistic	0.868				Shapiro Wilk GOF Test		
759					5% Shapiro Wilk Critical Value	0.859				Data appear Normal at 5% Significance Level		
760					Lilliefors Test Statistic	0.195				Lilliefors GOF Test		
761					5% Lilliefors Critical Value	0.256				Data appear Normal at 5% Significance Level		
762					Data appear Normal at 5% Significance Level							
763												
764					Assuming Normal Distribution							
765					95% Normal UCL					95% UCLs (Adjusted for Skewness)		
766					95% Student's-t UCL	348.2				95% Adjusted-CLT UCL (Chen-1995)		354.6
767										95% Modified-t UCL (Johnson-1978)		350.7
768												
769					Gamma GOF Test							
770					A-D Test Statistic	0.318				Anderson-Darling Gamma GOF Test		
771					5% A-D Critical Value	0.761				Detected data appear Gamma Distributed at 5% Significance Level		
772					K-S Test Statistic	0.177				Kolmogrov-Smirnoff Gamma GOF Test		
773					5% K-S Critical Value	0.253				Detected data appear Gamma Distributed at 5% Significance Level		
774					Detected data appear Gamma Distributed at 5% Significance Level							
775												
776					Gamma Statistics							
777					k hat (MLE)	0.888				k star (bias corrected MLE)		0.722
778					Theta hat (MLE)	262.3				Theta star (bias corrected MLE)		322.8
779					nu hat (MLE)	21.32				nu star (bias corrected)		17.32
780					MLE Mean (bias corrected)	233				MLE Sd (bias corrected)		274.2
781										Approximate Chi Square Value (0.05)		8.903
782					Adjusted Level of Significance	0.029				Adjusted Chi Square Value		7.997
783												
784					Assuming Gamma Distribution							
785					95% Approximate Gamma UCL (use when n>=50))	453.3				95% Adjusted Gamma UCL (use when n<50)		504.7
786												
787					Lognormal GOF Test							
788					Shapiro Wilk Test Statistic	0.92				Shapiro Wilk Lognormal GOF Test		
789					5% Shapiro Wilk Critical Value	0.859				Data appear Lognormal at 5% Significance Level		
790					Lilliefors Test Statistic	0.152				Lilliefors Lognormal GOF Test		
791					5% Lilliefors Critical Value	0.256				Data appear Lognormal at 5% Significance Level		
792					Data appear Lognormal at 5% Significance Level							
793												
794					Lognormal Statistics							
795					Minimum of Logged Data	2.001				Mean of logged Data		4.792
796					Maximum of Logged Data	6.516				SD of logged Data		1.425
797												

	A	B	C	D	E	F	G	H	I	J	K	L
798	Assuming Lognormal Distribution											
799					95% H-UCL	1662				90% Chebyshev (MVUE) UCL		678.6
800				95% Chebyshev (MVUE) UCL		855.2				97.5% Chebyshev (MVUE) UCL		1100
801				99% Chebyshev (MVUE) UCL		1582						
802												
803	Nonparametric Distribution Free UCL Statistics											
804	Data appear to follow a Discernible Distribution at 5% Significance Level											
805												
806	Nonparametric Distribution Free UCLs											
807					95% CLT UCL	338.5				95% Jackknife UCL		348.2
808				95% Standard Bootstrap UCL		333.6				95% Bootstrap-t UCL		382
809				95% Hall's Bootstrap UCL		342.1				95% Percentile Bootstrap UCL		340.4
810				95% BCA Bootstrap UCL		351.8						
811				90% Chebyshev(Mean, Sd) UCL		425.4				95% Chebyshev(Mean, Sd) UCL		512.6
812				97.5% Chebyshev(Mean, Sd) UCL		633.6				99% Chebyshev(Mean, Sd) UCL		871.2
813												
814	Suggested UCL to Use											
815				95% Student's-t UCL		348.2						
816												
817	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
818	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
819	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
820	For additional insight the user may want to consult a statistician.											
821												
822												

	A	B	C	D	E	F	G	H	I	J	K	L
823	PAH, Total											
824												
825					General Statistics							
826					Total Number of Observations	12			Number of Distinct Observations			4
827									Number of Missing Observations			0
828					Minimum	0.0072			Mean			0.175
829					Maximum	0.511			Median			0.175
830					SD	0.124			Std. Error of Mean			0.0358
831					Coefficient of Variation	0.707			Skewness			1.625
832												
833					Normal GOF Test							
834					Shapiro Wilk Test Statistic	0.65			Shapiro Wilk GOF Test			
835					5% Shapiro Wilk Critical Value	0.859			Data Not Normal at 5% Significance Level			
836					Lilliefors Test Statistic	0.417			Lilliefors GOF Test			
837					5% Lilliefors Critical Value	0.256			Data Not Normal at 5% Significance Level			
838					Data Not Normal at 5% Significance Level							
839												
840					Assuming Normal Distribution							
841					95% Normal UCL				95% UCLs (Adjusted for Skewness)			
842					95% Student's-t UCL	0.239			95% Adjusted-CLT UCL (Chen-1995)			0.252
843									95% Modified-t UCL (Johnson-1978)			0.242
844												
845					Gamma GOF Test							
846					A-D Test Statistic	2.34			Anderson-Darling Gamma GOF Test			
847					5% A-D Critical Value	0.75			Data Not Gamma Distributed at 5% Significance Level			
848					K-S Test Statistic	0.45			Kolmogrov-Smirnoff Gamma GOF Test			
849					5% K-S Critical Value	0.251			Data Not Gamma Distributed at 5% Significance Level			
850					Data Not Gamma Distributed at 5% Significance Level							
851												
852					Gamma Statistics							
853					k hat (MLE)	1.287			k star (bias corrected MLE)			1.021
854					Theta hat (MLE)	0.136			Theta star (bias corrected MLE)			0.172
855					nu hat (MLE)	30.9			nu star (bias corrected)			24.51
856					MLE Mean (bias corrected)	0.175			MLE Sd (bias corrected)			0.173
857									Approximate Chi Square Value (0.05)			14.24
858					Adjusted Level of Significance	0.029			Adjusted Chi Square Value			13.05
859												
860					Assuming Gamma Distribution							
861					95% Approximate Gamma UCL (use when n>=50))	0.302			95% Adjusted Gamma UCL (use when n<50)			0.329
862												
863					Lognormal GOF Test							
864					Shapiro Wilk Test Statistic	0.605			Shapiro Wilk Lognormal GOF Test			
865					5% Shapiro Wilk Critical Value	0.859			Data Not Lognormal at 5% Significance Level			
866					Lilliefors Test Statistic	0.464			Lilliefors Lognormal GOF Test			
867					5% Lilliefors Critical Value	0.256			Data Not Lognormal at 5% Significance Level			
868					Data Not Lognormal at 5% Significance Level							
869												
870					Lognormal Statistics							
871					Minimum of Logged Data	-4.934			Mean of logged Data			-2.178
872					Maximum of Logged Data	-0.672			SD of logged Data			1.305
873												

	A	B	C	D	E	F	G	H	I	J	K	L
874	Assuming Lognormal Distribution											
875					95% H-UCL	1.051				90% Chebyshev (MVUE) UCL		0.529
876				95% Chebyshev (MVUE) UCL		0.662				97.5% Chebyshev (MVUE) UCL		0.845
877				99% Chebyshev (MVUE) UCL		1.206						
878												
879	Nonparametric Distribution Free UCL Statistics											
880	Data do not follow a Discernible Distribution (0.05)											
881												
882	Nonparametric Distribution Free UCLs											
883					95% CLT UCL	0.234				95% Jackknife UCL		0.239
884				95% Standard Bootstrap UCL		N/A				95% Bootstrap-t UCL		N/A
885				95% Hall's Bootstrap UCL		N/A				95% Percentile Bootstrap UCL		N/A
886				95% BCA Bootstrap UCL		N/A						
887				90% Chebyshev(Mean, Sd) UCL		0.282				95% Chebyshev(Mean, Sd) UCL		0.331
888				97.5% Chebyshev(Mean, Sd) UCL		0.398				99% Chebyshev(Mean, Sd) UCL		0.531
889												
890	Suggested UCL to Use											
891				95% Chebyshev (Mean, Sd) UCL		0.331						
892												
893	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
894	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
895	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
896	For additional insight the user may want to consult a statistician.											
897												
898												

	A	B	C	D	E	F	G	H	I	J	K	L
899	PCB, Total											
900												
901					General Statistics							
902					Total Number of Observations	12			Number of Distinct Observations			5
903									Number of Missing Observations			0
904					Minimum	0.017			Mean			7.996
905					Maximum	50			Median			5
906					SD	13.36			Std. Error of Mean			3.858
907					Coefficient of Variation	1.671			Skewness			3.334
908												
909					Normal GOF Test							
910					Shapiro Wilk Test Statistic	0.432			Shapiro Wilk GOF Test			
911					5% Shapiro Wilk Critical Value	0.859			Data Not Normal at 5% Significance Level			
912					Lilliefors Test Statistic	0.488			Lilliefors GOF Test			
913					5% Lilliefors Critical Value	0.256			Data Not Normal at 5% Significance Level			
914					Data Not Normal at 5% Significance Level							
915												
916					Assuming Normal Distribution							
917					95% Normal UCL				95% UCLs (Adjusted for Skewness)			
918					95% Student's-t UCL	14.92			95% Adjusted-CLT UCL (Chen-1995)			18.31
919									95% Modified-t UCL (Johnson-1978)			15.54
920												
921					Gamma GOF Test							
922					A-D Test Statistic	1.886			Anderson-Darling Gamma GOF Test			
923					5% A-D Critical Value	0.775			Data Not Gamma Distributed at 5% Significance Level			
924					K-S Test Statistic	0.368			Kolmogrov-Smirnoff Gamma GOF Test			
925					5% K-S Critical Value	0.257			Data Not Gamma Distributed at 5% Significance Level			
926					Data Not Gamma Distributed at 5% Significance Level							
927												
928					Gamma Statistics							
929					k hat (MLE)	0.633			k star (bias corrected MLE)			0.53
930					Theta hat (MLE)	12.63			Theta star (bias corrected MLE)			15.07
931					nu hat (MLE)	15.19			nu star (bias corrected)			12.73
932					MLE Mean (bias corrected)	7.996			MLE Sd (bias corrected)			10.98
933									Approximate Chi Square Value (0.05)			5.711
934					Adjusted Level of Significance	0.029			Adjusted Chi Square Value			5.012
935												
936					Assuming Gamma Distribution							
937					95% Approximate Gamma UCL (use when n>=50))	17.82			95% Adjusted Gamma UCL (use when n<50)			20.31
938												
939					Lognormal GOF Test							
940					Shapiro Wilk Test Statistic	0.672			Shapiro Wilk Lognormal GOF Test			
941					5% Shapiro Wilk Critical Value	0.859			Data Not Lognormal at 5% Significance Level			
942					Lilliefors Test Statistic	0.434			Lilliefors Lognormal GOF Test			
943					5% Lilliefors Critical Value	0.256			Data Not Lognormal at 5% Significance Level			
944					Data Not Lognormal at 5% Significance Level							
945												
946					Lognormal Statistics							
947					Minimum of Logged Data	-4.075			Mean of logged Data			1.111
948					Maximum of Logged Data	3.912			SD of logged Data			1.955
949												

	A	B	C	D	E	F	G	H	I	J	K	L
950	Assuming Lognormal Distribution											
951					95% H-UCL	360.2				90% Chebyshev (MVUE) UCL		41.34
952				95% Chebyshev (MVUE) UCL		53.46				97.5% Chebyshev (MVUE) UCL		70.29
953				99% Chebyshev (MVUE) UCL		103.4						
954												
955	Nonparametric Distribution Free UCL Statistics											
956	Data do not follow a Discernible Distribution (0.05)											
957												
958	Nonparametric Distribution Free UCLs											
959					95% CLT UCL	14.34				95% Jackknife UCL		14.92
960				95% Standard Bootstrap UCL		14.14				95% Bootstrap-t UCL		39.68
961				95% Hall's Bootstrap UCL		63.91				95% Percentile Bootstrap UCL		15.16
962				95% BCA Bootstrap UCL		18.78						
963				90% Chebyshev(Mean, Sd) UCL		19.57				95% Chebyshev(Mean, Sd) UCL		24.81
964				97.5% Chebyshev(Mean, Sd) UCL		32.09				99% Chebyshev(Mean, Sd) UCL		46.38
965												
966	Suggested UCL to Use											
967				99% Chebyshev (Mean, Sd) UCL		46.38						
968												
969	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
970	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
971	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
972	For additional insight the user may want to consult a statistician.											
973												
974												

	A	B	C	D	E	F	G	H	I	J	K	L
975	Uranium											
976												
977					General Statistics							
978					Total Number of Observations	12			Number of Distinct Observations			12
979									Number of Missing Observations			0
980					Minimum	1.3			Mean			108.4
981					Maximum	364.2			Median			61.93
982					SD	125.7			Std. Error of Mean			36.29
983					Coefficient of Variation	1.16			Skewness			1.133
984												
985					Normal GOF Test							
986					Shapiro Wilk Test Statistic	0.807			Shapiro Wilk GOF Test			
987					5% Shapiro Wilk Critical Value	0.859			Data Not Normal at 5% Significance Level			
988					Lilliefors Test Statistic	0.237			Lilliefors GOF Test			
989					5% Lilliefors Critical Value	0.256			Data appear Normal at 5% Significance Level			
990					Data appear Approximate Normal at 5% Significance Level							
991												
992					Assuming Normal Distribution							
993					95% Normal UCL				95% UCLs (Adjusted for Skewness)			
994					95% Student's-t UCL	173.5			95% Adjusted-CLT UCL (Chen-1995)			180.7
995									95% Modified-t UCL (Johnson-1978)			175.5
996												
997					Gamma GOF Test							
998					A-D Test Statistic	0.314			Anderson-Darling Gamma GOF Test			
999					5% A-D Critical Value	0.775			Detected data appear Gamma Distributed at 5% Significance Level			
1000					K-S Test Statistic	0.152			Kolmogrov-Smirnoff Gamma GOF Test			
1001					5% K-S Critical Value	0.257			Detected data appear Gamma Distributed at 5% Significance Level			
1002					Detected data appear Gamma Distributed at 5% Significance Level							
1003												
1004					Gamma Statistics							
1005					k hat (MLE)	0.629			k star (bias corrected MLE)			0.527
1006					Theta hat (MLE)	172.2			Theta star (bias corrected MLE)			205.4
1007					nu hat (MLE)	15.1			nu star (bias corrected)			12.66
1008					MLE Mean (bias corrected)	108.4			MLE Sd (bias corrected)			149.2
1009									Approximate Chi Square Value (0.05)			5.664
1010					Adjusted Level of Significance	0.029			Adjusted Chi Square Value			4.968
1011												
1012					Assuming Gamma Distribution							
1013					95% Approximate Gamma UCL (use when n>=50))	242.2			95% Adjusted Gamma UCL (use when n<50)			276.1
1014												
1015					Lognormal GOF Test							
1016					Shapiro Wilk Test Statistic	0.939			Shapiro Wilk Lognormal GOF Test			
1017					5% Shapiro Wilk Critical Value	0.859			Data appear Lognormal at 5% Significance Level			
1018					Lilliefors Test Statistic	0.183			Lilliefors Lognormal GOF Test			
1019					5% Lilliefors Critical Value	0.256			Data appear Lognormal at 5% Significance Level			
1020					Data appear Lognormal at 5% Significance Level							
1021												
1022					Lognormal Statistics							
1023					Minimum of Logged Data	0.262			Mean of logged Data			3.71
1024					Maximum of Logged Data	5.898			SD of logged Data			1.75
1025												

	A	B	C	D	E	F	G	H	I	J	K	L
1026	**Assuming Lognormal Distribution**											
1027					95% H-UCL	1948				90% Chebyshev (MVUE) UCL		391
1028					95% Chebyshev (MVUE) UCL	501.4				97.5% Chebyshev (MVUE) UCL		654.8
1029					99% Chebyshev (MVUE) UCL	955.9						
1030												
1031	**Nonparametric Distribution Free UCL Statistics**											
1032	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
1033												
1034	**Nonparametric Distribution Free UCLs**											
1035					95% CLT UCL	168				95% Jackknife UCL		173.5
1036					95% Standard Bootstrap UCL	166				95% Bootstrap-t UCL		199.4
1037					95% Hall's Bootstrap UCL	164				95% Percentile Bootstrap UCL		167.7
1038					95% BCA Bootstrap UCL	179.9						
1039					90% Chebyshev(Mean, Sd) UCL	217.2				95% Chebyshev(Mean, Sd) UCL		266.5
1040					97.5% Chebyshev(Mean, Sd) UCL	335				99% Chebyshev(Mean, Sd) UCL		469.4
1041												
1042	**Suggested UCL to Use**											
1043					95% Student's-t UCL	173.5						
1044												
1045	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1046	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
1047	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
1048	For additional insight the user may want to consult a statistician.											
1049												
1050												

	A	B	C	D	E	F	G	H	I	J	K	L
1051	Uranium-235											
1052												
1053						General Statistics						
1054					Total Number of Observations	12				Number of Distinct Observations		3
1055										Number of Missing Observations		0
1056					Minimum	0.037				Mean		0.249
1057					Maximum	0.46				Median		0.249
1058					SD	0.0902				Std. Error of Mean		0.026
1059					Coefficient of Variation	0.363				Skewness		1.548E-15
1060												
1061						Normal GOF Test						
1062					Shapiro Wilk Test Statistic	0.6				Shapiro Wilk GOF Test		
1063					5% Shapiro Wilk Critical Value	0.859				Data Not Normal at 5% Significance Level		
1064					Lilliefors Test Statistic	0.417				Lilliefors GOF Test		
1065					5% Lilliefors Critical Value	0.256				Data Not Normal at 5% Significance Level		
1066						Data Not Normal at 5% Significance Level						
1067												
1068						Assuming Normal Distribution						
1069					95% Normal UCL					95% UCLs (Adjusted for Skewness)		
1070					95% Student's-t UCL	0.295				95% Adjusted-CLT UCL (Chen-1995)		0.291
1071										95% Modified-t UCL (Johnson-1978)		0.295
1072												
1073						Gamma GOF Test						
1074					A-D Test Statistic	2.917				Anderson-Darling Gamma GOF Test		
1075					5% A-D Critical Value	0.733				Data Not Gamma Distributed at 5% Significance Level		
1076					K-S Test Statistic	0.477				Kolmogrov-Smirnoff Gamma GOF Test		
1077					5% K-S Critical Value	0.246				Data Not Gamma Distributed at 5% Significance Level		
1078						Data Not Gamma Distributed at 5% Significance Level						
1079												
1080						Gamma Statistics						
1081					k hat (MLE)	4.816				k star (bias corrected MLE)		3.668
1082					Theta hat (MLE)	0.0516				Theta star (bias corrected MLE)		0.0678
1083					nu hat (MLE)	115.6				nu star (bias corrected)		88.02
1084					MLE Mean (bias corrected)	0.249				MLE Sd (bias corrected)		0.13
1085										Approximate Chi Square Value (0.05)		67.39
1086					Adjusted Level of Significance	0.029				Adjusted Chi Square Value		64.64
1087												
1088						Assuming Gamma Distribution						
1089					95% Approximate Gamma UCL (use when n>=50))	0.325				95% Adjusted Gamma UCL (use when n<50)		0.338
1090												
1091						Lognormal GOF Test						
1092					Shapiro Wilk Test Statistic	0.492				Shapiro Wilk Lognormal GOF Test		
1093					5% Shapiro Wilk Critical Value	0.859				Data Not Lognormal at 5% Significance Level		
1094					Lilliefors Test Statistic	0.489				Lilliefors Lognormal GOF Test		
1095					5% Lilliefors Critical Value	0.256				Data Not Lognormal at 5% Significance Level		
1096						Data Not Lognormal at 5% Significance Level						
1097												
1098						Lognormal Statistics						
1099					Minimum of Logged Data	-3.297				Mean of logged Data		-1.5
1100					Maximum of Logged Data	-0.777				SD of logged Data		0.593
1101												

	A	B	C	D	E	F	G	H	I	J	K	L
1102					Assuming Lognormal Distribution							
1103					95% H-UCL	0.399				90% Chebyshev (MVUE) UCL		0.4
1104				95% Chebyshev (MVUE) UCL		0.463				97.5% Chebyshev (MVUE) UCL		0.55
1105				99% Chebyshev (MVUE) UCL		0.722						
1106												
1107					Nonparametric Distribution Free UCL Statistics							
1108					Data do not follow a Discernible Distribution (0.05)							
1109												
1110					Nonparametric Distribution Free UCLs							
1111					95% CLT UCL	0.291				95% Jackknife UCL		0.295
1112				95% Standard Bootstrap UCL		N/A				95% Bootstrap-t UCL		N/A
1113				95% Hall's Bootstrap UCL		N/A				95% Percentile Bootstrap UCL		N/A
1114				95% BCA Bootstrap UCL		N/A						
1115				90% Chebyshev(Mean, Sd) UCL		0.327				95% Chebyshev(Mean, Sd) UCL		0.362
1116				97.5% Chebyshev(Mean, Sd) UCL		0.411				99% Chebyshev(Mean, Sd) UCL		0.508
1117												
1118					Suggested UCL to Use							
1119				95% Chebyshev (Mean, Sd) UCL		0.362						
1120												
1121	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1122	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
1123	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
1124	For additional insight the user may want to consult a statistician.											
1125												
1126												

	A	B	C	D	E	F	G	H	I	J	K	L
1127	Uranium-238											
1128												
1129						General Statistics						
1130					Total Number of Observations	12				Number of Distinct Observations		3
1131										Number of Missing Observations		0
1132					Minimum	0.99				Mean		5.645
1133					Maximum	10.3				Median		5.645
1134					SD	1.985				Std. Error of Mean		0.573
1135					Coefficient of Variation	0.352				Skewness		0
1136												
1137						Normal GOF Test						
1138					Shapiro Wilk Test Statistic	0.6				Shapiro Wilk GOF Test		
1139					5% Shapiro Wilk Critical Value	0.859				Data Not Normal at 5% Significance Level		
1140					Lilliefors Test Statistic	0.417				Lilliefors GOF Test		
1141					5% Lilliefors Critical Value	0.256				Data Not Normal at 5% Significance Level		
1142						Data Not Normal at 5% Significance Level						
1143												
1144						Assuming Normal Distribution						
1145					95% Normal UCL					95% UCLs (Adjusted for Skewness)		
1146					95% Student's-t UCL	6.674				95% Adjusted-CLT UCL (Chen-1995)		6.587
1147										95% Modified-t UCL (Johnson-1978)		6.674
1148												
1149						Gamma GOF Test						
1150					A-D Test Statistic	2.893				Anderson-Darling Gamma GOF Test		
1151					5% A-D Critical Value	0.732				Data Not Gamma Distributed at 5% Significance Level		
1152					K-S Test Statistic	0.474				Kolmogrov-Smirnoff Gamma GOF Test		
1153					5% K-S Critical Value	0.246				Data Not Gamma Distributed at 5% Significance Level		
1154						Data Not Gamma Distributed at 5% Significance Level						
1155												
1156						Gamma Statistics						
1157					k hat (MLE)	5.427				k star (bias corrected MLE)		4.126
1158					Theta hat (MLE)	1.04				Theta star (bias corrected MLE)		1.368
1159					nu hat (MLE)	130.2				nu star (bias corrected)		99.02
1160					MLE Mean (bias corrected)	5.645				MLE Sd (bias corrected)		2.779
1161										Approximate Chi Square Value (0.05)		77.06
1162					Adjusted Level of Significance	0.029				Adjusted Chi Square Value		74.11
1163												
1164						Assuming Gamma Distribution						
1165					95% Approximate Gamma UCL (use when n>=50))	7.253				95% Adjusted Gamma UCL (use when n<50)		7.542
1166												
1167						Lognormal GOF Test						
1168					Shapiro Wilk Test Statistic	0.501				Shapiro Wilk Lognormal GOF Test		
1169					5% Shapiro Wilk Critical Value	0.859				Data Not Lognormal at 5% Significance Level		
1170					Lilliefors Test Statistic	0.486				Lilliefors Lognormal GOF Test		
1171					5% Lilliefors Critical Value	0.256				Data Not Lognormal at 5% Significance Level		
1172						Data Not Lognormal at 5% Significance Level						
1173												
1174						Lognormal Statistics						
1175					Minimum of Logged Data	-0.0101				Mean of logged Data		1.636
1176					Maximum of Logged Data	2.332				SD of logged Data		0.546
1177												

	A	B	C	D	E	F	G	H	I	J	K	L
1178					Assuming Lognormal Distribution							
1179					95% H-UCL	8.563				90% Chebyshev (MVUE) UCL		8.737
1180				95% Chebyshev (MVUE) UCL		10.03				97.5% Chebyshev (MVUE) UCL		11.83
1181				99% Chebyshev (MVUE) UCL		15.36						
1182												
1183					Nonparametric Distribution Free UCL Statistics							
1184					Data do not follow a Discernible Distribution (0.05)							
1185												
1186					Nonparametric Distribution Free UCLs							
1187					95% CLT UCL	6.587				95% Jackknife UCL		6.674
1188				95% Standard Bootstrap UCL		N/A				95% Bootstrap-t UCL		N/A
1189				95% Hall's Bootstrap UCL		N/A				95% Percentile Bootstrap UCL		N/A
1190				95% BCA Bootstrap UCL		N/A						
1191				90% Chebyshev(Mean, Sd) UCL		7.364				95% Chebyshev(Mean, Sd) UCL		8.143
1192				97.5% Chebyshev(Mean, Sd) UCL		9.223				99% Chebyshev(Mean, Sd) UCL		11.35
1193												
1194					Suggested UCL to Use							
1195				95% Chebyshev (Mean, Sd) UCL		8.143						
1196												
1197	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1198	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
1199	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
1200	For additional insight the user may want to consult a statistician.											
1201												
1202												

	A	B	C	D	E	F	G	H	I	J	K	L
1203	Zinc											
1204												
1205					General Statistics							
1206					Total Number of Observations	12				Number of Distinct Observations		12
1207										Number of Missing Observations		0
1208					Minimum	45.6				Mean		432.9
1209					Maximum	3169				Median		217.6
1210					SD	867.6				Std. Error of Mean		250.5
1211					Coefficient of Variation	2.004				Skewness		3.377
1212												
1213					Normal GOF Test							
1214					Shapiro Wilk Test Statistic	0.436				Shapiro Wilk GOF Test		
1215					5% Shapiro Wilk Critical Value	0.859				Data Not Normal at 5% Significance Level		
1216					Lilliefors Test Statistic	0.455				Lilliefors GOF Test		
1217					5% Lilliefors Critical Value	0.256				Data Not Normal at 5% Significance Level		
1218					Data Not Normal at 5% Significance Level							
1219												
1220					Assuming Normal Distribution							
1221					95% Normal UCL					95% UCLs (Adjusted for Skewness)		
1222					95% Student's-t UCL	882.7				95% Adjusted-CLT UCL (Chen-1995)		1106
1223										95% Modified-t UCL (Johnson-1978)		923.4
1224												
1225					Gamma GOF Test							
1226					A-D Test Statistic	1.323				Anderson-Darling Gamma GOF Test		
1227					5% A-D Critical Value	0.767				Data Not Gamma Distributed at 5% Significance Level		
1228					K-S Test Statistic	0.329				Kolmogrov-Smirnoff Gamma GOF Test		
1229					5% K-S Critical Value	0.255				Data Not Gamma Distributed at 5% Significance Level		
1230					Data Not Gamma Distributed at 5% Significance Level							
1231												
1232					Gamma Statistics							
1233					k hat (MLE)	0.735				k star (bias corrected MLE)		0.607
1234					Theta hat (MLE)	588.9				Theta star (bias corrected MLE)		713.4
1235					nu hat (MLE)	17.64				nu star (bias corrected)		14.56
1236					MLE Mean (bias corrected)	432.9				MLE Sd (bias corrected)		555.7
1237										Approximate Chi Square Value (0.05)		6.959
1238					Adjusted Level of Significance	0.029				Adjusted Chi Square Value		6.174
1239												
1240					Assuming Gamma Distribution							
1241					95% Approximate Gamma UCL (use when n>=50))	905.9				95% Adjusted Gamma UCL (use when n<50)		1021
1242												
1243					Lognormal GOF Test							
1244					Shapiro Wilk Test Statistic	0.878				Shapiro Wilk Lognormal GOF Test		
1245					5% Shapiro Wilk Critical Value	0.859				Data appear Lognormal at 5% Significance Level		
1246					Lilliefors Test Statistic	0.216				Lilliefors Lognormal GOF Test		
1247					5% Lilliefors Critical Value	0.256				Data appear Lognormal at 5% Significance Level		
1248					Data appear Lognormal at 5% Significance Level							
1249												
1250					Lognormal Statistics							
1251					Minimum of Logged Data	3.82				Mean of logged Data		5.254
1252					Maximum of Logged Data	8.061				SD of logged Data		1.139
1253												

	A	B	C	D	E	F	G	H	I	J	K	L
1254	Assuming Lognormal Distribution											
1255					95% H-UCL	1089				90% Chebyshev (MVUE) UCL		699
1256				95% Chebyshev (MVUE) UCL		862.3				97.5% Chebyshev (MVUE) UCL		1089
1257				99% Chebyshev (MVUE) UCL		1534						
1258												
1259	Nonparametric Distribution Free UCL Statistics											
1260	Data appear to follow a Discernible Distribution at 5% Significance Level											
1261												
1262	Nonparametric Distribution Free UCLs											
1263					95% CLT UCL	844.9				95% Jackknife UCL		882.7
1264				95% Standard Bootstrap UCL		812.4				95% Bootstrap-t UCL		2974
1265				95% Hall's Bootstrap UCL		2967				95% Percentile Bootstrap UCL		923.1
1266				95% BCA Bootstrap UCL		1170						
1267				90% Chebyshev(Mean, Sd) UCL		1184				95% Chebyshev(Mean, Sd) UCL		1525
1268				97.5% Chebyshev(Mean, Sd) UCL		1997				99% Chebyshev(Mean, Sd) UCL		2925
1269												
1270	Suggested UCL to Use											
1271				95% Chebyshev (Mean, Sd) UCL		1525						
1272												
1273	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1274	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
1275	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
1276	For additional insight the user may want to consult a statistician.											
1277												