Table C-1. Sulfate concentrations in alluvial ground water samples upgradient of the Homestake Site, Grants, New Mexico from April 1976 to May 99.

Well ID	DD	ND	P	P1	P2	P3	P4	Q	R	All wells	914	916	920	921	922	950	All Wells
1st sampling date	27-Aug-76	12-Jan-83	09-Apr-76	21-Sep-92	21-Sep-92	23-Apr-98	24-Apr-98	09-Apr-76	09-Apr-76	09-Apr-76	10-Jan-83	21-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81
Most recent sampling date	20-Apr-99	05-Aug-98	10-May-99	21-Jan-99	11-May-99	23-Apr-98	24-Apr-98	02-Mar-99	20-May-99	20-May-99	19-May-99	20-May-99	19-May-99	19-May-99	19-May-99	25-Jan-96	20-May-99
Total number of measurements	55	13	133	33	33	1	1	96	104	469	7	6	19	6	7	3	48
Number of independent measurements	50	13	96	27	27	1	1	75	76	366	7	6	18	6	7	3	47
Percent nondetect of total number of measurements	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Minimum	1540	324	698.6	974	1030	975	885	853	651.7	324	140	43.3	1400	1400	86	839	43.3
Median	1839.8	363.0	872.0	1150.0	1130.0	975.0	885.0	1170.7	841.5	1052.3	693	45.1	1564.3	1457.0	403.0	906.0	1400.0
Mean	1822.7	446.8	881.7	1148.6	1139.5	975.0	885.0	1168.4	873.3	1090.8	632	45.5	1554.4	1475.0	390.7	906.0	999.6
Maximum	1975	846	1152	1300	1317	975	885	1366	1226	1975	812	48.2	1744	1590	530	973	1744
Percent greater than or equal to the NM site standard (976 mg/L)	100.00%	0.00%	12.50%	96.30%	100.00%	0.00%	0.00%	97.33%	21.05%	55.74%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	51.06%

Table C-2. Sulfate Near Upgradient Background Data Set (data not corrected for non-detects or duplicates)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
DD	27-Aug-76	Sulfate	Homestake	None	1938
DD	15-Sep-81	Sulfate	Homestake	None	1575
DD	24-Mar-82	Sulfate	Homestake	None	1672
DD	26-May-82	Sulfate	Homestake	None	1808
DD	18-Nov-82	Sulfate	Homestake	None	1848
DD	04-Mar-83	Sulfate	Homestake	None	1724
DD	28-Jun-83	Sulfate	NMEID	None	1658
DD	28-Jun-83	Sulfate	Homestake	None	1748
DD	14-Sep-83	Sulfate	Homestake	None	1803
DD	19-Dec-83	Sulfate	Homestake	None	1789
DD	07-Mar-84	Sulfate	Homestake	None	1816
DD	09-May-84	Sulfate	Controls for Env. Pollution	None	1820
DD	09-May-84	Sulfate	Homestake	None	1913
DD	12-Sep-84	Sulfate	Homestake	None	1884
DD	12-Dec-84	Sulfate	Homestake	None	1958
DD	13-Mar-85	Sulfate	Homestake	None	1885
DD	06-Jun-85	Sulfate	Homestake	None	1788
DD	04-Sep-85	Sulfate	Homestake	None	1770
DD	16-Dec-85	Sulfate	Homestake	None	1831
DD	20-Mar-86	Sulfate	Homestake	None	1797
DD	30-Jun-86	Sulfate	Homestake	None	1867
DD	15-Sep-86	Sulfate	Homestake	None	1836
DD	09-Dec-86	Sulfate	Homestake	None	1804
DD	19-Mar-87	Sulfate	Homestake	None	1899
DD	24-Jun-87	Sulfate	Homestake	None	1904
DD	15-Sep-87	Sulfate	Homestake	None	1816
DD	08-Dec-87	Sulfate	Homestake	None	1869
DD	24-Feb-88	Sulfate	Homestake	None	1911
DD	09-Jun-88	Sulfate	Homestake	None	1818
DD	11-Oct-88	Sulfate	Homestake	None	1877
DD	08-Dec-88	Sulfate	Homestake	None	1844
DD	13-Dec-88	Sulfate	Barringer	None	1830
DD	13-Dec-88	Sulfate	Homestake	None	1857
DD	11-Jan-89	Sulfate	Homestake	None	1881
DD	11-Jan-89	Sulfate	Barringer	None	1810
DD	15-Feb-89	Sulfate	Barringer	None	1880
DD	15-Feb-89	Sulfate	Homestake	None	1867
DD	29-Mar-89	Sulfate	Homestake	None	1916
DD	13-Jun-89	Sulfate	Homestake	None	1873
DD	15-Nov-89	Sulfate	Homestake	None	1850
DD	13-Mar-90	Sulfate	Homestake	None	1955
DD	12-Sep-90	Sulfate	Homestake	None	1964
DD	27-Feb-91	Sulfate	Homestake	None	1804
DD	16-Sep-91	Sulfate	Homestake	None	1975
DD	09-Mar-92	Sulfate	Homestake	None	1959
DD	22-Sep-92	Sulfate	Homestake	None	1971
DD	21-Oct-93	Sulfate	Energy Labs	None	1726
DD	09-Mar-94	Sulfate	Energy Labs	None	1751
DD	21-Oct-94	Sulfate	Energy Labs	None	1871
DD	10-Oct-95	Sulfate	Energy Labs	None	1651
DD	10-Oct-96	Sulfate	Energy Labs	None	1683
DD	14-Apr-97	Sulfate	Energy Labs	None	1683
DD	09-Sep-97	Sulfate	Energy Labs	None	1710
DD	01-Apr-98	Sulfate	Energy Labs	None	1790
DD	20-Apr-99	Sulfate	Energy Labs	None	1540
ND	12-Jan-83	Sulfate	Homestake	None	846
ND	06-Jan-84	Sulfate	Homestake	None	780
ND	18-Dec-89	Sulfate	Homestake	None	448
ND	17-Oct-90	Sulfate	Homestake	None	422
ND	16-Sep-91	Sulfate	Homestake	None	502

Table C-2. Sulfate Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
ND	18-Aug-92	Sulfate	Homestake	None	402
ND	25-Aug-93	Sulfate	Energy Labs	None	324
ND	14-Mar-94	Sulfate	Energy Labs	None	357
ND	22-Aug-94	Sulfate	Energy Labs	None	328
ND	22-Aug-95	Sulfate	Energy Labs	None	340
ND	29-Jul-96	Sulfate	Energy Labs	None	335
ND	11-Aug-97	Sulfate	Energy Labs	None	362
ND	05-Aug-98	Sulfate	Energy Labs	None	363
P	09-Apr-76	Sulfate	Homestake	None	816
P	27-Aug-76	Sulfate	Homestake	None	864
P	13-Jun-77	Sulfate	Homestake	None	813
P	13-Jun-77	Sulfate	NMEID	None	754
P	13-Jun-77	Sulfate	Eberline	None	754.3
P	24-Aug-77	Sulfate	Homestake	None	842
P	24-Aug-77	Sulfate	NMEID	None	818
P	24-Aug-77	Sulfate	Eberline	None	818
P	11-Oct-77	Sulfate	NMEID	None	753
P	11-Oct-77	Sulfate	Homestake	None	856
P	01-Feb-78	Sulfate	NMEID	None	854
P	01-Feb-78	Sulfate	Homestake	None	890
P	17-Apr-78	Sulfate	Homestake	None	797
P	11-Jul-78	Sulfate	Homestake	None	811
P	23-Oct-78	Sulfate	Homestake	None	792
P	23-Oct-78	Sulfate	NMEID	None	735
P	30-Jan-79	Sulfate	Homestake	None	695
P	30-Jan-79	Sulfate	NMEID	None	702.2
P	30-Apr-79	Sulfate	Homestake	None	738.2
P	30-Apr-79	Sulfate	NMEID	None	728
P	12-Jul-79	Sulfate	Homestake	None	772.4
P	10-Sep-79	Sulfate	Homestake	None	801
P	06-Nov-79	Sulfate	Homestake	None	857
P	09-Jan-80	Sulfate	Homestake	None	867.9
P	16-Apr-80	Sulfate	Homestake	None	823
P	17-Apr-80	Sulfate	NMEID	None	792
P	16-Jul-80	Sulfate	Homestake	None	823
P	16-Jul-80	Sulfate	NMEID	None	733
P	13-Oct-80	Sulfate	NMEID	None	759
P	13-Oct-80	Sulfate	Homestake	None	821
P	07-Jan-81	Sulfate	Homestake	None	825
P	07-Jan-81	Sulfate	NMEID	None	783.2
P	15-Apr-81	Sulfate	Homestake	None	840
P	15-Apr-81	Sulfate	NMEID	None	796.2
P	07-Jul-81	Sulfate	Homestake	None	837
P	07-Oct-81	Sulfate	Homestake	None	850
P	28-Dec-81	Sulfate	NMEID	None	800.3
P	28-Dec-81	Sulfate	Homestake	None	800
P	24-Mar-82	Sulfate	Homestake	None	838
P	24-Mar-82	Sulfate	NMEID	None	802.8
P	22-May-82	Sulfate	Homestake	None	856
P	25-Aug-82	Sulfate	Homestake	None	835
P	18-Nov-82	Sulfate	Homestake	None	845
P	18-Nov-82	Sulfate	Controls for Env Pollution	None	800
P	18-Nov-82	Sulfate	Assalgai Lab	None	518
P	18-Nov-82	Sulfate	Controls for Env Pollution	None	802
P	23-Feb-83	Sulfate	Homestake	None	828
P	23-Feb-83	Sulfate	NM Tech Inst	None	765
P	26-May-83	Sulfate	Homestake	None	858
P	27-Jun-83	Sulfate	Homestake	None	808
P	27-Jun-83	Sulfate	NMEID	None	894

Table C-2. Sulfate Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P	12-Sep-83	Sulfate	Homestake	None	838
P	19-Dec-83	Sulfate	Homestake	None	846
P	07-Mar-84	Sulfate	Homestake	None	844
P	09-May-84	Sulfate	Homestake	None	954
P	09-May-84	Sulfate	Controls for Env Pollution	None	900
P	12-Sep-84	Sulfate	Homestake	None	931
P	13-Dec-84	Sulfate	Homestake	None	884
P	11-Mar-85	Sulfate	Homestake	None	988
P	11-Mar-85	Sulfate	Controls for Env Pollution	None	840
P	29-May-85	Sulfate	Homestake	None	932
P	04-Sep-85	Sulfate	Homestake	None	867
P	04-Sep-85	Sulfate	Controls for Env Pollution	None	911
P	16-Dec-85	Sulfate	Homestake	None	897
P	10-Mar-86	Sulfate	Homestake	None	894
P	10-Mar-86	Sulfate	Controls for Env Pollution	None	850
P	30-Jun-86	Sulfate	Homestake	None	902
P	15-Sep-86	Sulfate	Homestake	None	882
P	15-Sep-86	Sulfate	Controls for Env Pollution	None	820
P	16-Dec-86	Sulfate	Homestake	None	993
P	19-Mar-87	Sulfate	Homestake	None	889
P	19-Mar-87	Sulfate	Controls for Env Pollution	None	846
P	24-Jun-87	Sulfate	Homestake	None	1152
P	16-Sep-87	Sulfate	Homestake	None	847
P	16-Sep-87	Sulfate	Controls for Env Pollution	None	807
P	08-Dec-87	Sulfate	Homestake	None	904
P	24-Feb-88	Sulfate	Homestake	None	966
P	24-Feb-88	Sulfate	Barringer	None	923
P	12-May-88	Sulfate	Homestake	None	930
P	23-Aug-88	Sulfate	Homestake	None	935
P	23-Aug-88	Sulfate	Barringer	None	874
P	12-Oct-88	Sulfate	Homestake	None	929
P	13-Dec-88	Sulfate	Homestake	None	897
P	13-Dec-88	Sulfate	Barringer	None	861
P	11-Jan-89	Sulfate	Homestake	None	889
P	11-Jan-89	Sulfate	Barringer	None	858
P	15-Feb-89	Sulfate	Homestake	None	923
P	15-Feb-89	Sulfate	Barringer	None	894
P	16-May-89	Sulfate	Homestake	None	946
P	10-Aug-89	Sulfate	Homestake	None	910
P	15-Nov-89	Sulfate	Homestake	None	936
P	13-Mar-90	Sulfate	Homestake	None	896
P	04-Jun-90	Sulfate	Homestake	None	968
P	12-Sep-90	Sulfate	Homestake	None	984
P	03-Dec-90	Sulfate	Homestake	None	954
P	03-Dec-90	Sulfate	Barringer	None	872
P	27-Feb-91	Sulfate	Homestake	None	1008
P	03-Jun-91	Sulfate	Homestake	None	913
P	16-Sep-91	Sulfate	Homestake	None	967
P	18-Nov-91	Sulfate	Homestake	None	998
P	09-Mar-92	Sulfate	Homestake	None	1004
P	04-Jun-92	Sulfate	Homestake	None	974
P	21-Sep-92	Sulfate	Homestake	None	1012
P	03-Dec-92	Sulfate	Homestake	None	969
P	03-Mar-93	Sulfate	Homestake	None	996

Table C-2. Sulfate Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P	01-Jun-93	Sulfate	Homestake	None	954
P	08-Sep-93	Sulfate	Energy Labs	None	828
P	24-Nov-93	Sulfate	Energy Labs	None	868
P	01-Mar-94	Sulfate	Energy Labs	None	790
P	31-May-94	Sulfate	Energy Labs	None	823
P	01-Sep-94	Sulfate	Energy Labs	None	904
P	28-Nov-94	Sulfate	Energy Labs	None	940
P	16-Mar-95	Sulfate	Energy Labs	None	843
P	16-Mar-95	Sulfate	Energy Labs	None	843
P	06-Jun-95	Sulfate	Energy Labs	None	885
P	05-Sep-95	Sulfate	Energy Labs	None	885
P	05-Dec-95	Sulfate	Energy Labs	None	864
P	05-Dec-95	Sulfate	Energy Labs	None	846
P	11-Mar-96	Sulfate	Energy Labs	None	1001
P	03-Jun-96	Sulfate	Energy Labs	None	865
P	17-Sep-96	Sulfate	Energy Labs	None	865
P	10-Oct-96	Sulfate	Energy Labs	None	833
P	06-Mar-97	Sulfate	Energy Labs	None	867
P	27-May-97	Sulfate	Energy Labs	None	919
P	09-Sep-97	Sulfate	Energy Labs	None	835
P	03-Nov-97	Sulfate	Energy Labs	None	835
P	04-Mar-98	Sulfate	Energy Labs	None	873
P	05-May-98	Sulfate	Energy Labs	None	984
P	16-Sep-98	Sulfate	Energy Labs	None	980
P	12-Nov-98	Sulfate	Energy Labs	None	986
P	02-Mar-99	Sulfate	Energy Labs	None	1030
P	02-Mar-99	Sulfate	ACZ Lab	None	920
P	10-May-99	Sulfate	Energy Labs	None	917
P1	21-Sep-92	Sulfate	Homestake	None	1226
P1	21-Jan-93	Sulfate	Homestake	None	1309
P1	21-Jan-93	Sulfate	Energy Labs	None	1162
P1	13-Apr-93	Sulfate	Homestake	None	1296
P1	13-Jul-93	Sulfate	Homestake	None	1230
P1	21-Oct-93	Sulfate	Energy Labs	None	974
P1	04-Jan-94	Sulfate	Energy Labs	None	1055
P1	07-Mar-94	Sulfate	Energy Labs	None	1090
P1	12-Apr-94	Sulfate	Energy Labs	None	1153
P1	06-Jul-94	Sulfate	Energy Labs	None	1106
P1	21-Oct-94	Sulfate	Energy Labs	None	1103
P1	04-Jan-95	Sulfate	Energy Labs	None	1135
P1	04-Jan-95	Sulfate	Energy Labs	None	1108
P1	12-Apr-95	Sulfate	Energy Labs	None	1093
P1	06-Jul-95	Sulfate	Energy Labs	None	1069
P1	03-Oct-95	Sulfate	Energy Labs	None	1108
P1	10-Jan-96	Sulfate	Energy Labs	None	1112
P1	10-Jan-96	Sulfate	Energy Labs	None	1184
P1	09-Apr-96	Sulfate	Energy Labs	None	1151
P1	09-Apr-96	Sulfate	Energy Labs	None	1173
P1	19-Jul-96	Sulfate	Energy Labs	None	1150
P1	19-Jul-96	Sulfate	Energy Labs	None	1183
P1	04-Nov-96	Sulfate	Energy Labs	None	1125
P1	04-Nov-96	Sulfate	Energy Labs	None	1146
P1	13-Jan-97	Sulfate	Energy Labs	None	1160
P1	14-Apr-97	Sulfate	Energy Labs	None	1184
P1	08-Jul-97	Sulfate	Energy Labs	None	1197
P1	03-Nov-97	Sulfate	Energy Labs	None	1100
P1	19-Jan-98	Sulfate	Energy Labs	None	1150
P1	01-Apr-98	Sulfate	Energy Labs	None	1300
P1	14-Jul-98	Sulfate	Energy Labs	None	1200
P1	28-Oct-98	Sulfate	Energy Labs	None	1100
P1	21-Jan-99	Sulfate	Energy Labs	None	1150

Table C-2. Sulfate Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P2	21-Sep-92	Sulfate	Homestake	None	1317
P2	08-Feb-93	Sulfate	Homestake	None	1276
P2	08-Feb-93	Sulfate	Energy Labs	None	1120
P2	04-May-93	Sulfate	Homestake	None	1234
P2	04-May-93	Sulfate	Energy Labs	None	1093
P2	12-Aug-93	Sulfate	Homestake	None	1142
P2	01-Nov-93	Sulfate	Energy Labs	None	1075
P2	01-Nov-93	Sulfate	Energy Labs	None	1081
P2	02-Feb-94	Sulfate	Energy Labs	None	1093
P2	07-Mar-94	Sulfate	Energy Labs	None	1102
P2	29-Apr-94	Sulfate	Energy Labs	None	1096
P2	29-Apr-94	Sulfate	Energy Labs	None	1115
P2	01-Aug-94	Sulfate	Energy Labs	None	1187
P2	01-Nov-94	Sulfate	Energy Labs	None	1243
P2	03-Feb-95	Sulfate	Energy Labs	None	1112
P2	05-May-95	Sulfate	Energy Labs	None	1101
P2	02-Aug-95	Sulfate	Energy Labs	None	1140
P2	02-Aug-95	Sulfate	Energy Labs	None	1141
P2	06-Nov-95	Sulfate	Energy Labs	None	1115
P2	12-Feb-96	Sulfate	Energy Labs	None	1126
P2	14-May-96	Sulfate	Energy Labs	None	1140
P2	14-May-96	Sulfate	Energy Labs	None	1142
P2	29-Jul-96	Sulfate	Energy Labs	None	1161
P2	03-Feb-97	Sulfate	Energy Labs	None	1163
P2	29-Apr-97	Sulfate	Energy Labs	None	1149
P2	28-Jul-97	Sulfate	Energy Labs	None	1200
P2	13-Oct-97	Sulfate	Energy Labs	None	1250
P2	10-Feb-98	Sulfate	Energy Labs	None	1070
P2	05-May-98	Sulfate	Energy Labs	None	1100
P2	04-Aug-98	Sulfate	Energy Labs	None	1130
P2	28-Oct-98	Sulfate	Energy Labs	None	1030
P2	03-Feb-99	Sulfate	Energy Labs	None	1100
P2	11-May-99	Sulfate	Energy Labs	None	1050
P3	23-Apr-98	Sulfate	Energy Labs	None	975
P4	24-Apr-98	Sulfate	Energy Labs	None	885
Q	09-Apr-76	Sulfate	Homestake	None	1246
Q	27-Aug-76	Sulfate	Homestake	None	1330
Q	13-Jun-77	Sulfate	Homestake	None	1200
Q	13-Jun-77	Sulfate	Eberline	None	1298.5
Q	24-Aug-77	Sulfate	Homestake	None	1247
Q	24-Aug-77	Sulfate	Eberline	None	1181.6
Q	11-Oct-77	Sulfate	Eberline	None	1112
Q	11-Oct-77	Sulfate	Homestake	None	1265
Q	01-Feb-78	Sulfate	Eberline	None	1141.3
Q	01-Feb-78	Sulfate	Homestake	None	1200
Q	17-Apr-78	Sulfate	Homestake	None	1134
Q	10-Jul-78	Sulfate	Homestake	None	1200
Q	23-Oct-78	Sulfate	Homestake	None	1208
Q	23-Oct-78	Sulfate	NMEID	None	1160
Q	30-Jan-79	Sulfate	Homestake	None	1141
Q	30-Jan-79	Sulfate	NMEID	None	1219
Q	30-Apr-79	Sulfate	Homestake	None	1172
Q	30-Apr-79	Sulfate	NMEID	None	1013.1
Q	12-Jul-79	Sulfate	Homestake	None	1220.1
Q	10-Sep-79	Sulfate	Homestake	None	1208
Q	06-Nov-79	Sulfate	Homestake	None	1238
Q	09-Jan-80	Sulfate	Homestake	None	1272.4
Q	16-Apr-80	Sulfate	Homestake	None	1232
Q	17-Apr-80	Sulfate	NMEID	None	1184
Q	16-Jul-80	Sulfate	Homestake	None	1149
Q	16-Jul-80	Sulfate	NMEID	None	1059

Table C-2. Sulfate Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
Q	13-Oct-80	Sulfate	Homestake	None	1197
Q	13-Oct-80	Sulfate	NMEID	None	1108
Q	07-Jan-81	Sulfate	Homestake	None	1245
Q	07-Jan-81	Sulfate	NMEID	None	1193
Q	15-Apr-81	Sulfate	Homestake	None	1299
Q	15-Apr-81	Sulfate	NMEID	None	1254
Q	07-Jul-81	Sulfate	Homestake	None	1261
Q	07-Oct-81	Sulfate	Homestake	None	1196
Q	28-Dec-81	Sulfate	Homestake	None	1249
Q	28-Dec-81	Sulfate	NMEID	None	1199
Q	24-Mar-82	Sulfate	Homestake	None	1133
Q	24-Mar-82	Sulfate	NMEID	None	1095
Q	22-May-82	Sulfate	Homestake	None	1191
Q	25-Aug-82	Sulfate	Homestake	None	1107
Q	18-Nov-82	Sulfate	Homestake	None	1091
Q	23-Feb-83	Sulfate	Homestake	None	1038
Q	23-Feb-83	Sulfate	NM Tech Inst	None	990
Q	26-May-83	Sulfate	Homestake	None	1097
Q	28-Jun-83	Sulfate	NMEID	None	1168
Q	28-Jun-83	Sulfate	Homestake	None	1102
Q	21-Sep-83	Sulfate	Homestake	None	1167
Q	19-Dec-83	Sulfate	Homestake	None	1136
Q	07-Mar-84	Sulfate	Homestake	None	1171
Q	09-May-84	Sulfate	Homestake	None	1259
Q	09-May-84	Sulfate	Controls for Env Pollution	None	1210
Q	12-Sep-84	Sulfate	Homestake	None	1166
Q	12-Dec-84	Sulfate	Homestake	None	1192
Q	11-Mar-85	Sulfate	Homestake	None	1177
Q	29-May-85	Sulfate	Homestake	None	1185
Q	06-Sep-85	Sulfate	Homestake	None	1106
Q	16-Dec-85	Sulfate	Homestake	None	1140
Q	10-Mar-86	Sulfate	Homestake	None	1072
Q	30-Jun-86	Sulfate	Homestake	None	1128
Q	15-Sep-86	Sulfate	Homestake	None	1122
Q	15-Dec-86	Sulfate	Homestake	None	961
Q	19-Mar-87	Sulfate	Homestake	None	1119
Q	19-Jun-87	Sulfate	Homestake	None	1123
Q	15-Sep-87	Sulfate	Homestake	None	853
Q	08-Dec-87	Sulfate	Homestake	None	1124
Q	24-Feb-88	Sulfate	Homestake	None	1196
Q	12-May-88	Sulfate	Homestake	None	1191
Q	23-Aug-88	Sulfate	Homestake	None	1208
Q	03-Nov-88	Sulfate	Homestake	None	1165
Q	13-Dec-88	Sulfate	Homestake	None	1114
Q	13-Dec-88	Sulfate	Barringer	None	1090
Q	11-Jan-89	Sulfate	Homestake	None	1102
Q	11-Jan-89	Sulfate	Barringer	None	1070
Q	15-Feb-89	Sulfate	Homestake	None	1155
Q	15-Feb-89	Sulfate	Barringer	None	1140
Q	16-May-89	Sulfate	Homestake	None	1148
Q	15-Nov-89	Sulfate	Homestake	None	1202
Q	13-Mar-90	Sulfate	Homestake	None	1216
Q	12-Sep-90	Sulfate	Homestake	None	1245
Q	27-Feb-91	Sulfate	Homestake	None	1267
Q	16-Sep-91	Sulfate	Homestake	None	1165
Q	09-Mar-92	Sulfate	Homestake	None	1173
Q	16-Sep-92	Sulfate	Homestake	None	1309
Q	03-Mar-93	Sulfate	Homestake	None	1241
Q	08-Sep-93	Sulfate	Energy Labs	None	1163
Q	01-Mar-94	Sulfate	Energy Labs	None	1041

Table C-2. Sulfate Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
Q	01-Mar-94	Sulfate	Energy Labs	None	1066
Q	01-Sep-94	Sulfate	Energy Labs	None	1160
Q	16-Mar-95	Sulfate	Energy Labs	None	1098
Q	05-Sep-95	Sulfate	Energy Labs	None	1103
Q	11-Mar-96	Sulfate	Energy Labs	None	1366
Q	17-Sep-96	Sulfate	Energy Labs	None	1105
Q	06-Mar-97	Sulfate	Energy Labs	None	1146
Q	09-Sep-97	Sulfate	Energy Labs	None	1250
Q	04-Mar-98	Sulfate	Energy Labs	None	1160
Q	02-Mar-99	Sulfate	Energy Labs	None	1270
R	09-Apr-76	Sulfate	Homestake	None	853
R	01-Sep-76	Sulfate	Homestake	None	937
R	13-Jun-77	Sulfate	Homestake	None	832
R	13-Jun-77	Sulfate	Eberline	None	782.1
R	24-Aug-77	Sulfate	Homestake	None	852
R	24-Aug-77	Sulfate	Eberline	None	818
R	11-Oct-77	Sulfate	Eberline	None	753
R	11-Oct-77	Sulfate	Homestake	None	878
R	01-Feb-78	Sulfate	Eberline	None	826.5
R	01-Feb-78	Sulfate	Homestake	None	875
R	17-Apr-78	Sulfate	Homestake	None	790
R	10-Jul-78	Sulfate	Homestake	None	814
R	23-Oct-78	Sulfate	Homestake	None	757
R	23-Oct-78	Sulfate	NMEID	None	696.9
R	31-Jan-79	Sulfate	Homestake	None	656
R	31-Jan-79	Sulfate	NMEID	None	689.8
R	30-Apr-79	Sulfate	Homestake	None	750
R	30-Apr-79	Sulfate	NMEID	None	676.8
R	12-Jul-79	Sulfate	Homestake	None	679.4
R	10-Sep-79	Sulfate	Homestake	None	778
R	06-Nov-79	Sulfate	Homestake	None	801
R	07-Jan-80	Sulfate	NMEID	None	651.7
R	09-Jan-80	Sulfate	Homestake	None	833.3
R	16-Apr-80	Sulfate	Homestake	None	783
R	17-Apr-80	Sulfate	NMEID	None	733.1
R	16-Jul-80	Sulfate	Homestake	None	761
R	16-Jul-80	Sulfate	NMEID	None	691.3
R	13-Oct-80	Sulfate	NMEID	None	637.2
R	13-Oct-80	Sulfate	Homestake	None	708
R	07-Jan-81	Sulfate	Homestake	None	706
R	15-Apr-81	Sulfate	Homestake	None	723
R	15-Apr-81	Sulfate	NMEID	None	695.5
R	07-Jul-81	Sulfate	Homestake	None	714
R	28-Dec-81	Sulfate	Homestake	None	732
R	28-Dec-81	Sulfate	NMEID	None	707.2
R	24-Mar-82	Sulfate	Homestake	None	763
R	24-Mar-82	Sulfate	NMEID	None	650.7
R	22-May-82	Sulfate	Homestake	None	800
R	25-Aug-82	Sulfate	Homestake	None	759
R	18-Nov-82	Sulfate	Homestake	None	779
R	23-Feb-83	Sulfate	Homestake	None	759
R	26-May-83	Sulfate	Homestake	None	750
R	28-Jun-83	Sulfate	Homestake	None	732
R	28-Jun-83	Sulfate	NMEID	None	689
R	12-Sep-83	Sulfate	Homestake	None	784
R	20-Dec-83	Sulfate	Homestake	None	770
R	07-Mar-84	Sulfate	Homestake	None	835
R	09-May-84	Sulfate	Homestake	None	876
R	09-May-84	Sulfate	Controls for Env Pollution	None	800
R	12-Sep-84	Sulfate	Homestake	None	831

Table C-2. Sulfate Near Upgradient Background Data Set (data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
R	12-Dec-84	Sulfate	Homestake	None	807
R	11-Mar-85	Sulfate	Homestake	None	881
R	11-Mar-85	Sulfate	Controls for Env Pollution	None	760
R	29-May-85	Sulfate	Homestake	None	853
R	05-Sep-85	Sulfate	Homestake	None	793
R	05-Sep-85	Sulfate	Controls for Env Pollution	None	850
R	16-Dec-85	Sulfate	Homestake	None	845
R	10-Mar-86	Sulfate	Homestake	None	831
R	10-Mar-86	Sulfate	Controls for Env Pollution	None	810
R	30-Jun-86	Sulfate	Homestake	None	868
R	15-Sep-86	Sulfate	Homestake	None	845
R	15-Sep-86	Sulfate	Controls for Env Pollution	None	760
R	15-Dec-86	Sulfate	Homestake	None	1180
R	19-Mar-87	Sulfate	Homestake	None	887
R	19-Mar-87	Sulfate	Controls for Env Pollution	None	842
R	19-Jun-87	Sulfate	Homestake	None	860
R	15-Sep-87	Sulfate	Controls for Env Pollution	None	816
R	08-Dec-87	Sulfate	Homestake	None	928
R	24-Feb-88	Sulfate	Homestake	None	935
R	24-Feb-88	Sulfate	Barringer	None	907
R	12-May-88	Sulfate	Homestake	None	920
R	22-Aug-88	Sulfate	Homestake	None	946
R	22-Aug-88	Sulfate	Barringer	None	875
R	03-Nov-88	Sulfate	Homestake	None	985
R	13-Dec-88	Sulfate	Homestake	None	926
R	13-Dec-88	Sulfate	Barringer	None	875
R	11-Jan-89	Sulfate	Homestake	None	895
R	11-Jan-89	Sulfate	Barringer	None	876
R	15-Feb-89	Sulfate	Homestake	None	950
R	15-Feb-89	Sulfate	Barringer	None	916
R	16-May-89	Sulfate	Homestake	None	960
R	15-Nov-89	Sulfate	Homestake	None	946
R	13-Mar-90	Sulfate	Homestake	None	938
R	12-Sep-90	Sulfate	Homestake	None	967
R	27-Feb-91	Sulfate	Homestake	None	1082
R	16-Sep-91	Sulfate	Homestake	None	1045
R	09-Mar-92	Sulfate	Homestake	None	1090
R	16-Sep-92	Sulfate	Homestake	None	1086
R	16-Sep-92	Sulfate	Energy Labs	None	975
R	01-Jun-93	Sulfate	Homestake	None	1002
R	08-Sep-93	Sulfate	Energy Labs	None	955
R	07-Mar-94	Sulfate	Energy Labs	None	961
R	31-May-94	Sulfate	Energy Labs	None	942
R	01-Sep-94	Sulfate	Energy Labs	None	1023
R	06-Jun-95	Sulfate	Energy Labs	None	1007
R	06-Jun-95	Sulfate	Energy Labs	None	1024
R	05-Sep-95	Sulfate	Energy Labs	None	1053
R	05-Sep-95	Sulfate	Energy Labs	None	1063
R	03-Jun-96	Sulfate	Energy Labs	None	1096
R	17-Sep-96	Sulfate	Energy Labs	None	1104
R	10-Oct-96	Sulfate	Energy Labs	None	1051
R	27-May-97	Sulfate	Energy Labs	None	1226
R	06-May-98	Sulfate	Energy Labs	None	1120
R	20-May-99	Sulfate	Energy Labs	None	1130

Table C-3. Sulfate Near Upgradient Background Data Set for Well DD
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
27-Aug-76	Sulfate	1938
15-Sep-81	Sulfate	1575
24-Mar-82	Sulfate	1672
26-May-82	Sulfate	1808
18-Nov-82	Sulfate	1848
04-Mar-83	Sulfate	1724
28-Jun-83	Sulfate	1703
14-Sep-83	Sulfate	1803
19-Dec-83	Sulfate	1789
07-Mar-84	Sulfate	1816
09-May-84	Sulfate	1866.5
12-Sep-84	Sulfate	1884
12-Dec-84	Sulfate	1958
13-Mar-85	Sulfate	1885
06-Jun-85	Sulfate	1788
04-Sep-85	Sulfate	1770
16-Dec-85	Sulfate	1831
20-Mar-86	Sulfate	1797
30-Jun-86	Sulfate	1867
15-Sep-86	Sulfate	1836
09-Dec-86	Sulfate	1804
19-Mar-87	Sulfate	1899
24-Jun-87	Sulfate	1904
15-Sep-87	Sulfate	1816
08-Dec-87	Sulfate	1869
24-Feb-88	Sulfate	1911
09-Jun-88	Sulfate	1818
11-Oct-88	Sulfate	1877
08-Dec-88	Sulfate	1844
13-Dec-88	Sulfate	1843.5
11-Jan-89	Sulfate	1845.5
15-Feb-89	Sulfate	1873.5
29-Mar-89	Sulfate	1916
13-Jun-89	Sulfate	1873
15-Nov-89	Sulfate	1850
13-Mar-90	Sulfate	1955
12-Sep-90	Sulfate	1964
27-Feb-91	Sulfate	1804
16-Sep-91	Sulfate	1975
09-Mar-92	Sulfate	1959
22-Sep-92	Sulfate	1971
21-Oct-93	Sulfate	1726
09-Mar-94	Sulfate	1751
21-Oct-94	Sulfate	1871
10-Oct-95	Sulfate	1651
10-Oct-96	Sulfate	1683
14-Apr-97	Sulfate	1683
09-Sep-97	Sulfate	1710
01-Apr-98	Sulfate	1790
20-Apr-99	Sulfate	1540

Table C-4. Sulfate Near Upgradient Background Data Set for Well ND
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
12-Jan-83	Sulfate	846
06-Jan-84	Sulfate	780
18-Dec-89	Sulfate	448
17-Oct-90	Sulfate	422
16-Sep-91	Sulfate	502
18-Aug-92	Sulfate	402
25-Aug-93	Sulfate	324
14-Mar-94	Sulfate	357
22-Aug-94	Sulfate	328
22-Aug-95	Sulfate	340
29-Jul-96	Sulfate	335
11-Aug-97	Sulfate	362
05-Aug-98	Sulfate	363

Table C-5. Sulfate Near Upgradient Background Data Set for Well P
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
09-Apr-76	Sulfate	816
27-Aug-76	Sulfate	864
13-Jun-77	Sulfate	773.77
24-Aug-77	Sulfate	826
11-Oct-77	Sulfate	804.5
01-Feb-78	Sulfate	872
17-Apr-78	Sulfate	797
11-Jul-78	Sulfate	811
23-Oct-78	Sulfate	763.5
30-Jan-79	Sulfate	698.6
30-Apr-79	Sulfate	733.1
12-Jul-79	Sulfate	772.4
10-Sep-79	Sulfate	801
06-Nov-79	Sulfate	857
09-Jan-80	Sulfate	867.9
16-Apr-80	Sulfate	807.5
16-Jul-80	Sulfate	778
13-Oct-80	Sulfate	790
07-Jan-81	Sulfate	804.1
15-Apr-81	Sulfate	818.1
07-Jul-81	Sulfate	837
07-Oct-81	Sulfate	850
28-Dec-81	Sulfate	800.15
24-Mar-82	Sulfate	820.4
22-May-82	Sulfate	856
25-Aug-82	Sulfate	835
18-Nov-82	Sulfate	741.25
23-Feb-83	Sulfate	796.5
26-May-83	Sulfate	858
27-Jun-83	Sulfate	851
12-Sep-83	Sulfate	838
19-Dec-83	Sulfate	846
07-Mar-84	Sulfate	844
09-May-84	Sulfate	927
12-Sep-84	Sulfate	931
13-Dec-84	Sulfate	884
11-Mar-85	Sulfate	914
29-May-85	Sulfate	932
04-Sep-85	Sulfate	889
16-Dec-85	Sulfate	897
10-Mar-86	Sulfate	872
30-Jun-86	Sulfate	902
15-Sep-86	Sulfate	851
16-Dec-86	Sulfate	993
19-Mar-87	Sulfate	867.5
24-Jun-87	Sulfate	1152
16-Sep-87	Sulfate	827

Table C-5. Sulfate Near Upgradient Background Data Set for Well P (corrected for non-detects and duplicates) (continued)

Sample Date	Parameter Code	Final Data Set
12-May-88	Sulfate	930
23-Aug-88	Sulfate	904.5
12-Oct-88	Sulfate	929
13-Dec-88	Sulfate	879
11-Jan-89	Sulfate	873.5
15-Feb-89	Sulfate	908.5
16-May-89	Sulfate	946
10-Aug-89	Sulfate	910
15-Nov-89	Sulfate	936
13-Mar-90	Sulfate	896
04-Jun-90	Sulfate	968
12-Sep-90	Sulfate	984
03-Dec-90	Sulfate	913
27-Feb-91	Sulfate	1008
03-Jun-91	Sulfate	913
16-Sep-91	Sulfate	967
18-Nov-91	Sulfate	998
09-Mar-92	Sulfate	1004
04-Jun-92	Sulfate	974
21-Sep-92	Sulfate	1012
03-Dec-92	Sulfate	969
03-Mar-93	Sulfate	996
01-Jun-93	Sulfate	954
08-Sep-93	Sulfate	828
24-Nov-93	Sulfate	868
01-Mar-94	Sulfate	790
31-May-94	Sulfate	823
01-Sep-94	Sulfate	904
28-Nov-94	Sulfate	940
16-Mar-95	Sulfate	843
06-Jun-95	Sulfate	885
05-Sep-95	Sulfate	885
05-Dec-95	Sulfate	855
11-Mar-96	Sulfate	1001
03-Jun-96	Sulfate	865
17-Sep-96	Sulfate	865
10-Oct-96	Sulfate	833
06-Mar-97	Sulfate	867
27-May-97	Sulfate	919
09-Sep-97	Sulfate	835
03-Nov-97	Sulfate	835
04-Mar-98	Sulfate	873
05-May-98	Sulfate	984
16-Sep-98	Sulfate	980
02-Mar-99	Sulfate	975
10-May-99	Sulfate	917

Table C-6. Sulfate Near Upgradient Background Data Set for Well P1
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Sep-92	Sulfate	1226
21-Jan-93	Sulfate	1235.5
13-Apr-93	Sulfate	1296
13-Jul-93	Sulfate	1230
21-Oct-93	Sulfate	974
04-Jan-94	Sulfate	1055
07-Mar-94	Sulfate	1090
12-Apr-94	Sulfate	1153
06-Jul-94	Sulfate	1106
21-Oct-94	Sulfate	1103
04-Jan-95	Sulfate	1121.5
12-Apr-95	Sulfate	1093
06-Jul-95	Sulfate	1069
03-Oct-95	Sulfate	1108
10-Jan-96	Sulfate	1148
09-Apr-96	Sulfate	1162
19-Jul-96	Sulfate	1166.5
04-Nov-96	Sulfate	1135.5
13-Jan-97	Sulfate	1160
14-Apr-97	Sulfate	1184
08-Jul-97	Sulfate	1197
03-Nov-97	Sulfate	1100
19-Jan-98	Sulfate	1150
01-Apr-98	Sulfate	1300
14-Jul-98	Sulfate	1200
28-Oct-98	Sulfate	1100
21-Jan-99	Sulfate	1150

Table C-7. Sulfate Near Upgradient Background Data Set for Well P2
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Sep-92	Sulfate	1317
08-Feb-93	Sulfate	1198
04-May-93	Sulfate	1163.5
12-Aug-93	Sulfate	1142
01-Nov-93	Sulfate	1078
02-Feb-94	Sulfate	1093
07-Mar-94	Sulfate	1102
29-Apr-94	Sulfate	1105.5
01-Aug-94	Sulfate	1187
01-Nov-94	Sulfate	1243
03-Feb-95	Sulfate	1112
05-May-95	Sulfate	1101
02-Aug-95	Sulfate	1140.5
06-Nov-95	Sulfate	1115
12-Feb-96	Sulfate	1126
14-May-96	Sulfate	1141
29-Jul-96	Sulfate	1161
03-Feb-97	Sulfate	1163
29-Apr-97	Sulfate	1149
28-Jul-97	Sulfate	1200
13-Oct-97	Sulfate	1250
10-Feb-98	Sulfate	1070
05-May-98	Sulfate	1100
04-Aug-98	Sulfate	1130
28-Oct-98	Sulfate	1030
03-Feb-99	Sulfate	1100
11-May-99	Sulfate	1050

Table C-8. Sulfate Near Upgradient Background Data Set for Wells P3 and P4
(corrected for non-detects and duplicates)

Name	Date	Code	Final Data Set
P3	23-Apr-98	Sulfate	975
P4	24-Apr-98	Sulfate	885

Table C-9. Sulfate Near Upgradient Background Data Set for Well Q
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
09-Apr-76	Sulfate	1246
27-Aug-76	Sulfate	1330
13-Jun-77	Sulfate	1249.25
24-Aug-77	Sulfate	1214.3
11-Oct-77	Sulfate	1188.5
01-Feb-78	Sulfate	1170.65
17-Apr-78	Sulfate	1134
10-Jul-78	Sulfate	1200
23-Oct-78	Sulfate	1184
30-Jan-79	Sulfate	1180
30-Apr-79	Sulfate	1092.55
12-Jul-79	Sulfate	1220.1
10-Sep-79	Sulfate	1208
06-Nov-79	Sulfate	1238
09-Jan-80	Sulfate	1272.4
16-Apr-80	Sulfate	1208
16-Jul-80	Sulfate	1104
13-Oct-80	Sulfate	1152.5
07-Jan-81	Sulfate	1219
15-Apr-81	Sulfate	1276.5
07-Jul-81	Sulfate	1261
07-Oct-81	Sulfate	1196
28-Dec-81	Sulfate	1224
24-Mar-82	Sulfate	1114
22-May-82	Sulfate	1191
25-Aug-82	Sulfate	1107
18-Nov-82	Sulfate	1091
23-Feb-83	Sulfate	1014
26-May-83	Sulfate	1097
28-Jun-83	Sulfate	1135
21-Sep-83	Sulfate	1167
19-Dec-83	Sulfate	1136
07-Mar-84	Sulfate	1171
09-May-84	Sulfate	1234.5
12-Sep-84	Sulfate	1166
12-Dec-84	Sulfate	1192
11-Mar-85	Sulfate	1177
29-May-85	Sulfate	1185
06-Sep-85	Sulfate	1106
16-Dec-85	Sulfate	1140
10-Mar-86	Sulfate	1072
30-Jun-86	Sulfate	1128
15-Sep-86	Sulfate	1122
15-Dec-86	Sulfate	961
19-Mar-87	Sulfate	1119

Table C-9. Sulfate Near Upgradient Background Data Set for Well Q (corrected for non-detects and duplicates) (continued)

Sample Date	Parameter Code	Final Data Set
19-Jun-87	Sulfate	1123
15-Sep-87	Sulfate	853
08-Dec-87	Sulfate	1124
24-Feb-88	Sulfate	1196
12-May-88	Sulfate	1191
23-Aug-88	Sulfate	1208
03-Nov-88	Sulfate	1165
13-Dec-88	Sulfate	1102
11-Jan-89	Sulfate	1086
15-Feb-89	Sulfate	1147.5
16-May-89	Sulfate	1148
15-Nov-89	Sulfate	1202
13-Mar-90	Sulfate	1216
12-Sep-90	Sulfate	1245
27-Feb-91	Sulfate	1267
16-Sep-91	Sulfate	1165
09-Mar-92	Sulfate	1173
16-Sep-92	Sulfate	1309
03-Mar-93	Sulfate	1241
08-Sep-93	Sulfate	1163
01-Mar-94	Sulfate	1053.5
01-Sep-94	Sulfate	1160
16-Mar-95	Sulfate	1098
05-Sep-95	Sulfate	1103
11-Mar-96	Sulfate	1366
17-Sep-96	Sulfate	1105
06-Mar-97	Sulfate	1146
09-Sep-97	Sulfate	1250
04-Mar-98	Sulfate	1160
02-Mar-99	Sulfate	1270

Table C-10. Sulfate Near Upgradient Background Data Set for Well R
(corrected for non-detects and duplicates)

Sample	Parameter	Final Data
09-Apr-76	Sulfate	853
01-Sep-76	Sulfate	937
13-Jun-77	Sulfate	807.05
24-Aug-77	Sulfate	835
11-Oct-77	Sulfate	815.5
01-Feb-78	Sulfate	850.75
17-Apr-78	Sulfate	790
10-Jul-78	Sulfate	814
23-Oct-78	Sulfate	726.95
31-Jan-79	Sulfate	672.9
30-Apr-79	Sulfate	713.4
12-Jul-79	Sulfate	679.4
10-Sep-79	Sulfate	778
06-Nov-79	Sulfate	801
07-Jan-80	Sulfate	651.7
09-Jan-80	Sulfate	833.3
16-Apr-80	Sulfate	758.05
16-Jul-80	Sulfate	726.15
13-Oct-80	Sulfate	672.6
07-Jan-81	Sulfate	706
15-Apr-81	Sulfate	709.25
07-Jul-81	Sulfate	714
28-Dec-81	Sulfate	719.6
24-Mar-82	Sulfate	706.85
22-May-82	Sulfate	800
25-Aug-82	Sulfate	759
18-Nov-82	Sulfate	779
23-Feb-83	Sulfate	759
26-May-83	Sulfate	750
28-Jun-83	Sulfate	710.5
12-Sep-83	Sulfate	784
20-Dec-83	Sulfate	770
07-Mar-84	Sulfate	835
09-May-84	Sulfate	838
12-Sep-84	Sulfate	831
12-Dec-84	Sulfate	807
11-Mar-85	Sulfate	820.5
29-May-85	Sulfate	853
05-Sep-85	Sulfate	821.5
16-Dec-85	Sulfate	845
10-Mar-86	Sulfate	820.5
30-Jun-86	Sulfate	868
15-Sep-86	Sulfate	802.5
15-Dec-86	Sulfate	1180
19-Mar-87	Sulfate	864.5
19-Jun-87	Sulfate	860
15-Sep-87	Sulfate	816

Table C-10. Sulfate Near Upgradient Background Data Set for Well R (corrected for non-detects and duplicates) (continued)

Sample	Parameter	Final Data
08-Dec-87	Sulfate	928
24-Feb-88	Sulfate	921
12-May-88	Sulfate	920
22-Aug-88	Sulfate	910.5
03-Nov-88	Sulfate	985
13-Dec-88	Sulfate	900.5
11-Jan-89	Sulfate	885.5
15-Feb-89	Sulfate	933
16-May-89	Sulfate	960
15-Nov-89	Sulfate	946
13-Mar-90	Sulfate	938
12-Sep-90	Sulfate	967
27-Feb-91	Sulfate	1082
16-Sep-91	Sulfate	1045
09-Mar-92	Sulfate	1090
16-Sep-92	Sulfate	1030.5
01-Jun-93	Sulfate	1002
08-Sep-93	Sulfate	955
07-Mar-94	Sulfate	961
31-May-94	Sulfate	942
01-Sep-94	Sulfate	1023
06-Jun-95	Sulfate	1015.5
05-Sep-95	Sulfate	1058
03-Jun-96	Sulfate	1096
17-Sep-96	Sulfate	1104
10-Oct-96	Sulfate	1051
27-May-97	Sulfate	1226
06-May-98	Sulfate	1120
20-May-99	Sulfate	1130

Table C-11. Sulfate Near Upgradient Background Groundwater Data Set Used in Statistical Analysis (all concentrations in mg/L)

Well ID								
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R
1975	846	1152	1300	1317	975	885	1366	1226
1971	780	1012	1296	1250			1330	1180
1964	502	1008	1235.5	1243			1309	1130
1959	448	1004	1230	1200			1276.5	1120
1958	422	1001	1226	1198			1272.4	1104
1955	402	998	1200	1187			1270	1096
1938	363	996	1197	1163.5			1267	1090
1916	362	993	1184	1163			1261	1082
1911	357	986	1166.5	1161			1250	1058
1904	340	984	1162	1149			1249.25	1051
1899	335	984	1160	1142			1246	1045
1885	328	980	1153	1141			1245	1030.5
1884	324	975	1150	1140.5			1241	1023
1877		974	1150	1130			1238	1015.5
1873.5		969	1148	1126			1234.5	1002
1873		968	1135.5	1115			1224	985
1871		967	1121.5	1112			1220.1	967
1869		954	1108	1105.5			1219	961
1867		946	1106	1102			1216	960
1866.5		944.5	1103	1101			1214.3	955
1850		940	1100	1100			1208	946
1848		936	1100	1100			1208	942
1845.5		932	1093	1093			1208	938
1844		931	1090	1078			1202	937
1843.5		930	1069	1070			1200	933
1836		929	1055	1050			1196	928
1831		927	974	1030			1196	921
1818		919					1192	920
1816		917					1191	910.5
1816		914					1191	900.5
1808		913					1188.5	885.5
1804		913					1185	868
1804		910					1184	864.5
1803		908.5					1180	860
1797		904.5					1177	853
1790		904					1173	853
1789		904					1171	850.75
1788		902					1170.65	845
1770		897					1167	838
1751		896					1166	835
1726		889					1165	835
1724		885					1165	833.3
1710		885					1163	831
1703		884					1160	821.5
1683		879					1160	820.5
1683		873.5					1152.5	820.5
1672		873					1148	816
1651		872					1147.5	815.5
1575		872					1146	814
1540		868					1140	807.05
		867.9					1136	807
		867.5					1135	802.5

Table C-11. Sulfate Near Upgradient Background Groundwater Data Set Used in Statistical Analysis (all concentrations in mg/L) (continued)

Well ID								
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R
		867					1134	801
		865					1128	800
		865					1124	790
		864					1123	784
		858					1122	779
		857					1119	778
		856					1114	770
		855					1107	759
		851					1106	759
		851					1105	758.05
		850					1104	750
		846					1103	726.95
		844					1102	726.15
		843					1098	719.6
		838					1097	714
		837					1092.55	713.4
		835					1091	710.5
		835					1086	709.25
		835					1072	706.85
		833					1053.5	706
		828					1014	679.4
		827					961	672.9
		826					853	672.6
		823						651.7
		820.4						
		818.1						
		816						
		811						
		807.5						
		804.5						
		804.1						
		801						
		800.15						
		797						
		796.5						
		790						
		790						
		778						
		773.7667						
		772.4						
		763.5						
		741.25						
		733.1						
		698.6						

Table C-12. Sulfate Near Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
Sulfate	1975	1971	1.0	**Pass**

Table C-13. Sulfate Near Upgradient Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
Sulfate, normal	1090.79	347.34	0.32	**Pass**
Sulfate, lognormal	6.95	0.32	0.05	**Pass**

Table C-14. Sulfate Near Upgradient Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
Sulfate, normal	1975	324	347.34	6.94	5.47	4.75	**Fail**

W = range of values
S = standard deviation

Table C-15. Near Upgradient Background Sulfate Data Set, Coefficient of Skew

Sulfate	Normal (xi-avg)^3
324	-450851126
328	-443832224
335	-431725119
340	-423213349
357	-395111233
362	-387089377
363	-385498147
402	-326787001
422	-299139465
448	-265590119
502	-204120336
651.7	-84657870.7
672.6	-73135455
672.9	-72978171.6
679.4	-69625502.9
698.6	-60324961.2
706	-56974297.5
706.85	-56597564.9
709.25	-55542821.7
710.5	-54998703.8
713.4	-53750061.1
714	-53494103.6
719.6	-51144240.2
726.15	-48484284.8
726.95	-48165870.9
733.1	-45764489.6
741.25	-42707000
750	-39579396
758.05	-36840361.3
759	-36525716.7
759	-36525716.7
763.5	-35059619.6
770	-33011984.9
772.4	-32276579.1
773.7667	-31862728.8
778	-30603280.9
778	-30603280.9
779	-30310701.3
780	-30019992.4
784	-28875744.5
790	-27214475.2
790	-27214475.2
790	-27214475.2
796.5	-25488044.4
797	-25358353.1
800	-24589433.4
800.15	-24551401

Normal	
standard deviation =	347.3354332
mean =	1090.792
count =	366
sum of (xi-avg)^3 =	13972781341
1/n =	0.00273224
standard deviation cubed =	41903207.7
((n-1)/n)^(3/2) =	0.99590444
coef. of skewness =	0.9
acceptable range -1 to 1	**Pass**

Table C-15. Near Upgradient Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
801	-24336624.4
801	-24336624.4
802.5	-23960669.1
804.1	-23563939.5
804.5	-23465446.1
807	-22856074
807.05	-22843995.4
807.5	-22735479.7
811	-21903175.5
814	-21206149.5
815.5	-20863251.7
816	-20749779.3
816	-20749779.3
818.1	-20277687.6
820.4	-19768911.7
820.5	-19746986.2
820.5	-19746986.2
821.5	-19528622.3
823	-19204104.2
826	-18565893.4
827	-18356341.9
828	-18148373.3
831	-17533903.7
833	-17132061.1
833.3	-17072319.5
835	-16736405.5
835	-16736405.5
835	-16736405.5
835	-16736405.5
835	-16736405.5
837	-16346889
838	-16154417.8
838	-16154417.8
843	-15214693.3
844	-15031232.7
845	-14849252.8
846	-14668747.7
846	-14668747.7
850	-13961354.7
850.75	-13831303.6
851	-13788133.4
851	-13788133.4
853	-13446000.9
853	-13446000.9
853	-13446000.9
855	-13109575.5
856	-12943487.9
857	-12778809
858	-12615532.9
860	-12293165
864	-11664998.3
864.5	-11588016.1
865	-11511373.5
865	-11511373.5

Table C-15. Near Upgradient Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
867	-11208182.1
867.5	-11133225.4
867.9	-11073501.2
868	-11058603.6
868	-11058603.6
872	-10473596.9
872	-10473596.9
873	-10330642.1
873.5	-10259655.1
879	-9500145.26
884	-8843065.26
885	-8715395.53
885	-8715395.53
885	-8715395.53
885.5	-8652024.06
889	-8217004.11
896	-7391202.14
897	-7277953.45
900.5	-6890700.32
902	-6729031.27
904	-6517433.68
904	-6517433.68
904.5	-6465236.63
908.5	-6057656.99
910	-5909346.98
910.5	-5860453.69
913	-5620028.81
913	-5620028.81
914	-5525730.92
917	-5249177.79
919	-5070032.8
920	-4982009.44
921	-4895010.83
927	-4394202.99
928	-4314209.65
929	-4235193.07
930	-4157147.25
931	-4080066.17
932	-4003943.85
933	-3928774.28
936	-3708922.1
937	-3637503.55
938	-3567007.75
940	-3428760.41
942	-3294132.08
944.5	-3130862.79
946	-3035540.48
946	-3035540.48
954	-2559673.44
955	-2503946.45
960	-2237412.8
961	-2186484.34
961	-2186484.34
967	-1897057.35

Table C-15. Near Upgradient Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
967	-1897057.35
968	-1851454.16
969	-1806587.72
974	-1593096.83
974	-1593096.83
975	-1552524.91
975	-1552524.91
980	-1359966.62
984	-1217921.55
984	-1217921.55
985	-1184027.17
986	-1150767.54
993	-935219.235
996	-851762.694
998	-798978.767
1001	-723963.529
1002	-700043.956
1004	-653797.072
1008	-567504.347
1012	-489159.678
1014	-452847.865
1015.5	-426826.108
1023	-311559.007
1030	-224669.872
1030.5	-219171.793
1045	-96023.2046
1050	-67878.6597
1051	-63008.0113
1053.5	-51862.8123
1055	-45852.9536
1058	-35262.5725
1069	-10349.1989
1070	-8988.86809
1072	-6636.46707
1078	-2093.34927
1082	-679.675112
1086	-110.057781
1090	-0.49727998
1090	-0.49727998
1091	0.00896538
1092.55	5.43081372
1093	10.7608004
1093	10.7608004
1096	141.236913
1097	239.221847
1098	374.453229
1100	780.655338
1100	780.655338
1100	780.655338
1100	780.655338
1101	1063.62606
1102	1407.84324
1102	1407.84324
1103	1819.30686

Table C-15. Near Upgradient Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
1103	1819.30686
1104	2304.01693
1104	2304.01693
1105	2867.97345
1105.5	3181.54413
1106	3517.17642
1106	3517.17642
1107	4257.62583
1108	5095.32169
1112	9538.56963
1114	12499.6723
1115	14186.0933
1119	22444.2418
1120	24916.895
1121.5	28956.3369
1122	30393.9408
1123	33410.3334
1124	36619.9724
1126	43642.9898
1128	51510.993
1130	60271.982
1130	60271.982
1134	80664.9174
1135	86396.2674
1135.5	89361.0348
1136	92392.8638
1140	119151.714
1140.5	122820.847
1141	126564.543
1142	134278.618
1146	168267.383
1147.5	182358.936
1148	187225.244
1148	187225.244
1149	197216.044
1150	207556.091
1150	207556.091
1152	229307.923
1152.5	234973.535
1153	240731.709
1160	331485.112
1160	331485.112
1160	331485.112
1161	346062.87
1162	361061.874
1163	376488.124
1163	376488.124
1163.5	384363.342
1165	408646.365
1165	408646.365
1166	425390.354
1166.5	433931.192
1167	442585.591
1170.65	509273.488

Table C-15. Near Upgradient Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
1171	515999
1173	555569.184
1177	640676.508
1180	709917.089
1180	709917.089
1184	809759.314
1184	809759.314
1185	836102.987
1187	890492.071
1188.5	932796.531
1191	1006245.2
1191	1006245.2
1192	1036671.59
1196	1164509.65
1196	1164509.65
1197	1198032.28
1198	1232192.15
1200	1302447.65
1200	1302447.65
1200	1302447.65
1202	1375324.12
1208	1610159.47
1208	1610159.47
1208	1610159.47
1214.3	1884007.12
1216	1962879.07
1219	2107379.48
1220.1	2162089.05
1224	2363678.44
1226	2471750.75
1226	2471750.75
1230	2697678.32
1234.5	2967840.05
1235.5	3030227.92
1238	3190009.29
1241	3389041.97
1243	3526226.66
1245	3667064.33
1246	3738868.03
1249.25	3978692.58
1250	4035455.32
1250	4035455.32
1261	4931033.19
1267	5471103.78
1270	5755330.91
1272.4	5989672.42
1276.5	6404570.7
1296	8641342.54
1300	9156579.12
1309	10389878.3
1317	11575037.1
1330	13687549.1
1366	20844041.9
1540	90644549.7

Table C-15. Near Upgradient Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
1575	113525961
1651	175811516
1672	196333392
1683	207693182
1683	207693182
1703	229454432
1710	237415534
1724	253885938
1726	256299257
1751	287767562
1770	313334259
1788	338911731
1789	340372120
1790	341836697
1797	352206545
1803	361260160
1804	362784017
1804	362784017
1808	368922298
1816	381405801
1816	381405801
1818	384570069
1831	405565373
1836	413839626
1843.5	426460830
1844	427311248
1845.5	429869284
1848	434155329
1850	437604605
1866.5	466760801
1867	467663967
1869	471288280
1871	474931271
1873	478592986
1873.5	479511346
1877	485972783
1884	499069273
1885	500959190
1899	527921097
1904	537779834
1911	551787162
1916	561939914
1938	608092639
1955	645437890
1958	652182946
1959	654441696
1964	665813707
1971	681954739
1975	691294241

Table C-15. Near Upgradient Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
5.780744	-1.57933199
5.793014	-1.52993496
5.814131	-1.44735324
5.828946	-1.39122588
5.877736	-1.21667067
5.891644	-1.16973413
5.894403	-1.16057051
5.996452	-0.85423961
6.045005	-0.72969841
6.104793	-0.59376176
6.2186	-0.38375324
6.479584	-0.10100478
6.511151	-0.08182668
6.511597	-0.08157479
6.52121	-0.07626957
6.549078	-0.06220001
6.559615	-0.05736838
6.560818	-0.05683311
6.564208	-0.05534317
6.565969	-0.05457954
6.570042	-0.05284007
6.570883	-0.05248572
6.578696	-0.04926826
6.587757	-0.04570455
6.588858	-0.04528358
6.597282	-0.04214801
6.608338	-0.03825732
6.620073	-0.0343977
6.630749	-0.03112012
6.632002	-0.03074986
6.632002	-0.03074986
6.637913	-0.02904188
6.646391	-0.02670466
6.649503	-0.0258792
6.65127	-0.02541796
6.656727	-0.02402902
6.656727	-0.02402902
6.658011	-0.02370955
6.659294	-0.02339334
6.664409	-0.02216048
6.672033	-0.02040454
6.672033	-0.02040454
6.672033	-0.02040454
6.680227	-0.01862343
6.680855	-0.01849147
6.684612	-0.01771445
6.684799	-0.01767626
6.685861	-0.017461
6.685861	-0.017461
6.687732	-0.01708595
6.689724	-0.01669262

Lognormal	
standard deviation =	0.319343633
mean =	6.945
count =	366
sum of (xi-avg)^3 =	-4.80627538
1/n =	0.00273224
standard deviation cubed =	0.032566777
((n-1)/n)^(3/2) =	0.99590444
coef. of skewness =	-0.4
acceptable range -1 to 1	Pass

Table C-15. Near Upgradient Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
6.690221	-0.01659536
6.693324	-0.0159971
6.693386	-0.0159853
6.693943	-0.01587941
6.698268	-0.01507372
6.70196	-0.01440785
6.703801	-0.01408329
6.704414	-0.01397632
6.704414	-0.01397632
6.706985	-0.01353369
6.709792	-0.01306099
6.709914	-0.01304072
6.709914	-0.01304072
6.711132	-0.01283932
6.712956	-0.01254157
6.716595	-0.01196152
6.717805	-0.01177267
6.719013	-0.01158605
6.72263	-0.01103934
6.725034	-0.01068565
6.725394	-0.01063333
6.727432	-0.01034041
6.727432	-0.01034041
6.727432	-0.01034041
6.727432	-0.01034041
6.727432	-0.01034041
6.729824	-0.01000349
6.731018	-0.00983811
6.731018	-0.00983811
6.736967	-0.00904125
6.738152	-0.00888777
6.739337	-0.00873622
6.740519	-0.00858657
6.740519	-0.00858657
6.745236	-0.00800676
6.746118	-0.00790133
6.746412	-0.00786641
6.746412	-0.00786641
6.74876	-0.00759114
6.74876	-0.00759114
6.74876	-0.00759114
6.751101	-0.00732299
6.75227	-0.00719154
6.753438	-0.00706183
6.754604	-0.00693384
6.756932	-0.00668294
6.761573	-0.00620109
6.762151	-0.0061427
6.76273	-0.0060847
6.76273	-0.0060847
6.765039	-0.00585669
6.765616	-0.00580067
6.766077	-0.00575614
6.766192	-0.00574505

Table C-15. Near Upgradient Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
6.766192	-0.00574505
6.770789	-0.00531386
6.770789	-0.00531386
6.771936	-0.00520984
6.772508	-0.00515839
6.778785	-0.0046164
6.784457	-0.00416051
6.785588	-0.00407338
6.785588	-0.00407338
6.785588	-0.00407338
6.786152	-0.00403032
6.790097	-0.00373798
6.79794	-0.00319941
6.799056	-0.0031273
6.80295	-0.00288405
6.804615	-0.00278407
6.806829	-0.00265463
6.806829	-0.00265463
6.807382	-0.00262295
6.811795	-0.00237915
6.813445	-0.00229203
6.813994	-0.00226351
6.816736	-0.00212464
6.816736	-0.00212464
6.817831	-0.00207082
6.821107	-0.00191518
6.823286	-0.00181614
6.824374	-0.001768
6.82546	-0.00172078
6.831954	-0.00145592
6.833032	-0.00141477
6.834109	-0.00137444
6.835185	-0.00133493
6.836259	-0.00129622
6.837333	-0.00125831
6.838405	-0.00122118
6.841615	-0.00111442
6.842683	-0.00108034
6.84375	-0.001047
6.84588	-0.00098249
6.848005	-0.00092081
6.850656	-0.00084758
6.852243	-0.00080566
6.852243	-0.00080566
6.860664	-0.00060612
6.861711	-0.00058388
6.866933	-0.00048114
6.867974	-0.00046222
6.867974	-0.00046222
6.874198	-0.00035934
6.874198	-0.00035934
6.875232	-0.00034389
6.876265	-0.00032891
6.881411	-0.00026069

Table C-15. Near Upgradient Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
6.881411	-0.00026069
6.882437	-0.00024833
6.882437	-0.00024833
6.887553	-0.0001925
6.891626	-0.00015457
6.891626	-0.00015457
6.892642	-0.00014596
6.893656	-0.00013768
6.900731	-8.849E-05
6.903747	-7.1708E-05
6.905753	-6.1814E-05
6.908755	-4.8779E-05
6.909753	-4.4888E-05
6.911747	-3.7748E-05
6.915723	-2.5853E-05
6.919684	-1.6794E-05
6.921658	-1.3202E-05
6.923136	-1.0876E-05
6.930495	-3.2404E-06
6.937314	-5.0789E-07
6.937799	-4.2073E-07
6.951772	2.7204E-07
6.956545	1.4249E-06
6.957497	1.818E-06
6.959873	3.0997E-06
6.961296	4.0986E-06
6.964136	6.6903E-06
6.974479	2.4862E-05
6.975414	2.7329E-05
6.977281	3.2733E-05
6.982863	5.3031E-05
6.986566	7.0311E-05
6.990257	9.0906E-05
6.993933	0.00011508
6.993933	0.00011508
6.99485	0.00012171
6.99627	0.00013247
6.996681	0.00013571
6.996681	0.00013571
6.999422	0.0001586
7.000334	0.00016675
7.001246	0.00017517
7.003065	0.00019283
7.003065	0.00019283
7.003065	0.00019283
7.003065	0.00019283
7.003974	0.00020207
7.004882	0.0002116
7.004882	0.0002116
7.005789	0.00022141
7.005789	0.00022141
7.006695	0.0002315
7.006695	0.0002315
7.007601	0.0002419

Table C-15. Near Upgradient Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
7.008053	0.0002472
7.008505	0.00025259
7.008505	0.00025259
7.009409	0.00026358
7.010312	0.00027487
7.013915	0.00032315
7.015712	0.00034921
7.01661	0.00036273
7.020191	0.00042016
7.021084	0.00043537
7.022422	0.00045884
7.022868	0.00046685
7.023759	0.00048311
7.024649	0.00049974
7.026427	0.00053409
7.028201	0.0005699
7.029973	0.00060722
7.029973	0.00060722
7.033506	0.00068645
7.034388	0.00070724
7.034828	0.00071778
7.035269	0.00072842
7.038784	0.00081716
7.039222	0.00082871
7.03966	0.00084037
7.040536	0.00086399
7.044033	0.00096268
7.045341	0.00100145
7.045777	0.00101459
7.045777	0.00101459
7.046647	0.00104119
7.047517	0.00106823
7.047517	0.00106823
7.049255	0.00112364
7.049689	0.00113777
7.050123	0.00115201
7.056175	0.0013633
7.056175	0.0013633
7.056175	0.0013633
7.057037	0.00139533
7.057898	0.00142783
7.058758	0.0014608
7.058758	0.0014608
7.059188	0.00147747
7.060476	0.00152818
7.060476	0.00152818
7.061334	0.00156258
7.061763	0.00157996
7.062192	0.00159747
7.065314	0.00172894
7.065613	0.00174189
7.06732	0.00181706
7.070724	0.00197342
7.07327	0.00209603

Table C-15. Near Upgradient Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
7.07327	0.00209603
7.076654	0.00226674
7.076654	0.00226674
7.077498	0.00231072
7.079184	0.00240028
7.080447	0.00246884
7.082549	0.00258579
7.082549	0.00258579
7.083388	0.00263352
7.086738	0.00282986
7.086738	0.00282986
7.087574	0.00288032
7.088409	0.00293134
7.090077	0.00303503
7.090077	0.00303503
7.090077	0.00303503
7.091742	0.00314097
7.096721	0.00347236
7.096721	0.00347236
7.096721	0.00347236
7.101923	0.00384263
7.103322	0.00394652
7.105786	0.00413402
7.106688	0.00420411
7.109879	0.00445846
7.111512	0.00459246
7.111512	0.00459246
7.114769	0.00486778
7.118421	0.00518928
7.119231	0.00526243
7.121252	0.00544804
7.123673	0.00567596
7.125283	0.00583107
7.126891	0.00598873
7.127694	0.00606851
7.130299	0.00633224
7.130899	0.00639407
7.130899	0.00639407
7.13966	0.00734298
7.144407	0.00789422
7.146772	0.00817886
7.14866	0.00841095
7.151877	0.00881645
7.167038	0.01090342
7.17012	0.01136436
7.177019	0.012443
7.183112	0.01345055
7.192934	0.01518696
7.219642	0.02064962
7.339538	0.06127718
7.362011	0.07236466
7.409136	0.0997965
7.421776	0.10817893
7.428333	0.11270698

Table C-15. Near Upgradient Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
7.428333	0.11270698
7.440147	0.12118012
7.444249	0.12421865
7.452402	0.13040855
7.453562	0.13130506
7.467942	0.14276841
7.478735	0.15179662
7.488853	0.16059915
7.489412	0.16109526
7.489971	0.1615921
7.493874	0.16509081
7.497207	0.16811855
7.497762	0.16862575
7.497762	0.16862575
7.499977	0.17066195
7.504392	0.17476963
7.504392	0.17476963
7.505492	0.17580389
7.512618	0.18259781
7.515345	0.18524363
7.519421	0.18924635
7.519692	0.18951464
7.520506	0.19032061
7.521859	0.1916675
7.522941	0.19274826
7.53182	0.20177414
7.532088	0.20205069
7.533159	0.20315869
7.534228	0.20426955
7.535297	0.20538325
7.535564	0.20566212
7.53743	0.20761919
7.541152	0.21155939
7.541683	0.21212511
7.549083	0.22011919
7.551712	0.22300759
7.555382	0.22708071
7.557995	0.23001099
7.569412	0.24310984
7.578145	0.25345928
7.579679	0.25530608
7.580189	0.25592304
7.582738	0.25901798
7.586296	0.26337925
7.588324	0.26588621

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
324	1	0.002725	-2.7792	-900.4599997	7.723939
328	2	0.00545	-2.54593	-835.0651478	6.481761
335	3	0.008174	-2.40103	-804.344927	5.764943
340	4	0.010899	-2.29385	-779.9106243	5.26177
357	5	0.013624	-2.20794	-788.2359751	4.875016
362	6	0.016349	-2.13578	-773.1507321	4.561537
363	7	0.019074	-2.07327	-752.5955334	4.298432
402	8	0.021798	-2.01795	-811.2160867	4.072124
422	9	0.024523	-1.96818	-830.5731899	3.873744
448	10	0.027248	-1.92287	-861.446606	3.697436
502	11	0.029973	-1.88119	-944.3572526	3.538875
651.7	12	0.032698	-1.84255	-1200.786783	3.394973
672.6	13	0.035422	-1.80647	-1215.034921	3.263351
672.9	14	0.038147	-1.77261	-1192.786021	3.142129
679.4	15	0.040872	-1.74065	-1182.600752	3.029879
698.6	16	0.043597	-1.71039	-1194.879284	2.925438
706	17	0.046322	-1.68162	-1187.223243	2.827844
706.85	18	0.049046	-1.65417	-1169.250611	2.736281
709.25	19	0.051771	-1.62792	-1154.60099	2.650118
710.5	20	0.054496	-1.60274	-1138.745952	2.568772
713.4	21	0.057221	-1.57854	-1126.131679	2.491794
714	22	0.059946	-1.55523	-1110.435214	2.418745
719.6	23	0.06267	-1.53274	-1102.956136	2.349277
726.15	24	0.065395	-1.51099	-1097.207981	2.283102
726.95	25	0.06812	-1.48994	-1083.114293	2.219931
733.1	26	0.070845	-1.46953	-1077.312228	2.159518
741.25	27	0.073569	-1.44971	-1074.598885	2.101664
750	28	0.076294	-1.43045	-1072.83654	2.046184
758.05	29	0.079019	-1.4117	-1070.138796	1.992895
759	30	0.081744	-1.39344	-1057.618556	1.941666
759	31	0.084469	-1.37563	-1044.100629	1.892349
763.5	32	0.087193	-1.35824	-1037.019244	1.844827
770	33	0.089918	-1.34126	-1032.769524	1.798976
772.4	34	0.092643	-1.32465	-1023.162767	1.754708
773.76667	35	0.095368	-1.30841	-1012.400871	1.711926
778	36	0.098093	-1.2925	-1005.562326	1.670547
778	37	0.100817	-1.27691	-993.434287	1.630494
779	38	0.103542	-1.26162	-982.8049133	1.591695
780	39	0.106267	-1.24663	-972.3702078	1.554083
784	40	0.108992	-1.23191	-965.8161071	1.517598
790	41	0.111717	-1.21745	-961.7851902	1.482184
790	42	0.114441	-1.20324	-950.5622074	1.447794
790	43	0.117166	-1.18927	-939.5260349	1.414371
796.5	44	0.119891	-1.17553	-936.3104391	1.381873
797	45	0.122616	-1.16201	-926.1212404	1.350265
800	46	0.125341	-1.1487	-918.9570847	1.319503
800.15	47	0.128065	-1.13558	-908.6373103	1.28955
801	48	0.13079	-1.12266	-899.2541393	1.260375
801	49	0.133515	-1.10993	-889.0532445	1.231943
802.5	50	0.13624	-1.09737	-880.6404651	1.204224
804.1	51	0.138965	-1.08498	-872.4356169	1.17719
804.5	52	0.141689	-1.07276	-863.0357172	1.150815
807	53	0.144414	-1.0607	-855.9816092	1.125076
807.05	54	0.147139	-1.04878	-846.4209782	1.099947
807.5	55	0.149864	-1.03702	-837.3914113	1.075405
811	56	0.152589	-1.02539	-831.594441	1.051433
814	57	0.155313	-1.01391	-825.3202714	1.028007
815.5	58	0.158038	-1.00255	-817.5829498	1.005115
816	59	0.160763	-0.99133	-808.9224139	0.982728

Sulfate - normal
14005936885 = (sum of Mi*Xi)^2
365 = count -1
120641.9032 = standard deviation ^2
355.904111 = sum of Mi^2

0.89 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table C-16. Sulfate Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
816	60	0.163488	-0.98022	-799.8626461	0.960839
818.1	61	0.166213	-0.96924	-792.9366204	0.939429
820.4	62	0.168937	-0.95837	-786.2493903	0.918479
820.5	63	0.171662	-0.94762	-777.5209349	0.897981
820.5	64	0.174387	-0.93697	-768.7843254	0.877914
821.5	65	0.177112	-0.92643	-761.0599607	0.858267
823	66	0.179837	-0.91599	-753.8585305	0.839035
826	67	0.182561	-0.90565	-748.0648674	0.820197
827	68	0.185286	-0.8954	-740.4975213	0.801745
828	69	0.188011	-0.88525	-732.9868731	0.783667
831	70	0.190736	-0.87519	-727.2816947	0.765955
833	71	0.19346	-0.86521	-720.7229942	0.748595
833.3	72	0.196185	-0.85533	-712.7424869	0.731581
835	73	0.19891	-0.84552	-706.0099051	0.714905
835	74	0.201635	-0.8358	-697.8897204	0.698555
835	75	0.20436	-0.82615	-689.8340871	0.682522
835	76	0.207084	-0.81658	-681.8430052	0.6668
835	77	0.209809	-0.80708	-673.9145761	0.651383
837	78	0.212534	-0.79766	-667.64032	0.636259
838	79	0.215259	-0.78831	-660.6011038	0.621428
838	80	0.217984	-0.77902	-652.8194854	0.606874
843	81	0.220708	-0.7698	-648.9440443	0.592597
844	82	0.223433	-0.76065	-641.9878173	0.578587
845	83	0.226158	-0.75156	-635.0670787	0.56484
846	84	0.228883	-0.74253	-628.1810579	0.551352
846	85	0.231608	-0.73356	-620.5934915	0.538113
850	86	0.234332	-0.72465	-615.9555141	0.525123
850.75	87	0.237057	-0.7158	-608.9665226	0.512369
851	88	0.239782	-0.707	-601.6601185	0.499854
851	89	0.242507	-0.69826	-594.2212033	0.48757
853	90	0.245232	-0.68957	-588.2049686	0.47551
853	91	0.247956	-0.68093	-580.8368178	0.463671
853	92	0.250681	-0.67235	-573.5123057	0.452051
855	93	0.253406	-0.66381	-567.5571117	0.440643
856	94	0.256131	-0.65532	-560.9543405	0.429445
857	95	0.258856	-0.64688	-554.3745374	0.418451
858	96	0.26158	-0.63848	-547.8168669	0.407658
860	97	0.264305	-0.63013	-541.9106174	0.397062
864	98	0.26703	-0.62182	-537.2528176	0.386661
864.5	99	0.269755	-0.61355	-530.4176238	0.376449
865	100	0.27248	-0.60533	-523.6105494	0.366425
865	101	0.275204	-0.59715	-516.5320999	0.356584
867	102	0.277929	-0.589	-510.6670619	0.346927
867.5	103	0.280654	-0.5809	-503.9307069	0.337445
867.9	104	0.283379	-0.57283	-497.1625151	0.328139
868	105	0.286104	-0.5648	-490.2490309	0.319002
868	106	0.288828	-0.55681	-483.3118146	0.310038
872	107	0.291553	-0.54885	-478.5996134	0.301239
872	108	0.294278	-0.54093	-471.6909007	0.292605
873	109	0.297003	-0.53304	-465.3449696	0.284133
873.5	110	0.299728	-0.52518	-458.7484904	0.275819
879	111	0.302452	-0.51736	-454.7597712	0.267662
884	112	0.305177	-0.50957	-450.4573553	0.259659
885	113	0.307902	-0.50181	-444.0990892	0.25181
885	114	0.310627	-0.49407	-437.2554031	0.244109
885	115	0.313351	-0.48637	-430.4398885	0.236558
885.5	116	0.316076	-0.4787	-423.8878705	0.229153
889	117	0.318801	-0.47105	-418.7675313	0.221892
896	118	0.321526	-0.46344	-415.2390466	0.214773
897	119	0.324251	-0.45585	-408.8934725	0.207795
900.5	120	0.326975	-0.44828	-403.6768996	0.200956
902	121	0.3297	-0.44074	-397.5485015	0.194253
904	122	0.332425	-0.43323	-391.636695	0.187685
904	123	0.33515	-0.42574	-384.8660162	0.181252

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
904.5	124	0.337875	-0.41827	-378.3260553	0.174951
908.5	125	0.340599	-0.41083	-373.2371033	0.16878
910	126	0.343324	-0.40341	-367.1008358	0.162738
910.5	127	0.346049	-0.39601	-360.5670224	0.156824
913	128	0.348774	-0.38863	-354.8217194	0.151035
913	129	0.351499	-0.38128	-348.1071508	0.145373
914	130	0.354223	-0.37394	-341.7841708	0.139834
917	131	0.356948	-0.36663	-336.1985023	0.134417
919	132	0.359673	-0.35933	-330.2273933	0.12912
920	133	0.362398	-0.35206	-323.8917998	0.123944
921	134	0.365123	-0.3448	-317.5604991	0.118887
927	135	0.367847	-0.33756	-312.9182085	0.113947
928	136	0.370572	-0.33034	-306.5543206	0.109124
929	137	0.373297	-0.32313	-300.1918321	0.104416
930	138	0.376022	-0.31595	-293.8297371	0.099822
931	139	0.378747	-0.30877	-287.4691415	0.095342
932	140	0.381471	-0.30162	-281.1090371	0.090974
933	141	0.384196	-0.29448	-274.7484109	0.086718
936	142	0.386921	-0.28735	-268.9620123	0.082572
937	143	0.389646	-0.28024	-262.5873185	0.078536
938	144	0.392371	-0.27315	-256.2112013	0.074609
940	145	0.395095	-0.26606	-250.0997653	0.07079
942	146	0.39782	-0.25899	-243.9717787	0.067078
944.5	147	0.400545	-0.25194	-237.9543582	0.063472
946	148	0.40327	-0.24489	-231.668605	0.059972
946	149	0.405995	-0.23786	-225.0157013	0.056577
954	150	0.408719	-0.23084	-220.2224323	0.053288
955	151	0.411444	-0.22383	-213.7587899	0.0501
960	152	0.414169	-0.21683	-208.160418	0.047017
961	153	0.416894	-0.20985	-201.6625592	0.044036
961	154	0.419619	-0.20287	-194.9576995	0.041156
967	155	0.422343	-0.1959	-189.4380898	0.038378
967	156	0.425068	-0.18895	-182.7100573	0.0357
968	157	0.427793	-0.182	-176.1728163	0.033123
969	158	0.430518	-0.17506	-169.6293896	0.030645
974	159	0.433243	-0.16812	-163.7534024	0.028266
974	160	0.435967	-0.1612	-157.0098857	0.025986
975	161	0.438692	-0.15429	-150.4295142	0.023804
975	162	0.441417	-0.14738	-143.6934838	0.02172
980	163	0.444142	-0.14048	-137.6664841	0.019734
984	164	0.446866	-0.13358	-131.4447218	0.017844
984	165	0.449591	-0.12669	-124.6666488	0.016051
985	166	0.452316	-0.11981	-118.0151003	0.014355
986	167	0.455041	-0.11294	-111.3542726	0.012754
993	168	0.457766	-0.10606	-105.3216863	0.01125
996	169	0.46049	-0.0992	-98.80179277	0.00984
998	170	0.463215	-0.09234	-92.1517767	0.008526
1001	171	0.46594	-0.08548	-85.56433841	0.007307
1002	172	0.468665	-0.07863	-78.7830686	0.006182
1004	173	0.47139	-0.07178	-72.06443115	0.005152
1008	174	0.474114	-0.06493	-65.4505493	0.004216
1012	175	0.476839	-0.05809	-58.7841987	0.003374
1014	176	0.479564	-0.05125	-51.96522125	0.002626
1015.5	177	0.482289	-0.04441	-45.09783651	0.001972
1023	178	0.485014	-0.03757	-38.43769036	0.001412
1030	179	0.487738	-0.03074	-31.66197757	0.000945
1030.5	180	0.490463	-0.02391	-24.63637486	0.000572
1045	181	0.493188	-0.01708	-17.84417236	0.000292
1050	182	0.495913	-0.01025	-10.75773071	0.000105
1051	183	0.498638	-0.00342	-3.589325388	1.17E-05
1053.5	184	0.501362	0.003415	3.59786327	1.17E-05
1055	185	0.504087	0.010245	10.808958	0.000105
1058	186	0.506812	0.017076	18.06615728	0.000292
1069	187	0.509537	0.023907	25.55680226	0.000572

Table C-16. Sulfate Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1070	188	0.512262	0.03074	32.89156894	0.000945
1072	189	0.514986	0.037573	40.27879186	0.001412
1078	190	0.517711	0.044409	47.87342959	0.001972
1082	191	0.520436	0.051248	55.45006843	0.002626
1086	192	0.523161	0.058087	63.08264801	0.003374
1090	193	0.525886	0.064931	70.77489954	0.004216
1090	194	0.52861	0.071777	78.23728083	0.005152
1091	195	0.531335	0.078626	85.78076631	0.006182
1092.55	196	0.53406	0.085479	93.389928	0.007307
1093	197	0.536785	0.092336	100.9237394	0.008526
1093	198	0.53951	0.099199	108.4240557	0.00984
1096	199	0.542234	0.106064	116.2462922	0.01125
1097	200	0.544959	0.112935	123.8900984	0.012754
1098	201	0.547684	0.119812	131.5538884	0.014355
1100	202	0.550409	0.126694	139.3631237	0.016051
1100	203	0.553134	0.133582	146.9402378	0.017844
1100	204	0.555858	0.140476	154.5236046	0.019734
1100	205	0.558583	0.147378	162.1157253	0.02172
1101	206	0.561308	0.154287	169.869636	0.023804
1102	207	0.564033	0.161201	177.6436284	0.025986
1102	208	0.566757	0.168125	185.2733567	0.028266
1103	209	0.569482	0.175056	193.0869109	0.030645
1103	210	0.572207	0.181997	200.7423723	0.033123
1104	211	0.574932	0.188945	208.5955566	0.0357
1104	212	0.577657	0.195903	216.2767851	0.038378
1105	213	0.580381	0.20287	224.170924	0.041156
1105.5	214	0.583106	0.209847	231.9853894	0.044036
1106	215	0.585831	0.216834	239.8181482	0.047017
1106	216	0.588556	0.223831	247.5573001	0.0501
1107	217	0.591281	0.230841	255.5411243	0.053288
1108	218	0.594005	0.23786	263.5490455	0.056577
1112	219	0.59673	0.244893	272.3208127	0.059972
1114	220	0.599455	0.251937	280.6576549	0.063472
1115	221	0.60218	0.258993	288.7776361	0.067078
1119	222	0.604905	0.266064	297.7251461	0.07079
1120	223	0.607629	0.273146	305.9238225	0.074609
1121.5	224	0.610354	0.280243	314.2920787	0.078536
1122	225	0.613079	0.287353	322.4095917	0.082572
1123	226	0.615804	0.294478	330.6993199	0.086718
1124	227	0.618529	0.301619	339.0199117	0.090974
1126	228	0.621253	0.308775	347.6801862	0.095342
1128	229	0.623978	0.315946	356.3870359	0.099822
1130	230	0.626703	0.323134	365.141841	0.104416
1130	231	0.629428	0.330339	373.2827395	0.109124
1134	232	0.632153	0.33756	382.7931482	0.113947
1135	233	0.634877	0.3448	391.3476291	0.118887
1135.5	234	0.637602	0.352056	399.7599333	0.123944
1136	235	0.640327	0.359333	408.2027408	0.12912
1140	236	0.643052	0.366629	417.9566986	0.134417
1140.5	237	0.645777	0.373943	426.4823269	0.139834
1141	238	0.648501	0.381278	435.0386189	0.145373
1142	239	0.651226	0.388633	443.8186238	0.151035
1146	240	0.653951	0.39601	453.8273561	0.156824
1147.5	241	0.656676	0.403408	462.9101198	0.162738
1148	242	0.659401	0.410828	471.6303738	0.16878
1148	243	0.662125	0.418271	480.1750265	0.174951
1149	244	0.66485	0.425737	489.1715184	0.181252
1150	245	0.667575	0.433226	498.2103974	0.187685
1150	246	0.6703	0.440741	506.8523024	0.194253
1152	247	0.673025	0.448281	516.4195318	0.200956
1152.5	248	0.675749	0.455846	525.3620145	0.207795
1153	249	0.678474	0.463436	534.3422106	0.214773
1160	250	0.681199	0.471055	546.4233254	0.221892
1160	251	0.683924	0.478699	555.2907169	0.229153

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1160	252	0.686649	0.486373	564.1923963	0.236558
1161	253	0.689373	0.494074	573.6198	0.244109
1162	254	0.692098	0.501807	583.0995951	0.25181
1163	255	0.694823	0.509567	592.6265885	0.259659
1163	256	0.697548	0.51736	601.6901182	0.267662
1163.5	257	0.700272	0.525184	611.0519388	0.275819
1165	258	0.702997	0.533041	620.9930007	0.284133
1165	259	0.705722	0.54093	630.1833707	0.292605
1166	260	0.708447	0.548853	639.9623271	0.301239
1166.5	261	0.711172	0.556811	649.5198522	0.310038
1167	262	0.713896	0.564803	659.1251372	0.319002
1170.65	263	0.716621	0.572834	670.587969	0.328139
1171	264	0.719346	0.5809	680.2338419	0.337445
1173	265	0.722071	0.589005	690.9024955	0.346927
1177	266	0.724796	0.597147	702.8419441	0.356584
1180	267	0.72752	0.60533	714.2895356	0.366425
1180	268	0.730245	0.613554	723.9939805	0.376449
1184	269	0.73297	0.62182	736.2353426	0.386661
1184	270	0.735695	0.630129	746.0722918	0.397062
1185	271	0.73842	0.638481	756.6002182	0.407658
1187	272	0.741144	0.646878	767.8443126	0.418451
1188.5	273	0.743869	0.65532	778.8484038	0.429445
1191	274	0.746594	0.663809	790.5970995	0.440643
1191	275	0.749319	0.672347	800.7657163	0.452051
1192	276	0.752044	0.680934	811.6734898	0.463671
1196	277	0.754768	0.689572	824.7281858	0.47551
1196	278	0.757493	0.698262	835.1216911	0.48757
1197	279	0.760218	0.707004	846.2833864	0.499854
1198	280	0.762943	0.7158	857.5279389	0.512369
1200	281	0.765668	0.724654	869.5842553	0.525123
1200	282	0.768392	0.733562	880.274456	0.538113
1200	283	0.771117	0.742531	891.0369615	0.551352
1202	284	0.773842	0.751559	903.373525	0.56484
1208	285	0.776567	0.760649	918.8640797	0.578587
1208	286	0.779292	0.769803	929.9221892	0.592597
1208	287	0.782016	0.779021	941.0572056	0.606874
1214.3	288	0.784741	0.788307	957.2409551	0.621428
1216	289	0.787466	0.797659	969.9529619	0.636259
1219	290	0.790191	0.807083	983.8345727	0.651383
1220.1	291	0.792916	0.816578	996.307366	0.6668
1224	292	0.79564	0.826149	1011.205895	0.682522
1226	293	0.798365	0.835796	1024.685985	0.698555
1226	294	0.80109	0.845521	1036.608555	0.714905
1230	295	0.803815	0.855325	1052.049993	0.731581
1234.5	296	0.80654	0.865214	1068.106286	0.748595
1235.5	297	0.809264	0.875189	1081.295468	0.765955
1238	298	0.811989	0.88525	1095.93931	0.783667
1241	299	0.814714	0.895402	1111.193983	0.801745
1243	300	0.817439	0.905648	1125.719891	0.820197
1245	301	0.820163	0.915988	1140.405675	0.839035
1246	302	0.822888	0.926427	1154.328315	0.858267
1249.25	303	0.825613	0.936971	1170.510443	0.877914
1250	304	0.828338	0.947618	1184.523057	0.897981
1250	305	0.831063	0.958373	1197.966526	0.918479
1261	306	0.833787	0.969242	1222.213762	0.939429
1267	307	0.836512	0.980224	1241.943594	0.960839
1270	308	0.839237	0.991326	1258.984639	0.982728
1272.4	309	0.841962	1.002554	1275.649964	1.005115
1276.5	310	0.844687	1.013907	1294.252244	1.028007
1296	311	0.847411	1.025394	1328.910475	1.051433
1300	312	0.850136	1.037017	1348.122396	1.075405
1309	313	0.852861	1.048784	1372.858014	1.099947
1317	314	0.855586	1.060696	1396.93653	1.125076
1330	315	0.858311	1.07276	1426.771291	1.150815

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1366	316	0.861035	1.084984	1482.088114	1.17719
1540	317	0.86376	1.097371	1689.951796	1.204224
1575	318	0.866485	1.109929	1748.138402	1.231943
1651	319	0.86921	1.122664	1853.518831	1.260375
1672	320	0.871935	1.135584	1898.695973	1.28955
1683	321	0.874659	1.148696	1933.255967	1.319503
1683	322	0.877384	1.162009	1955.661289	1.350265
1703	323	0.880109	1.175531	2001.929288	1.381873
1710	324	0.882834	1.189273	2033.65762	1.414371
1724	325	0.885559	1.203243	2074.39145	1.447794
1726	326	0.888283	1.21745	2101.318023	1.482184
1751	327	0.891008	1.231908	2157.071433	1.517598
1770	328	0.893733	1.246628	2206.532395	1.554083
1788	329	0.896458	1.261624	2255.783293	1.591695
1789	330	0.899183	1.276908	2284.388097	1.630494
1790	331	0.901907	1.292497	2313.568848	1.670547
1797	332	0.904632	1.308406	2351.205401	1.711926
1803	333	0.907357	1.324654	2388.351202	1.754708
1804	334	0.910082	1.341259	2419.631455	1.798976
1804	335	0.912807	1.358244	2450.272059	1.844827
1808	336	0.915531	1.375627	2487.132988	1.892349
1816	337	0.918256	1.393437	2530.481288	1.941666
1816	338	0.920981	1.411699	2563.646267	1.992895
1818	339	0.923706	1.430449	2600.555772	2.046184
1831	340	0.926431	1.449712	2654.422337	2.101664
1836	341	0.929155	1.46953	2698.056542	2.159518
1843.5	342	0.93188	1.489943	2746.710502	2.219931
1844	343	0.934605	1.510994	2786.272144	2.283102
1845.5	344	0.93733	1.532735	2828.662518	2.349277
1848	345	0.940054	1.555231	2874.067613	2.418745
1850	346	0.942779	1.578542	2920.302222	2.491794
1866.5	347	0.945504	1.602739	2991.51206	2.568772
1867	348	0.948229	1.627918	3039.323296	2.650118
1869	349	0.950954	1.654171	3091.645176	2.736281
1871	350	0.953678	1.681619	3146.309755	2.827844
1873	351	0.956403	1.710391	3203.562696	2.925438
1873.5	352	0.959128	1.740655	3261.11644	3.029879
1877	353	0.961853	1.772605	3327.179911	3.142129
1884	354	0.964578	1.806475	3403.398441	3.263351
1885	355	0.967302	1.842545	3473.197921	3.394973
1899	356	0.970027	1.88119	3572.379328	3.538875
1904	357	0.972752	1.922872	3661.148075	3.697436
1911	358	0.975477	1.968183	3761.197549	3.873744
1916	359	0.978202	2.01795	3866.39309	4.072124
1938	360	0.980926	2.073266	4017.989377	4.298432
1955	361	0.983651	2.135776	4175.441109	4.561537
1958	362	0.986376	2.207944	4323.154171	4.875016
1959	363	0.989101	2.293855	4493.661509	5.26177
1964	364	0.991826	2.40103	4715.622199	5.764943
1971	365	0.99455	2.54593	5018.028678	6.481761
1975	366	0.997275	2.779198	5488.915122	7.723939

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
5.7807435	1	0.002725	-2.7792	-16.0658281	7.723939
5.7930136	2	0.00545	-2.54593	-14.74860904	6.481761
5.8141305	3	0.008174	-2.40103	-13.9598997	5.764943
5.8289456	4	0.010899	-2.29385	-13.37075475	5.26177
5.8777358	5	0.013624	-2.20794	-12.97771091	4.875016
5.8916442	6	0.016349	-2.13578	-12.58322938	4.561537
5.8944028	7	0.019074	-2.07327	-12.22066459	4.298432
5.9964521	8	0.021798	-2.01795	-12.10054328	4.072124
6.0450053	9	0.024523	-1.96818	-11.89767618	3.873744
6.1047932	10	0.027248	-1.92287	-11.73873529	3.697436
6.2186001	11	0.029973	-1.88119	-11.69836678	3.538875
6.4795843	12	0.032698	-1.84255	-11.93892777	3.394973
6.5111508	13	0.035422	-1.80647	-11.76222955	3.263351
6.5115967	14	0.038147	-1.77261	-11.54249005	3.142129
6.5212101	15	0.040872	-1.74065	-11.35117444	3.029879
6.5490783	16	0.043597	-1.71039	-11.20148587	2.925438
6.5596152	17	0.046322	-1.68162	-11.03077574	2.827844
6.5608185	18	0.049046	-1.65417	-10.85271418	2.736281
6.5642081	19	0.051771	-1.62792	-10.68599385	2.650118
6.5659689	20	0.054496	-1.60274	-10.52353351	2.568772
6.5700423	21	0.057221	-1.57854	-10.37108597	2.491794
6.570883	22	0.059946	-1.55523	-10.21924346	2.418745
6.5786955	23	0.06267	-1.53274	-10.08339712	2.349277
6.5877566	24	0.065395	-1.51099	-9.954057873	2.283102
6.5888577	25	0.06812	-1.48994	-9.817024485	2.219931
6.5972821	26	0.070845	-1.46953	-9.694902057	2.159518
6.608338	27	0.073569	-1.44971	-9.580185619	2.101664
6.6200732	28	0.076294	-1.43045	-9.469675241	2.046184
6.6307493	29	0.079019	-1.4117	-9.360625446	1.992895
6.6320018	30	0.081744	-1.39344	-9.24127555	1.941666
6.6320018	31	0.084469	-1.37563	-9.123158405	1.892349
6.6379131	32	0.087193	-1.35824	-9.015905243	1.844827
6.6463905	33	0.089918	-1.34126	-8.914531903	1.798976
6.6495026	34	0.092643	-1.32465	-8.808290298	1.754708
6.6512704	35	0.095368	-1.30841	-8.702561381	1.711926
6.6567265	36	0.098093	-1.2925	-8.603796154	1.670547
6.6567265	37	0.100817	-1.27691	-8.50002618	1.630494
6.658011	38	0.103542	-1.26162	-8.399904966	1.591695
6.6592939	39	0.106267	-1.24663	-8.301665401	1.554083
6.664409	40	0.108992	-1.23191	-8.209940786	1.517598
6.6720329	41	0.111717	-1.21745	-8.122863893	1.482184
6.6720329	42	0.114441	-1.20324	-8.028078943	1.447794
6.6720329	43	0.117166	-1.18927	-7.934871719	1.414371
6.6802271	44	0.119891	-1.17553	-7.852814057	1.381873
6.6808547	45	0.122616	-1.16201	-7.763213829	1.350265
6.6846117	46	0.125341	-1.1487	-7.678589132	1.319503
6.6847992	47	0.128065	-1.13558	-7.591149127	1.28955
6.6858609	48	0.13079	-1.12266	-7.505977692	1.260375
6.6858609	49	0.133515	-1.10993	-7.420831919	1.231943
6.6877319	50	0.13624	-1.09737	-7.338924973	1.204224
6.6897236	51	0.138965	-1.08498	-7.258242968	1.17719
6.690221	52	0.141689	-1.07276	-7.177003915	1.150815
6.6933237	53	0.144414	-1.0607	-7.099581121	1.125076
6.6933856	54	0.147139	-1.04878	-7.019914513	1.099947
6.6939431	55	0.149864	-1.03702	-6.941734269	1.075405
6.6982681	56	0.152589	-1.02539	-6.868363105	1.051433
6.7019604	57	0.155313	-1.01391	-6.795164309	1.028007
6.7038014	58	0.158038	-1.00255	-6.720924269	1.005115

Sulfate - lognormal
12213.82308 = (sum of Mi*Xi)^2
365 = count -1
0.101980356 = standard deviation ^2
355.904111 = sum of Mi^2

0.92 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
6.7044144	59	0.160763	-0.99133	-6.646263534	0.982728
6.7044144	60	0.163488	-0.98022	-6.571826724	0.960839
6.7069846	61	0.166213	-0.96924	-6.500689017	0.939429
6.709792	62	0.168937	-0.95837	-6.430484995	0.918479
6.7099139	63	0.171662	-0.94762	-6.358438192	0.897981
6.7099139	64	0.174387	-0.93697	-6.286991638	0.877914
6.7111319	65	0.177112	-0.92643	-6.2173753	0.858267
6.7129562	66	0.179837	-0.91599	-6.14899064	0.839035
6.7165948	67	0.182561	-0.90565	-6.082867528	0.820197
6.7178047	68	0.185286	-0.8954	-6.015136306	0.801745
6.7190132	69	0.188011	-0.88525	-5.948005365	0.783667
6.7226298	70	0.190736	-0.87519	-5.8835687	0.765955
6.7250336	71	0.19346	-0.86521	-5.818591095	0.748595
6.7253937	72	0.196185	-0.85533	-5.752398712	0.731581
6.7274317	73	0.19891	-0.84552	-5.688183753	0.714905
6.7274317	74	0.201635	-0.8358	-5.622761013	0.698555
6.7274317	75	0.20436	-0.82615	-5.55785835	0.682522
6.7274317	76	0.207084	-0.81658	-5.493475766	0.6668
6.7274317	77	0.209809	-0.80708	-5.429597963	0.651383
6.7298241	78	0.212534	-0.79766	-5.368102624	0.636259
6.7310181	79	0.215259	-0.78831	-5.306107383	0.621428
6.7310181	80	0.217984	-0.77902	-5.243603547	0.606874
6.736967	81	0.220708	-0.7698	-5.186138297	0.592597
6.7381525	82	0.223433	-0.76065	-5.125369446	0.578587
6.7393366	83	0.226158	-0.75156	-5.065006893	0.56484
6.7405194	84	0.228883	-0.74253	-5.005043241	0.551352
6.7405194	85	0.231608	-0.73356	-4.944589177	0.538113
6.7452363	86	0.234332	-0.72465	-4.88795944	0.525123
6.7461183	87	0.237057	-0.7158	-4.828868892	0.512369
6.7464121	88	0.239782	-0.707	-4.769738097	0.499854
6.7464121	89	0.242507	-0.69826	-4.710765139	0.48757
6.7487595	90	0.245232	-0.68957	-4.653756035	0.47551
6.7487595	91	0.247956	-0.68093	-4.59546075	0.463671
6.7487595	92	0.250681	-0.67235	-4.537510725	0.452051
6.7511015	93	0.253406	-0.66381	-4.481445205	0.440643
6.7522704	94	0.256131	-0.65532	-4.42490114	0.429445
6.7534379	95	0.258856	-0.64688	-4.368651134	0.418451
6.7546041	96	0.26158	-0.63848	-4.312687709	0.407658
6.7569324	97	0.264305	-0.63013	-4.257736515	0.397062
6.7615728	98	0.26703	-0.62182	-4.204483821	0.386661
6.7621513	99	0.269755	-0.61355	-4.148946475	0.376449
6.7627295	100	0.27248	-0.60533	-4.09368383	0.366425
6.7627295	101	0.275204	-0.59715	-4.038343206	0.356584
6.765039	102	0.277929	-0.589	-3.984639652	0.346927
6.7656155	103	0.280654	-0.5809	-3.930145715	0.337445
6.7660765	104	0.283379	-0.57283	-3.875837781	0.328139
6.7661917	105	0.286104	-0.5648	-3.821565589	0.319002
6.7661917	106	0.288828	-0.55681	-3.767488935	0.310038
6.7707894	107	0.291553	-0.54885	-3.716166515	0.301239
6.7707894	108	0.294278	-0.54093	-3.662522662	0.292605
6.7719356	109	0.297003	-0.53304	-3.609720671	0.284133
6.7725081	110	0.299728	-0.52518	-3.556814975	0.275819
6.7787849	111	0.302452	-0.51736	-3.507074709	0.267662
6.7844571	112	0.305177	-0.50957	-3.457136409	0.259659
6.7855876	113	0.307902	-0.50181	-3.405054568	0.25181
6.7855876	114	0.310627	-0.49407	-3.352581764	0.244109
6.7855876	115	0.313351	-0.48637	-3.30032496	0.236558
6.7861525	116	0.316076	-0.4787	-3.248523675	0.229153
6.7900972	117	0.318801	-0.47105	-3.198506475	0.221892
6.7979404	118	0.321526	-0.46344	-3.150413276	0.214773
6.7990559	119	0.324251	-0.45585	-3.099319466	0.207795
6.8029502	120	0.326975	-0.44828	-3.049632238	0.200956
6.8046145	121	0.3297	-0.44074	-2.99907351	0.194253

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
6.8068294	122	0.332425	-0.43323	-2.9488984	0.187685
6.8068294	123	0.33515	-0.42574	-2.897917366	0.181252
6.8073823	124	0.337875	-0.41827	-2.847330121	0.174951
6.8117949	125	0.340599	-0.41083	-2.79847506	0.16878
6.8134446	126	0.343324	-0.40341	-2.748594733	0.162738
6.8139939	127	0.346049	-0.39601	-2.698409106	0.156824
6.8167359	128	0.348774	-0.38863	-2.64920695	0.151035
6.8167359	129	0.351499	-0.38128	-2.599073938	0.145373
6.8178306	130	0.354223	-0.37394	-2.549482023	0.139834
6.8211075	131	0.356948	-0.36663	-2.500813649	0.134417
6.8232861	132	0.359673	-0.35933	-2.451834592	0.12912
6.8243737	133	0.362398	-0.35206	-2.402563772	0.123944
6.82546	134	0.365123	-0.3448	-2.35341639	0.118887
6.8319536	135	0.367847	-0.33756	-2.306194898	0.113947
6.8330317	136	0.370572	-0.33034	-2.257214871	0.109124
6.8341087	137	0.373297	-0.32313	-2.20833544	0.104416
6.8351846	138	0.376022	-0.31595	-2.159548914	0.099822
6.8362593	139	0.378747	-0.30877	-2.110863143	0.095342
6.8373328	140	0.381471	-0.30162	-2.062270434	0.090974
6.8384052	141	0.384196	-0.29448	-2.013763089	0.086718
6.8416155	142	0.386921	-0.28735	-1.96595584	0.082572
6.8426833	143	0.389646	-0.28024	-1.917611371	0.078536
6.8437499	144	0.392371	-0.27315	-1.869344772	0.074609
6.8458799	145	0.395095	-0.26606	-1.821439308	0.07079
6.8480053	146	0.39782	-0.25899	-1.773588139	0.067078
6.8506557	147	0.400545	-0.25194	-1.725932639	0.063472
6.8522426	148	0.40327	-0.24489	-1.678064986	0.059972
6.8522426	149	0.405995	-0.23786	-1.629875441	0.056577
6.8606637	150	0.408719	-0.23084	-1.583723313	0.053288
6.8617113	151	0.411444	-0.22383	-1.535865039	0.0501
6.8669333	152	0.414169	-0.21683	-1.488983024	0.047017
6.8679744	153	0.416894	-0.20985	-1.441220912	0.044036
6.8679744	154	0.419619	-0.20287	-1.39330332	0.041156
6.8741985	155	0.422343	-0.1959	-1.346675317	0.038378
6.8741985	156	0.425068	-0.18895	-1.298847157	0.0357
6.8752321	157	0.427793	-0.182	-1.251269627	0.033123
6.8762646	158	0.430518	-0.17506	-1.203732269	0.030645
6.8814113	159	0.433243	-0.16812	-1.156934819	0.028266
6.8814113	160	0.435967	-0.1612	-1.109291173	0.025986
6.8824375	161	0.438692	-0.15429	-1.061868436	0.023804
6.8824375	162	0.441417	-0.14738	-1.014319402	0.02172
6.8875526	163	0.444142	-0.14048	-0.967535864	0.019734
6.8916259	164	0.446866	-0.13358	-0.920597407	0.017844
6.8916259	165	0.449591	-0.12669	-0.87312592	0.016051
6.8926416	166	0.452316	-0.11981	-0.825823142	0.014355
6.8936564	167	0.455041	-0.11294	-0.778537615	0.012754
6.9007307	168	0.457766	-0.10606	-0.73192003	0.01125
6.9037473	169	0.46049	-0.0992	-0.684841974	0.00984
6.9057533	170	0.463215	-0.09234	-0.637652739	0.008526
6.9087548	171	0.46594	-0.08548	-0.590552479	0.007307
6.9097533	172	0.468665	-0.07863	-0.543284997	0.006182
6.9117473	173	0.47139	-0.07178	-0.496106711	0.005152
6.9157234	174	0.474114	-0.06493	-0.449045534	0.004216
6.9196838	175	0.476839	-0.05809	-0.401944734	0.003374
6.9216582	176	0.479564	-0.05125	-0.354719427	0.002626
6.9231364	177	0.482289	-0.04441	-0.307452952	0.001972
6.9304948	178	0.485014	-0.03757	-0.260402944	0.001412
6.9373141	179	0.487738	-0.03074	-0.213251537	0.000945
6.9377994	180	0.490463	-0.02391	-0.165863393	0.000572
6.9517722	181	0.493188	-0.01708	-0.118706814	0.000292
6.9565454	182	0.495913	-0.01025	-0.071272993	0.000105
6.9574974	183	0.498638	-0.00342	-0.023760915	1.17E-05
6.9598732	184	0.501362	0.003415	0.023769029	1.17E-05

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
6.961296	185	0.504087	0.010245	0.071321665	0.000105
6.9641356	186	0.506812	0.017076	0.118917929	0.000292
6.9744789	187	0.509537	0.023907	0.166740298	0.000572
6.9754139	188	0.512262	0.03074	0.214422718	0.000945
6.9772813	189	0.514986	0.037573	0.26216088	0.001412
6.9828628	190	0.517711	0.044409	0.310105369	0.001972
6.9865665	191	0.520436	0.051248	0.35804583	0.002626
6.9902565	192	0.523161	0.058087	0.406044098	0.003374
6.993933	193	0.525886	0.064931	0.454123765	0.004216
6.993933	194	0.52861	0.071777	0.502005778	0.005152
6.99485	195	0.531335	0.078626	0.549975795	0.006182
6.9962697	196	0.53406	0.085479	0.598033154	0.007307
6.9966815	197	0.536785	0.092336	0.646048728	0.008526
6.9966815	198	0.53951	0.099199	0.694060918	0.00984
6.9994225	199	0.542234	0.106064	0.742387691	0.01125
7.0003345	200	0.544959	0.112935	0.790585346	0.012754
7.0012456	201	0.547684	0.119812	0.838835233	0.014355
7.0030655	202	0.550409	0.126694	0.887244616	0.016051
7.0030655	203	0.553134	0.133582	0.93548373	0.017844
7.0030655	204	0.555858	0.140476	0.983762653	0.019734
7.0030655	205	0.558583	0.147378	1.032097306	0.02172
7.0039741	206	0.561308	0.154287	1.080619925	0.023804
7.004882	207	0.564033	0.161201	1.129194785	0.025986
7.004882	208	0.566757	0.168125	1.177693284	0.028266
7.005789	209	0.569482	0.175056	1.22640631	0.030645
7.005789	210	0.572207	0.181997	1.27503056	0.033123
7.0066952	211	0.574932	0.188945	1.323881785	0.0357
7.0066952	212	0.577657	0.195903	1.372631809	0.038378
7.0076006	213	0.580381	0.20287	1.421629235	0.041156
7.008053	214	0.583106	0.209847	1.470615924	0.044036
7.0085052	215	0.585831	0.216834	1.519680592	0.047017
7.0085052	216	0.588556	0.223831	1.56872208	0.0501
7.0094089	217	0.591281	0.230841	1.618059837	0.053288
7.0103119	218	0.594005	0.23786	1.667473828	0.056577
7.0139155	219	0.59673	0.244893	1.71765752	0.059972
7.0157124	220	0.599455	0.251937	1.767516513	0.063472
7.0166097	221	0.60218	0.258993	1.817255568	0.067078
7.0201907	222	0.604905	0.266064	1.867817073	0.07079
7.021084	223	0.607629	0.273146	1.917782897	0.074609
7.0224224	224	0.610354	0.280243	1.967981916	0.078536
7.0228681	225	0.613079	0.287353	2.018039244	0.082572
7.023759	226	0.615804	0.294478	2.068345779	0.086718
7.024649	227	0.618529	0.301619	2.118768589	0.090974
7.0264268	228	0.621253	0.308775	2.169582044	0.095342
7.0282014	229	0.623978	0.315946	2.220531805	0.099822
7.0299729	230	0.626703	0.323134	2.271625886	0.104416
7.0299729	231	0.629428	0.330339	2.322272165	0.109124
7.0335065	232	0.632153	0.33756	2.37423112	0.113947
7.0343879	233	0.634877	0.3448	2.42545466	0.118887
7.0348284	234	0.637602	0.352056	2.476655673	0.123944
7.0352686	235	0.640327	0.359333	2.528006976	0.12912
7.0387835	236	0.643052	0.366629	2.580619939	0.134417
7.039222	237	0.645777	0.373943	2.632269878	0.139834
7.0396603	238	0.648501	0.381278	2.684070216	0.145373
7.0405364	239	0.651226	0.388633	2.736183162	0.151035
7.0440329	240	0.653951	0.39601	2.789506829	0.156824
7.0453409	241	0.656676	0.403408	2.842143459	0.162738
7.0457766	242	0.659401	0.410828	2.894601255	0.16878
7.0457766	243	0.662125	0.418271	2.947043514	0.174951
7.0466473	244	0.66485	0.425737	3.000016666	0.181252
7.0475172	245	0.667575	0.433226	3.053170744	0.187685
7.0475172	246	0.6703	0.440741	3.106130721	0.194253
7.0492548	247	0.673025	0.448281	3.160045907	0.200956

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.0496888	248	0.675749	0.455846	3.213569368	0.207795
7.0501225	249	0.678474	0.463436	3.267283653	0.214773
7.0561753	250	0.681199	0.471055	3.323843762	0.221892
7.0561753	251	0.683924	0.478699	3.377783303	0.229153
7.0561753	252	0.686649	0.486373	3.431931416	0.236558
7.057037	253	0.689373	0.494074	3.486697797	0.244109
7.0578979	254	0.692098	0.501807	3.541701747	0.25181
7.0587582	255	0.694823	0.509567	3.596911232	0.259659
7.0587582	256	0.697548	0.51736	3.651921777	0.267662
7.059188	257	0.700272	0.525184	3.707374734	0.275819
7.0604764	258	0.702997	0.533041	3.763524811	0.284133
7.0604764	259	0.705722	0.54093	3.819223	0.292605
7.0613344	260	0.708447	0.548853	3.875632911	0.301239
7.0617631	261	0.711172	0.556811	3.932066283	0.310038
7.0621916	262	0.713896	0.564803	3.988747239	0.319002
7.0653144	263	0.716621	0.572834	4.047251402	0.328139
7.0656134	264	0.719346	0.5809	4.104414452	0.337445
7.0673198	265	0.722071	0.589005	4.162684501	0.346927
7.0707241	266	0.724796	0.597147	4.222261238	0.356584
7.0732697	267	0.72752	0.60533	4.281663171	0.366425
7.0732697	268	0.730245	0.613554	4.33983449	0.376449
7.0766538	269	0.73297	0.62182	4.400407641	0.386661
7.0766538	270	0.735695	0.630129	4.459202137	0.397062
7.0774981	271	0.73842	0.638481	4.518849428	0.407658
7.0791844	272	0.741144	0.646878	4.579369398	0.418451
7.0804473	273	0.743869	0.65532	4.639962194	0.429445
7.0825486	274	0.746594	0.663809	4.701462935	0.440643
7.0825486	275	0.749319	0.672347	4.761932896	0.452051
7.0833878	276	0.752044	0.680934	4.823320582	0.463671
7.0867379	277	0.754768	0.689572	4.886816488	0.47551
7.0867379	278	0.757493	0.698262	4.948401813	0.48757
7.0875737	279	0.760218	0.707004	5.010940582	0.499854
7.0884088	280	0.762943	0.7158	5.073880276	0.512369
7.0900768	281	0.765668	0.724654	5.137849321	0.525123
7.0900768	282	0.768392	0.733562	5.201011275	0.538113
7.0900768	283	0.771117	0.742531	5.264600434	0.551352
7.0917421	284	0.773842	0.751559	5.329860294	0.56484
7.0967214	285	0.776567	0.760649	5.398114535	0.578587
7.0967214	286	0.779292	0.769803	5.463078378	0.592597
7.0967214	287	0.782016	0.779021	5.528494031	0.606874
7.1019231	288	0.784741	0.788307	5.598494286	0.621428
7.1033221	289	0.787466	0.797659	5.666026541	0.636259
7.1057861	290	0.790191	0.807083	5.734961493	0.651383
7.1066881	291	0.792916	0.816578	5.80316835	0.6668
7.1098795	292	0.79564	0.826149	5.873817017	0.682522
7.1115121	293	0.798365	0.835796	5.943773895	0.698555
7.1115121	294	0.80109	0.845521	6.01293173	0.714905
7.1147694	295	0.803815	0.855325	6.085441582	0.731581
7.1184213	296	0.80654	0.865214	6.158955486	0.748595
7.119231	297	0.809264	0.875189	6.230669561	0.765955
7.1212525	298	0.811989	0.88525	6.304087643	0.783667
7.1236728	299	0.814714	0.895402	6.378551439	0.801745
7.1252831	300	0.817439	0.905648	6.452995098	0.820197
7.1268908	301	0.820163	0.915988	6.528149979	0.839035
7.1276937	302	0.822888	0.926427	6.603289455	0.858267
7.1302987	303	0.825613	0.936971	6.680879753	0.877914
7.1308988	304	0.828338	0.947618	6.757371268	0.897981
7.1308988	305	0.831063	0.958373	6.834062479	0.918479
7.1396603	306	0.833787	0.969242	6.920056396	0.939429
7.1444072	307	0.836512	0.980224	7.003118176	0.960839
7.1467722	308	0.839237	0.991326	7.084784562	0.982728
7.1486602	309	0.841962	1.002554	7.166919265	1.005115
7.1518772	310	0.844687	1.013907	7.251338159	1.028007

Table C-16. Sulfate Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.1670379	311	0.847411	1.025394	7.349036815	1.051433
7.1701195	312	0.850136	1.037017	7.435537491	1.075405
7.1770188	313	0.852861	1.048784	7.527141124	1.099947
7.1831117	314	0.855586	1.060696	7.619097291	1.125076
7.1929342	315	0.858311	1.07276	7.716294772	1.150815
7.219642	316	0.861035	1.084984	7.833195942	1.17719
7.3395377	317	0.86376	1.097371	8.054197993	1.204224
7.3620106	318	0.866485	1.109929	8.17131007	1.231943
7.4091364	319	0.86921	1.122664	8.317973303	1.260375
7.4217758	320	0.871935	1.135584	8.428047735	1.28955
7.4283332	321	0.874659	1.148696	8.53289927	1.319503
7.4283332	322	0.877384	1.162009	8.631790654	1.350265
7.4401467	323	0.880109	1.175531	8.746123045	1.381873
7.4442486	324	0.882834	1.189273	8.853247363	1.414371
7.4524025	325	0.885559	1.203243	8.967053322	1.447794
7.4535619	326	0.888283	1.21745	9.074335977	1.482184
7.4679423	327	0.891008	1.231908	9.199820142	1.517598
7.4787348	328	0.893733	1.246628	9.323203765	1.554083
7.488853	329	0.896458	1.261624	9.448114865	1.591695
7.4894121	330	0.899183	1.276908	9.563288886	1.630494
7.4899709	331	0.901907	1.292497	9.680761645	1.670547
7.4938739	332	0.904632	1.308406	9.805028801	1.711926
7.4972072	333	0.907357	1.324654	9.931205702	1.754708
7.4977617	334	0.910082	1.341259	10.05644127	1.798976
7.4977617	335	0.912807	1.358244	10.18378936	1.844827
7.4999765	336	0.915531	1.375627	10.31716762	1.892349
7.5043916	337	0.918256	1.393437	10.4568956	1.941666
7.5043916	338	0.920981	1.411699	10.59394571	1.992895
7.5054923	339	0.923706	1.430449	10.73622181	2.046184
7.5126175	340	0.926431	1.449712	10.89113043	2.101664
7.5153446	341	0.929155	1.46953	11.0440221	2.159518
7.5194212	342	0.93188	1.489943	11.20351138	2.219931
7.5196924	343	0.934605	1.510994	11.36220687	2.283102
7.5205055	344	0.93733	1.532735	11.52694234	2.349277
7.5218593	345	0.940054	1.555231	11.69823164	2.418745
7.5229409	346	0.942779	1.578542	11.87527626	2.491794
7.5318203	347	0.945504	1.602739	12.07154099	2.568772
7.5320881	348	0.948229	1.627918	12.26162344	2.650118
7.5331588	349	0.950954	1.654171	12.46113113	2.736281
7.5342283	350	0.953678	1.681619	12.66970394	2.827844
7.5352967	351	0.956403	1.710391	12.88830508	2.925438
7.5355636	352	0.959128	1.740655	13.11681366	3.029879
7.53743	353	0.961853	1.772605	13.36088748	3.142129
7.5411525	354	0.964578	1.806475	13.62290154	3.263351
7.5416831	355	0.967302	1.842545	13.89589287	3.394973
7.5490827	356	0.970027	1.88119	14.20125699	3.538875
7.5517122	357	0.972752	1.922872	14.52097513	3.697436
7.5553819	358	0.975477	1.968183	14.87037365	3.873744
7.557995	359	0.978202	2.01795	15.25165944	4.072124
7.5694118	360	0.980926	2.073266	15.6934036	4.298432
7.5781455	361	0.983651	2.135776	16.18521746	4.561537
7.5796788	362	0.986376	2.207944	16.73550568	4.875016
7.5801894	363	0.989101	2.293855	17.38785371	5.26177
7.5827385	364	0.991826	2.40103	18.20637981	5.764943
7.5862963	365	0.99455	2.54593	19.31418185	6.481761
7.5883237	366	0.997275	2.779198	21.08945042	7.723939

Table C-17. Sulfate Near Upgradient Background Data Set, Filliben's Statistic Analysis

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
324	5.780743516	1	0.00189	-2.8956	-938.179	8.384574	-16.73879522
328	5.793013608	2	0.00459	-2.6051	-854.468	6.786462	-15.09128628
335	5.814130532	3	0.00732	-2.4411	-817.757	5.958801	-14.19267398
340	5.828945618	4	0.01005	-2.3244	-790.301	5.4029	-13.54888163
357	5.877735782	5	0.01278	-2.2328	-797.113	4.985438	-13.12386425
362	5.891644212	6	0.01551	-2.1568	-780.763	4.651799	-12.70711603
363	5.894402834	7	0.01824	-2.0915	-759.225	4.374492	-12.32831202
402	5.996452089	8	0.02097	-2.0341	-817.717	4.137649	-12.1975108
422	6.045005314	9	0.02370	-1.9827	-836.71	3.931201	-11.9855876
448	6.104793232	10	0.02643	-1.9361	-867.367	3.748432	-11.81940988
502	6.21860012	11	0.02916	-1.8933	-950.443	3.584635	-11.77375838
651.7	6.479584333	12	0.03189	-1.8538	-1208.09	3.43639	-12.01153134
672.6	6.511150799	13	0.03462	-1.8169	-1222.04	3.301084	-11.83003482
672.9	6.51159673	14	0.03735	-1.7823	-1199.34	3.176757	-11.60591749
679.4	6.521210056	15	0.04008	-1.7498	-1188.82	3.061815	-11.41084036
698.6	6.549078332	16	0.04281	-1.7190	-1200.91	2.955022	-11.25798187
706	6.559615237	17	0.04554	-1.6898	-1192.98	2.855348	-11.08429018
706.85	6.560818479	18	0.04826	-1.6619	-1174.73	2.761977	-10.90355327
709.25	6.564208074	19	0.05099	-1.6353	-1159.83	2.674172	-10.73438161
710.5	6.565968948	20	0.05372	-1.6098	-1143.74	2.591372	-10.56972472
713.4	6.570042273	21	0.05645	-1.5853	-1130.93	2.513058	-10.41524432
714	6.570882962	22	0.05918	-1.5617	-1115.03	2.438815	-10.26155484
719.6	6.578695502	23	0.06191	-1.5389	-1107.4	2.36826	-10.12405357
726.15	6.587756605	24	0.06464	-1.5169	-1101.52	2.301084	-9.993182562
726.95	6.588857699	25	0.06737	-1.4957	-1087.27	2.236997	-9.854687544
733.1	6.597282118	26	0.07010	-1.4750	-1081.35	2.175747	-9.731263227
741.25	6.60833795	27	0.07283	-1.4550	-1078.54	2.117119	-9.615345572
750	6.620073207	28	0.07556	-1.4356	-1076.69	2.060911	-9.503693448
758.05	6.630749347	29	0.07829	-1.4167	-1073.91	2.006966	-9.393612999
759	6.632001777	30	0.08102	-1.3983	-1061.27	1.95511	-9.273213775
759	6.632001777	31	0.08375	-1.3803	-1047.64	1.905201	-9.154086308
763.5	6.637913125	32	0.08648	-1.3628	-1040.47	1.857138	-9.045940049
770	6.646390515	33	0.08921	-1.3457	-1036.15	1.810779	-8.943728563
772.4	6.649502551	34	0.09194	-1.3289	-1026.46	1.766033	-8.836669071

Normal

119210.677	=sum X(i)*M(i)
361.144	=sum M(i)^2
347.34	= standard deviation
19.0038	= square root of sum Mi^2
0.945	= Filliben's Statistic

Lognormal

111.386	=sum X(i)*M(i)
361.144	=sum M(i)^2
0.32	= standard deviation
19.0038	= square root of sum Mi^2
0.961	= Filliben's Statistic

.987+ is acceptable value

Normal - Fail
Lognormal - Fail

Table C-17. Sulfate Near Upgradient Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
773.7667	6.651270364	35	0.09467	-1.3126	-1015.612	1.722802	-8.73016129
778	6.656726524	36	0.09740	-1.2965	-1008.702	1.680996	-8.630661922
778	6.656726524	37	0.10013	-1.2808	-996.4911	1.640543	-8.526180573
779	6.658011046	38	0.10286	-1.2655	-985.7859	1.601365	-8.42538317
780	6.65929392	39	0.10558	-1.2504	-975.2788	1.563394	-8.32649743
784	6.66440902	40	0.10831	-1.2355	-968.6665	1.526569	-8.234170611
790	6.672032945	41	0.11104	-1.2210	-964.5873	1.490833	-8.146529789
790	6.672032945	42	0.11377	-1.2067	-953.2961	1.456134	-8.051168362
790	6.672032945	43	0.11650	-1.1927	-942.1953	1.422419	-7.957415003
796.5	6.680227129	44	0.11923	-1.1788	-938.9419	1.389651	-7.874883788
797	6.680854679	45	0.12196	-1.1652	-928.6927	1.357774	-7.784769155
800	6.684611728	46	0.12469	-1.1519	-921.4818	1.326764	-7.699685409
800.15	6.68479921	47	0.12742	-1.1387	-911.1061	1.296567	-7.611774813
801	6.685860947	48	0.13015	-1.1257	-901.671	1.267159	-7.526150597
801	6.685860947	49	0.13288	-1.1129	-891.4172	1.238503	-7.440563969
802.5	6.687731855	50	0.13561	-1.1003	-882.9596	1.210575	-7.35825198
804.1	6.68972364	51	0.13834	-1.0878	-874.71	1.183336	-7.277165042
804.5	6.690220966	52	0.14107	-1.0755	-865.2655	1.156769	-7.195547101
807	6.693323668	53	0.14380	-1.0634	-858.1725	1.130842	-7.117752435
807.05	6.693385624	54	0.14653	-1.0514	-848.568	1.105535	-7.037720739
807.5	6.693943055	55	0.14926	-1.0396	-839.4974	1.080821	-6.959191912
811	6.698268054	56	0.15199	-1.0280	-833.6689	1.056685	-6.885496966
814	6.701960366	57	0.15472	-1.0164	-827.3617	1.033099	-6.811972368
815.5	6.703801422	58	0.15745	-1.0050	-819.5874	1.010049	-6.737401606
816	6.704414355	59	0.16017	-0.9937	-810.891	0.987517	-6.662437495
816	6.704414355	60	0.16290	-0.9826	-801.7941	0.965485	-6.587695804
818.1	6.706984579	61	0.16563	-0.9716	-794.8358	0.943935	-6.516259183
820.4	6.709792026	62	0.16836	-0.9607	-788.1185	0.922851	-6.445771808
820.5	6.709913911	63	0.17109	-0.9499	-779.3548	0.902222	-6.373435408
820.5	6.709913911	64	0.17382	-0.9392	-770.5865	0.882035	-6.301729492
821.5	6.711131937	65	0.17655	-0.9286	-762.8326	0.86227	-6.23185642
823	6.712956201	66	0.17928	-0.9181	-755.6007	0.842917	-6.163200954
826	6.716594774	67	0.18201	-0.9077	-749.7833	0.82397	-6.096841196
827	6.717804695	68	0.18474	-0.8974	-742.188	0.80541	-6.028868099
828	6.719013154	69	0.18747	-0.8873	-734.6493	0.787226	-5.961495192
831	6.722629795	70	0.19020	-0.8772	-728.9199	0.769409	-5.896821221
833	6.725033642	71	0.19293	-0.8672	-722.3386	0.751955	-5.831634281
833.3	6.725393721	72	0.19566	-0.8572	-714.3302	0.734844	-5.765213219
835	6.727431725	73	0.19839	-0.8474	-707.5724	0.718073	-5.700772697
835	6.727431725	74	0.20112	-0.8376	-699.4257	0.701633	-5.635135807
835	6.727431725	75	0.20385	-0.8280	-691.3444	0.685513	-5.570026643
835	6.727431725	76	0.20658	-0.8184	-683.3277	0.669707	-5.505437557
835	6.727431725	77	0.20931	-0.8088	-675.3727	0.654205	-5.441345605
837	6.72982407	78	0.21204	-0.7994	-669.0791	0.639005	-5.379670821
838	6.7310181	79	0.21477	-0.7900	-662.0149	0.62409	-5.317463369
838	6.7310181	80	0.21749	-0.7807	-654.2104	0.609462	-5.254775878
843	6.736966958	81	0.22022	-0.7714	-650.3203	0.595113	-5.197136685
844	6.738152495	82	0.22295	-0.7623	-643.3427	0.581032	-5.13618592
845	6.739336627	83	0.22568	-0.7531	-636.4024	0.567218	-5.07565671
846	6.74051936	84	0.22841	-0.7441	-629.4939	0.553659	-5.01550335
846	6.74051936	85	0.23114	-0.7351	-621.8861	0.540357	-4.954888361
850	6.745236349	86	0.23387	-0.7262	-617.2311	0.5273	-4.898081788
850.75	6.746118313	87	0.23660	-0.7173	-610.2239	0.514487	-4.838839176
851	6.746412129	88	0.23933	-0.7085	-602.8956	0.501909	-4.77953241
851	6.746412129	89	0.24206	-0.6997	-595.4364	0.489566	-4.720398386
853	6.748759547	90	0.24479	-0.6910	-589.4036	0.47745	-4.663239185
853	6.748759547	91	0.24752	-0.6823	-582.016	0.465556	-4.604790451
853	6.748759547	92	0.25025	-0.6737	-574.6712	0.45388	-4.546679304

Table C-17. Sulfate Near Upgradient Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
855	6.751101469	93	0.25298	-0.6651	-568.6992	0.442418	-4.490463464
856	6.752270376	94	0.25571	-0.6566	-562.0793	0.431169	-4.433775107
857	6.753437919	95	0.25844	-0.6482	-555.4813	0.420124	-4.377373081
858	6.754604099	96	0.26117	-0.6398	-548.9064	0.409281	-4.321265259
860	6.756932389	97	0.26390	-0.6314	-542.9851	0.398638	-4.26617875
864	6.761572769	98	0.26663	-0.6230	-538.3146	0.38819	-4.212793488
864.5	6.762151305	99	0.26936	-0.6148	-531.4624	0.377933	-4.157118474
865	6.762729507	100	0.27209	-0.6065	-524.6392	0.367866	-4.101725826
865	6.762729507	101	0.27481	-0.5983	-517.543	0.357982	-4.046246813
867	6.765038977	102	0.27754	-0.5902	-511.6626	0.34828	-3.99240752
867.5	6.765615512	103	0.28027	-0.5820	-504.91	0.338758	-3.937783488
867.9	6.766076501	104	0.28300	-0.5739	-498.1255	0.329411	-3.883345308
868	6.766191715	105	0.28573	-0.5659	-491.1964	0.320236	-3.828950167
868	6.766191715	106	0.28846	-0.5579	-484.2414	0.311232	-3.774735053
872	6.770789424	107	0.29119	-0.5499	-479.5176	0.302396	-3.723294396
872	6.770789424	108	0.29392	-0.5420	-472.594	0.293727	-3.669535082
873	6.771935556	109	0.29665	-0.5341	-466.2323	0.285217	-3.616603397
873.5	6.77250813	110	0.29938	-0.5262	-459.6214	0.276869	-3.563582792
879	6.778784898	111	0.30211	-0.5183	-455.6222	0.268678	-3.513725493
884	6.784457063	112	0.30484	-0.5105	-451.3096	0.260642	-3.463677063
885	6.785587645	113	0.30757	-0.5028	-444.9362	0.25276	-3.411472883
885	6.785587645	114	0.31030	-0.4950	-438.0784	0.245029	-3.358892077
885	6.785587645	115	0.31303	-0.4873	-431.2478	0.237447	-3.306519559
885.5	6.786152457	116	0.31576	-0.4796	-424.6811	0.230011	-3.254603065
889	6.790097236	117	0.31849	-0.4719	-419.5498	0.222722	-3.204481327
896	6.797940413	118	0.32122	-0.4643	-416.0122	0.215574	-3.156279104
897	6.799055862	119	0.32395	-0.4567	-409.6532	0.208568	-3.105078041
900.5	6.802950165	120	0.32668	-0.4491	-404.4253	0.201701	-3.055285836
902	6.80461452	121	0.32941	-0.4416	-398.2838	0.194972	-3.004620187
904	6.80682936	122	0.33213	-0.4340	-392.3602	0.188379	-2.954346283
904	6.80682936	123	0.33486	-0.4265	-385.5751	0.18192	-2.90325691
904.5	6.807382305	124	0.33759	-0.4190	-379.0212	0.175594	-2.852561751
908.5	6.811794888	125	0.34032	-0.4116	-373.9219	0.169399	-2.803609408
910	6.8134446	126	0.34305	-0.4041	-367.7723	0.163333	-2.75362188
910.5	6.813993899	127	0.34578	-0.3967	-361.2254	0.157397	-2.703335953
913	6.816735881	128	0.34851	-0.3893	-355.4684	0.151586	-2.654035033
913	6.816735881	129	0.35124	-0.3820	-348.7403	0.145903	-2.603801274
914	6.817830571	130	0.35397	-0.3746	-342.4045	0.140342	-2.554109355
917	6.821107472	131	0.35670	-0.3673	-336.8073	0.134904	-2.505342395
919	6.823286122	132	0.35943	-0.3600	-330.825	0.129588	-2.456271698
920	6.82437367	133	0.36216	-0.3527	-324.4775	0.124392	-2.406908484
921	6.825460036	134	0.36489	-0.3454	-318.1332	0.119316	-2.357660919
927	6.831953566	135	0.36762	-0.3382	-313.482	0.114358	-2.31035026
928	6.833031733	136	0.37035	-0.3309	-307.105	0.109516	-2.261269901
929	6.834108739	137	0.37308	-0.3237	-300.7305	0.104791	-2.212297875
930	6.835184586	138	0.37581	-0.3165	-294.3563	0.10018	-2.163418725
931	6.836259277	139	0.37854	-0.3093	-287.9835	0.095683	-2.114640299
932	6.837332815	140	0.38127	-0.3022	-281.6113	0.091299	-2.065954905
933	6.838405201	141	0.38400	-0.2950	-275.2385	0.087027	-2.017354846
936	6.841615476	142	0.38672	-0.2879	-269.4419	0.082866	-1.969463725
937	6.842683282	143	0.38945	-0.2807	-263.0539	0.078815	-1.921018674
938	6.843749949	144	0.39218	-0.2736	-256.6665	0.074874	-1.872667021
940	6.845879875	145	0.39491	-0.2665	-250.5433	0.071041	-1.824669197
942	6.848005275	146	0.39764	-0.2595	-244.4044	0.067316	-1.776733393
944.5	6.850655687	147	0.40037	-0.2524	-238.3753	0.063697	-1.72898565
946	6.852242569	148	0.40310	-0.2453	-232.0784	0.060185	-1.681033014
946	6.852242569	149	0.40583	-0.2383	-225.4136	0.056778	-1.632757777
954	6.860663671	150	0.40856	-0.2312	-220.6107	0.053476	-1.586515596

Table C-17. Sulfate Near Upgradient Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
955	6.86171134	151	0.41129	-0.2242	-214.1366	0.050278	-1.53857974
960	6.866933284	152	0.41402	-0.2172	-208.5271	0.047183	-1.491606108
961	6.867974409	153	0.41675	-0.2102	-202.0176	0.044191	-1.443758506
961	6.867974409	154	0.41948	-0.2032	-195.3008	0.041301	-1.395755027
967	6.874198495	155	0.42221	-0.1962	-189.7701	0.038513	-1.349035465
967	6.874198495	156	0.42494	-0.1893	-183.03	0.035825	-1.301121339
968	6.875232087	157	0.42767	-0.1823	-176.481	0.033239	-1.253458173
969	6.876264612	158	0.43040	-0.1754	-169.9268	0.030752	-1.205842969
974	6.881411304	159	0.43313	-0.1684	-164.0402	0.028365	-1.158961043
974	6.881411304	160	0.43586	-0.1615	-157.2845	0.026077	-1.111231341
975	6.882437471	161	0.43859	-0.1546	-150.6911	0.023887	-1.063715
975	6.882437471	162	0.44132	-0.1476	-143.944	0.021796	-1.016087722
980	6.887552572	163	0.44404	-0.1407	-137.9071	0.019803	-0.969227196
984	6.891625897	164	0.44677	-0.1338	-131.6741	0.017906	-0.922203556
984	6.891625897	165	0.44950	-0.1269	-124.8848	0.016108	-0.87465372
985	6.892641641	166	0.45223	-0.1200	-118.22	0.014405	-0.827257134
986	6.893656355	167	0.45496	-0.1131	-111.5482	0.012799	-0.779893447
993	6.900730664	168	0.45769	-0.1062	-105.5057	0.011289	-0.733198802
996	6.903747258	169	0.46042	-0.0994	-98.97277	0.009874	-0.68602712
998	6.905753276	170	0.46315	-0.0925	-92.31175	0.008556	-0.638759721
1001	6.908754779	171	0.46588	-0.0856	-85.71342	0.007332	-0.591581399
1002	6.909753282	172	0.46861	-0.0788	-78.91977	0.006203	-0.544227654
1004	6.9117473	173	0.47134	-0.0719	-72.18885	0.00517	-0.496963205
1008	6.915723449	174	0.47407	-0.0650	-65.564	0.004231	-0.449823899
1012	6.91968385	175	0.47680	-0.0582	-58.88659	0.003386	-0.402644876
1014	6.921658184	176	0.47953	-0.0513	-52.05514	0.002635	-0.35533321
1015.5	6.923136381	177	0.48226	-0.0445	-45.17634	0.001979	-0.307988159
1023	6.930494766	178	0.48499	-0.0376	-38.50515	0.001417	-0.26085993
1030	6.937314081	179	0.48772	-0.0308	-31.71701	0.000948	-0.213622217
1030.5	6.9377994	180	0.49045	-0.0239	-24.67972	0.000574	-0.166155226
1045	6.951772164	181	0.49318	-0.0171	-17.87506	0.000293	-0.118912299
1050	6.956545443	182	0.49591	-0.0103	-10.77683	0.000105	-0.071399532
1051	6.957497371	183	0.49864	-0.0034	-3.5953	1.17E-05	-0.023800464
1053.5	6.959873233	184	0.50136	0.0034	3.603852	1.17E-05	0.023808592
1055	6.961296046	185	0.50409	0.0103	10.82815	0.000105	0.07144829
1058	6.964135612	186	0.50682	0.0171	18.09743	0.000293	0.119123779
1069	6.974478911	187	0.50955	0.0239	25.60177	0.000574	0.167033673
1070	6.975413927	188	0.51228	0.0308	32.94874	0.000948	0.214795434
1072	6.977281342	189	0.51501	0.0376	40.34948	0.001417	0.26262095
1078	6.982862751	190	0.51774	0.0445	47.95677	0.001979	0.310645194
1082	6.986566459	191	0.52047	0.0513	55.54602	0.002635	0.358665369
1086	6.9902565	192	0.52320	0.0582	63.19253	0.003386	0.406751381
1090	6.993932975	193	0.52593	0.0650	70.89758	0.004231	0.454910932
1090	6.993932975	194	0.52866	0.0719	78.37235	0.00517	0.502872457
1091	6.994849986	195	0.53139	0.0788	85.92961	0.006203	0.550930062
1092.55	6.996269693	196	0.53412	0.0856	93.55264	0.007332	0.599075107
1093	6.996681488	197	0.53685	0.0925	101.0989	0.008556	0.647170285
1093	6.996681488	198	0.53958	0.0994	108.6117	0.009874	0.695262018
1096	6.999422468	199	0.54231	0.1062	116.4494	0.011289	0.743684751
1097	7.00033446	200	0.54504	0.1131	124.1059	0.012799	0.79196216
1098	7.001245622	201	0.54777	0.1200	131.7823	0.014405	0.84029182
1100	7.003065459	202	0.55050	0.1269	139.607	0.016108	0.888797121
1100	7.003065459	203	0.55323	0.1338	147.1966	0.017906	0.937115851
1100	7.003065459	204	0.55596	0.1407	154.7937	0.019803	0.98548235
1100	7.003065459	205	0.55868	0.1476	162.3984	0.021796	1.033896619
1101	7.003974137	206	0.56141	0.1546	170.165	0.023887	1.082499098
1102	7.00488199	207	0.56414	0.1615	177.9543	0.026077	1.131169765
1102	7.00488199	208	0.56687	0.1684	185.5978	0.028365	1.179755864

Table C-17. Sulfate Near Upgradient Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1103	7.005789019	209	0.56960	0.1754	193.4255	0.030752	1.228556769
1103	7.005789019	210	0.57233	0.1823	201.0935	0.033239	1.277260665
1104	7.006695227	211	0.57506	0.1893	208.9608	0.035825	1.326199801
1104	7.006695227	212	0.57779	0.1962	216.6558	0.038513	1.375037448
1105	7.007600614	213	0.58052	0.2032	224.5654	0.041301	1.424130785
1105.5	7.008053	214	0.58325	0.2102	232.3939	0.044191	1.473205275
1106	7.008505182	215	0.58598	0.2172	240.2406	0.047183	1.522357755
1106	7.008505182	216	0.58871	0.2242	247.9949	0.050278	1.571494856
1107	7.009408933	217	0.59144	0.2312	255.9917	0.053476	1.620912658
1108	7.010311867	218	0.59417	0.2383	264.0151	0.056778	1.670422654
1112	7.013915475	219	0.59690	0.2453	272.8025	0.060185	1.720695575
1114	7.01571242	220	0.59963	0.2524	281.1541	0.063697	1.770643082
1115	7.016609684	221	0.60236	0.2595	289.2897	0.067316	1.82047826
1119	7.020190708	222	0.60509	0.2665	298.2531	0.071041	1.871129201
1120	7.021083964	223	0.60782	0.2736	306.4675	0.074874	1.921191231
1121.5	7.022422354	224	0.61055	0.2807	314.8505	0.078815	1.97147872
1122	7.022868086	225	0.61328	0.2879	322.9849	0.082866	2.021640063
1123	7.023758955	226	0.61600	0.2950	331.2892	0.087027	2.07203489
1124	7.02464903	227	0.61873	0.3022	339.6256	0.091299	2.122554001
1126	7.026426809	228	0.62146	0.3093	348.3023	0.095683	2.173464271
1128	7.028201432	229	0.62419	0.3165	357.0257	0.10018	2.224510895
1130	7.029972912	230	0.62692	0.3237	365.797	0.104791	2.275701885
1130	7.029972912	231	0.62965	0.3309	373.9533	0.109516	2.32644407
1134	7.033506484	232	0.63238	0.3382	383.4829	0.114358	2.378509072
1135	7.03438793	233	0.63511	0.3454	392.0534	0.119316	2.429829114
1135.5	7.034828362	234	0.63784	0.3527	400.4828	0.124392	2.48113437
1136	7.035268599	235	0.64057	0.3600	408.9415	0.129588	2.532581932
1140	7.038783541	236	0.64330	0.3673	418.7136	0.134904	2.585293207
1140.5	7.039222042	237	0.64603	0.3746	427.2564	0.140342	2.637047472
1141	7.03966035	238	0.64876	0.3820	435.8299	0.145903	2.688952148
1142	7.04053639	239	0.65149	0.3893	444.6275	0.151586	2.741169756
1146	7.044032897	240	0.65422	0.3967	454.656	0.157397	2.794600005
1147.5	7.045340942	241	0.65695	0.4041	463.7568	0.163333	2.847341706
1148	7.045776577	242	0.65968	0.4116	472.4957	0.169399	2.899911965
1148	7.045776577	243	0.66241	0.4190	481.0573	0.175594	2.952458356
1149	7.046647278	244	0.66514	0.4265	490.0728	0.18192	3.005544332
1150	7.047517221	245	0.66787	0.4340	499.1308	0.188379	3.058811262
1150	7.047517221	246	0.67059	0.4416	507.7897	0.194972	3.111875397
1152	7.049254841	247	0.67332	0.4491	517.3769	0.201701	3.165904195
1152.5	7.049688775	248	0.67605	0.4567	526.3381	0.208568	3.219540221
1153	7.05012252	249	0.67878	0.4643	535.3371	0.215574	3.273367085
1160	7.056175284	250	0.68151	0.4719	547.4441	0.222722	3.330052745
1160	7.056175284	251	0.68424	0.4796	556.3299	0.230011	3.384104594
1160	7.056175284	252	0.68697	0.4873	565.2514	0.237447	3.438373035
1161	7.057036982	253	0.68970	0.4950	574.6995	0.245029	3.493260547
1162	7.057897937	254	0.69243	0.5028	584.1987	0.25276	3.548377632
1163	7.058758153	255	0.69516	0.5105	593.7478	0.260642	3.60371633
1163	7.058758153	256	0.69789	0.5183	602.8312	0.268678	3.658847248
1163.5	7.059187983	257	0.70062	0.5262	612.2146	0.276869	3.714429032
1165	7.060476366	258	0.70335	0.5341	622.1771	0.285217	3.770700799
1165	7.060476366	259	0.70608	0.5420	631.3899	0.293727	3.826535444
1166	7.061334367	260	0.70881	0.5499	641.1898	0.302396	3.883066661
1166.5	7.061763091	261	0.71154	0.5579	650.7691	0.311232	3.939628937
1167	7.062191632	262	0.71427	0.5659	660.3988	0.320236	3.996454871
1170.65	7.065314429	263	0.71700	0.5739	671.8869	0.329411	4.055090958
1171	7.065613364	264	0.71973	0.5820	681.5558	0.338758	4.112390896
1173	7.067319849	265	0.72246	0.5902	692.2494	0.34828	4.17079946
1177	7.070724107	266	0.72519	0.5983	704.2175	0.357982	4.230524799

Table C-17. Sulfate Near Upgradient Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1180	7.073269717	267	0.72791	0.6065	715.6927	0.367866	4.290074451
1180	7.073269717	268	0.73064	0.6148	725.42	0.377933	4.348382473
1184	7.076653815	269	0.73337	0.6230	737.6904	0.38819	4.409104528
1184	7.076653815	270	0.73610	0.6314	747.5516	0.398638	4.468043838
1185	7.077498054	271	0.73883	0.6398	758.105	0.409281	4.527837015
1187	7.079184395	272	0.74156	0.6482	769.3773	0.420124	4.58851204
1188.5	7.080447287	273	0.74429	0.6566	780.4104	0.431169	4.649267458
1191	7.082548569	274	0.74702	0.6651	792.1881	0.442418	4.710923948
1191	7.082548569	275	0.74975	0.6737	802.3838	0.45388	4.771554947
1192	7.083387848	276	0.75248	0.6823	813.3213	0.465556	4.833112884
1196	7.086737935	277	0.75521	0.6910	826.4088	0.47745	4.896774555
1196	7.086737935	278	0.75794	0.6997	836.8295	0.489566	4.958521014
1197	7.087573706	279	0.76067	0.7085	848.0212	0.501909	5.021230187
1198	7.088408779	280	0.76340	0.7173	859.2985	0.514487	5.08435644
1200	7.090076836	281	0.76613	0.7262	871.3851	0.5273	5.14848916
1200	7.090076836	282	0.76886	0.7351	882.108	0.540357	5.211844565
1200	7.090076836	283	0.77159	0.7441	892.8992	0.553659	5.275602995
1202	7.091742115	284	0.77432	0.7531	905.273	0.567218	5.341066998
1208	7.096721378	285	0.77705	0.7623	920.8032	0.581032	5.409506605
1208	7.096721378	286	0.77978	0.7714	931.8943	0.595113	5.474664081
1208	7.096721378	287	0.78251	0.7807	943.0623	0.609462	5.540273367
1214.3	7.101923058	288	0.78523	0.7900	959.2896	0.62409	5.61047603
1216	7.103322063	289	0.78796	0.7994	972.0432	0.639005	5.678236761
1219	7.105786129	290	0.79069	0.8088	985.9632	0.654205	5.747369829
1220.1	7.106688102	291	0.79342	0.8184	998.4768	0.669707	5.815804483
1224	7.109879463	292	0.79615	0.8280	1013.42	0.685513	5.886677065
1226	7.111512116	293	0.79888	0.8376	1026.941	0.701633	5.956855188
1226	7.111512116	294	0.80161	0.8474	1038.903	0.718073	6.026239398
1230	7.114769448	295	0.80434	0.8572	1054.394	0.734844	6.098998003
1234.5	7.118421309	296	0.80707	0.8672	1070.501	0.751955	6.172761646
1235.5	7.119231025	297	0.80980	0.8772	1083.731	0.769409	6.244703913
1238	7.121252453	298	0.81253	0.8873	1098.425	0.787226	6.31838505
1241	7.123672785	299	0.81526	0.8974	1113.731	0.80541	6.393112862
1243	7.125283092	300	0.81799	0.9077	1128.306	0.82397	6.467819029
1245	7.126890809	301	0.82072	0.9181	1143.041	0.842917	6.54323653
1246	7.127693699	302	0.82345	0.9286	1157.017	0.86227	6.618669422
1249.25	7.13029865	303	0.82618	0.9392	1173.254	0.882035	6.696540953
1250	7.13089883	304	0.82891	0.9499	1187.317	0.902222	6.77330942
1250	7.13089883	305	0.83164	0.9607	1200.814	0.922851	6.850308693
1261	7.139660336	306	0.83437	0.9716	1225.141	0.943935	6.936631012
1267	7.14440718	307	0.83710	0.9826	1244.943	0.965485	7.020028702
1270	7.146772179	308	0.83983	0.9937	1262.048	0.987517	7.102025683
1272.4	7.14866016	309	0.84255	1.0050	1278.777	1.010049	7.184490024
1276.5	7.151877237	310	0.84528	1.0164	1297.454	1.033099	7.269274579
1296	7.167037877	311	0.84801	1.0280	1332.226	1.056685	7.367369767
1300	7.170119543	312	0.85074	1.0396	1351.513	1.080821	7.454236991
1309	7.177018766	313	0.85347	1.0514	1376.34	1.105535	7.546233946
1317	7.183111702	314	0.85620	1.0634	1400.512	1.130842	7.638598302
1330	7.192934221	315	0.85893	1.0755	1430.458	1.156769	7.736231321
1366	7.21964204	316	0.86166	1.0878	1485.952	1.183336	7.853616905
1540	7.339537695	317	0.86439	1.1003	1694.402	1.210575	8.075408666
1575	7.362010551	318	0.86712	1.1129	1752.787	1.238503	8.193037648
1651	7.409136444	319	0.86985	1.1257	1858.5	1.267159	8.34032851
1672	7.421775794	320	0.87258	1.1387	1903.855	1.296567	8.450947333
1683	7.428333194	321	0.87531	1.1519	1938.567	1.326764	8.556342693
1683	7.428333194	322	0.87804	1.1652	1961.091	1.357774	8.65575767
1703	7.440146681	323	0.88077	1.1788	2007.556	1.389651	8.770703352
1710	7.444248649	324	0.88350	1.1927	2039.435	1.422419	8.878399788

Table C-17. Sulfate Near Upgradient Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1724	7.452402451	325	0.88623	1.2067	2080.358	1.456134	8.99284331
1726	7.453561872	326	0.88896	1.2210	2107.44	1.490833	9.10077398
1751	7.467942332	327	0.89169	1.2355	2163.438	1.526569	9.226971377
1770	7.478734826	328	0.89442	1.2504	2213.133	1.563394	9.351091431
1788	7.488852956	329	0.89714	1.2655	2262.625	1.601365	9.476772451
1789	7.489412084	330	0.89987	1.2808	2291.417	1.640543	9.592714914
1790	7.489970899	331	0.90260	1.2965	2320.793	1.680996	9.710990289
1797	7.493873887	332	0.90533	1.3126	2358.662	1.722802	9.836125152
1803	7.497207223	333	0.90806	1.3289	2396.046	1.766033	9.963202312
1804	7.497761701	334	0.91079	1.3457	2427.556	1.810779	10.08937789
1804	7.497761701	335	0.91352	1.3628	2458.435	1.857138	10.21771475
1808	7.499976541	336	0.91625	1.3803	2495.564	1.905201	10.35214327
1816	7.504391559	337	0.91898	1.3983	2539.227	1.95511	10.49303506
1816	7.504391559	338	0.92171	1.4167	2572.681	2.006966	10.63127958
1818	7.505492275	339	0.92444	1.4356	2609.898	2.060911	10.77478987
1831	7.512617545	340	0.92717	1.4550	2664.164	2.117119	10.93110165
1836	7.515344571	341	0.92990	1.4750	2708.176	2.175747	11.08544321
1843.5	7.519421218	342	0.93263	1.4957	2757.248	2.236997	11.2464937
1844	7.519692404	343	0.93536	1.5169	2797.224	2.301084	11.40686633
1845.5	7.520505522	344	0.93809	1.5389	2840.068	2.36826	11.57341919
1848	7.521859252	345	0.94082	1.5617	2885.967	2.438815	11.74666656
1850	7.522940918	346	0.94355	1.5853	2932.736	2.513058	11.92583919
1866.5	7.531820298	347	0.94628	1.6098	3004.643	2.591372	12.12452691
1867	7.532088144	348	0.94901	1.6353	3053.086	2.674172	12.31714589
1869	7.533158807	349	0.95174	1.6619	3106.128	2.761977	12.51950479
1871	7.534228326	350	0.95446	1.6898	3161.574	2.855348	12.73116944
1873	7.535296702	351	0.95719	1.7190	3219.72	2.955022	12.95330875
1873.5	7.535563618	352	0.95992	1.7498	3278.258	3.061815	13.18576043
1877	7.537430037	353	0.96265	1.7823	3345.463	3.176757	13.43430724
1884	7.541152455	354	0.96538	1.8169	3423.018	3.301084	13.70143295
1885	7.5416831	355	0.96811	1.8538	3494.319	3.43639	13.98039724
1899	7.549082711	356	0.97084	1.8933	3595.402	3.584635	14.29277878
1904	7.551712215	357	0.97357	1.9361	3686.309	3.748432	14.62077069
1911	7.555381944	358	0.97630	1.9827	3788.989	3.931201	14.98025022
1916	7.557994959	359	0.97903	2.0341	3897.376	4.137649	15.37387838
1938	7.569411792	360	0.98176	2.0915	4053.382	4.374492	15.83164114
1955	7.578145472	361	0.98449	2.1568	4216.55	4.651799	16.34456705
1958	7.579678823	362	0.98722	2.2328	4371.841	4.985438	16.92397883
1959	7.580189418	363	0.98995	2.3244	4553.527	5.4029	17.61949688
1964	7.582738489	364	0.99268	2.4411	4794.253	5.958801	18.509962
1971	7.586296307	365	0.99541	2.6051	5134.62	6.786462	19.7629381
1975	7.588323677	366	0.99811	2.8956	5718.835	8.384574	21.97284756

Table C-18. Sulfate Near Upgradient Background Data Set, Distribution Summary

Parameter	Distribution Type (tested)	Coefficient of Variation	Studentized Range Test	Coefficient of Skewness (-1 to 1)	Shapiro-Francia Test	Filliben's Statistic	Histogram	Probability Plot	Number of Samples	Distribution Type (determined)
Sulfate	Normal	Pass	Fail	Pass	Fail	Fail		?	366	Nonparametric
Sulfate	Lognormal	Pass	NA	Pass	Fail	Fail	X	?	366	

NA - not applicable
? - Results of graphical test were inconclusive.

Table C-19. T_n Statistic Analysis for Sulfate Near Upgradient Background Data Set

Parameter	Distribution	Maximum Observation	Mean	Standard Deviation	T_n Statistic	N	Upper 5% Critical Value	Pass or Fail T_n Statistic
Sulfate	Lognormal	7.59	6.95	0.32	2.014	366	3.34+	Pass

N - number of samples

Table C-20. 95th Percentile for Near Upgradient Sulfate Background Data Set

Parameter	Distribution	Censored?	95th Percentile (mg/L)	Sample #
Sulfate	Nonparametric	No	1866.88	366

SD = standard deviation

Table C-21. Summary Table for Near Upgradient Sulfate Background Data Set

Parameter	Distribution	Mean	SD	95th Percentile (mg/L)	Range (normal)	Sample #
Sulfate	Nonparametric	1090.79	347.34	1866.88	1975 to 324	366

SD = standard deviation

Table C-22. Sulfate Far Upgradient Background Data Set
(data not corrected for non-detects or duplicates)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
0914	10-Jan-83	Sulfate	Homestake	None	140
0914	14-Mar-94	Sulfate	Energy Labs	None	689
0914	12-May-94	Sulfate	Energy Labs	None	812
0914	24-Jan-96	Sulfate	Energy Labs	None	633
0914	22-May-97	Sulfate	Energy Labs	None	693
0914	12-May-98	Sulfate	Energy Labs	None	725
0914	19-May-99	Sulfate	Energy Labs	None	732
0916	21-Feb-94	Sulfate	Energy Labs	None	47.6
0916	26-Apr-94	Sulfate	Energy Labs	None	46.1
0916	29-Jan-96	Sulfate	Energy Labs	None	43.3
0916	28-May-97	Sulfate	Energy Labs	None	48.2
0916	12-May-98	Sulfate	Energy Labs	None	44
0916	20-May-99	Sulfate	Energy Labs	None	43.8
0920	03-Nov-81	Sulfate	Homestake	None	1510
0920	30-Aug-82	Sulfate	Homestake	None	1432
0920	05-Jan-83	Sulfate	Homestake	None	1439
0920	31-Aug-83	Sulfate	Homestake	None	1441
0920	14-Dec-89	Sulfate	Homestake	None	1624
0920	09-May-90	Sulfate	Homestake	None	1588
0920	21-May-91	Sulfate	Homestake	None	1634
0920	06-May-92	Sulfate	Homestake	None	1665
0920	06-May-93	Sulfate	Homestake	None	1744
0920	28-Feb-94	Sulfate	Energy Labs	None	1519
0920	29-Apr-94	Sulfate	Energy Labs	None	1550
0920	29-Apr-94	Sulfate	Energy Labs	None	1581
0920	11-May-94	Sulfate	Energy Labs	None	1563
0920	10-May-95	Sulfate	Energy Labs	None	1426
0920	24-Jan-96	Sulfate	Energy Labs	None	1722
0920	20-May-96	Sulfate	Energy Labs	None	1578
0920	23-May-97	Sulfate	Energy Labs	None	1629
0920	12-May-98	Sulfate	Energy Labs	None	1400
0920	19-May-99	Sulfate	Energy Labs	None	1500
0921	28-Feb-94	Sulfate	Energy Labs	None	1494
0921	16-May-94	Sulfate	Energy Labs	None	1419
0921	24-Jan-96	Sulfate	Energy Labs	None	1590
0921	23-May-97	Sulfate	Energy Labs	None	1527
0921	12-May-98	Sulfate	Energy Labs	None	1400
0921	19-May-99	Sulfate	Energy Labs	None	1420
0922	03-Nov-81	Sulfate	Homestake	None	86
0922	04-Mar-94	Sulfate	Energy Labs	None	493
0922	16-May-94	Sulfate	Energy Labs	None	530
0922	24-Jan-96	Sulfate	Energy Labs	None	451
0922	23-May-97	Sulfate	Energy Labs	None	403
0922	12-May-98	Sulfate	Energy Labs	None	394
0922	19-May-99	Sulfate	Energy Labs	None	378
0950	28-Feb-94	Sulfate	Energy Labs	None	906
0950	11-May-94	Sulfate	Energy Labs	None	839
0950	25-Jan-96	Sulfate	Energy Labs	None	973

Table C-23. Sulfate Far Upgradient Background Data Set for Well 0914
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
10-Jan-83	Sulfate	140
14-Mar-94	Sulfate	689
12-May-94	Sulfate	812
24-Jan-96	Sulfate	633
22-May-97	Sulfate	693
12-May-98	Sulfate	725
19-May-99	Sulfate	732

Table C-24. Sulfate Far Upgradient Background Data Set for Well 0916
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Feb-94	Sulfate	47.6
26-Apr-94	Sulfate	46.1
29-Jan-96	Sulfate	43.3
28-May-97	Sulfate	48.2
12-May-98	Sulfate	44
20-May-99	Sulfate	43.8

Table C-25. Sulfate Far Upgradient Background Data Set for Well 0920
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Nov-81	Sulfate	1510
30-Aug-82	Sulfate	1432
05-Jan-83	Sulfate	1439
31-Aug-83	Sulfate	1441
14-Dec-89	Sulfate	1624
09-May-90	Sulfate	1588
21-May-91	Sulfate	1634
06-May-92	Sulfate	1665
06-May-93	Sulfate	1744
28-Feb-94	Sulfate	1519
29-Apr-94	Sulfate	1565.5
11-May-94	Sulfate	1563
10-May-95	Sulfate	1426
24-Jan-96	Sulfate	1722
20-May-96	Sulfate	1578
23-May-97	Sulfate	1629
12-May-98	Sulfate	1400
19-May-99	Sulfate	1500

Table C-26. Sulfate Far Upgradient Background Data Set for Well 0921
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
28-Feb-94	Sulfate	1494
16-May-94	Sulfate	1419
24-Jan-96	Sulfate	1590
23-May-97	Sulfate	1527
12-May-98	Sulfate	1400
19-May-99	Sulfate	1420

Table C-27. Sulfate Far Upgradient Background Data Set for Well 0922
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Nov-81	Sulfate	86
04-Mar-94	Sulfate	493
16-May-94	Sulfate	530
24-Jan-96	Sulfate	451
23-May-97	Sulfate	403
12-May-98	Sulfate	394
19-May-99	Sulfate	378

Table C-28. Sulfate Far Upgradient Background Data Set for Well 0950
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
28-Feb-94	Sulfate	906
11-May-94	Sulfate	839
25-Jan-96	Sulfate	973

Table C-29. Sulfate Far Upgradient Background Data Set Used in Statistical Analysis (all concentrations in mg/L)

Well ID					
Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
812	48.2	1744	1590	530	973
732	47.6	1722	1527	493	906
725	46.1	1665	1494	451	839
693	44	1634	1420	403	
689	43.8	1629	1419	394	
633	43.3	1624	1400	378	
140		1588		86	
		1578			
		1565.5			
		1563			
		1519			
		1510			
		1500			
		1441			
		1439			
		1432			
		1426			
		1400			

Table C-30. Sulfate Far Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
Sulfate	1744	1722	1.0	**Pass**

Table C-31. Sulfate Far Upgradient Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
lfate, nor	999.56	600.23	0.60	**Pass**
ate, logno	6.48	1.22	0.19	**Pass**

Table C-32. Sulfate Far Upgradient Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
lfate, nor	1744	43.3	600.23	5.35	3.83	2.83	**Fail**

W = range of values
S = standard deviation

Table C-33. Far Upgradient Background Sulfate Data Set, Coefficient of Skewness Analysis

Sulfate	Normal (xi-avg)^3
43.3	-874446386
43.8	-873075443
44	-872527467
46.1	-866787555
47.6	-862703068
48.2	-861072873
86	-762459341
140	-635088716
378	-240135961
394	-222064830
403	-212310149
451	-165075076
493	-129987781
530	-103534218
633	-49254830.4
689	-29953848
693	-28811292.3
725	-20698075.8
732	-19155002.4
812	-6598531.21
839	-4139454.9
906	-819075.566
973	-18744.4226
1400	64209590.1
1400	64209590.1
1419	73790021.7
1420	74319061.1
1426	77546482.5
1432	80866014.1
1439	84856947.1
1441	86020853.2
1494	120873390
1500	125327413
1510	132991635
1519	140151117
1527	146726895
1563	178868626
1565.5	181260158
1578	193538034
1588	203750217
1590	205834829
1624	243480483
1629	249376249
1634	255366430
1665	294658661
1722	377049566
1744	412555516

	Normal
standard deviation =	600.225353
mean =	999.564
count =	47
sum of (xi-avg)^3 =	-3773089939
1/n =	0.0212766
standard deviation cubed =	216243473
((n-1)/n)^(3/2) =	0.96825547
coef. of skewness =	-0.4
acceptable range -1 to 1	Pass

Table C-33. Far Upgradient Background Sulfate Data Set,
Coefficient of Skewness Analysis (continued)

Sulfate	Lognormal (xi-avg)^3
3.76815264	-19.9787946
3.77963382	-19.7262633
3.78418963	-19.6266498
3.83081295	-18.626434
3.86283276	-17.959571
3.87535902	-17.7030866
4.4543473	-8.33163933
4.94164242	-3.65203742
5.9348942	-0.16341287
5.97635091	-0.12898639
5.99893656	-0.11245059
6.11146734	-0.05071185
6.20050917	-0.02221207
6.27287701	-0.00909446
6.45047042	-3.0197E-05
6.53524127	0.00015426
6.54103	0.00020979
6.58617165	0.00114317
6.59578051	0.00148818
6.69950034	0.01034452
6.73221071	0.01573779
6.80903931	0.03510349
6.88038408	0.06341309
7.24422752	0.44352627
7.24422752	0.44352627
7.25770768	0.46746402
7.25841215	0.46873814
7.2626286	0.47641253
7.26682735	0.48413748
7.27170371	0.49321339
7.2730926	0.495819
7.30921237	0.56684493
7.31322039	0.57512046
7.31986493	0.58901649
7.3258075	0.60163252
7.33106031	0.61293306
7.35436233	0.6647712
7.35596054	0.66842994
7.3639135	0.68683617
7.37023064	0.70169495
7.3714893	0.70468084
7.39264752	0.75615002
7.39572161	0.76383025
7.39878628	0.77153853
7.4175804	0.81994656
7.45124168	0.91163213
7.4639366	0.94790968

Lognormal	
standard deviation =	1.21661068
mean =	6.482
count =	47
sum of (xi-avg)^3 =	-110.847976
1/n =	0.0212766
standard deviation cubed =	1.80075603
((n-1)/n)^(3/2) =	0.96825547
coef. of skewness =	-1.4
acceptable range -1 to 1	Fail

Table C-34. Sulfate Far Upgradient Background Data Set, Shapiro-Wilk Test of Normality Analysis

Sulfate - raw data				
X(i)	X(n-i+1)	X(n-i+1)-X(i)	An-i+1	Bi
43.3	1744	1700.7	0.3808	647.6266
43.8	1722	1678.2	0.262	439.6884
44	1665	1621	0.2291	371.3711
46.1	1634	1587.9	0.2052	325.8371
47.6	1629	1581.4	0.1859	293.9823
48.2	1624	1575.8	0.1695	267.0981
86	1590	1504	0.155	233.12
140	1588	1448	0.142	205.616
378	1578	1200	0.13	156
394	1565.5	1171.5	0.1189	139.2914
403	1563	1160	0.1085	125.86
451	1527	1076	0.0986	106.0936
493	1519	1026	0.0892	91.5192
530	1510	980	0.0801	78.498
633	1500	867	0.0713	61.8171
689	1494	805	0.0628	50.554
693	1441	748	0.0546	40.8408
725	1439	714	0.0465	33.201
732	1432	700	0.0385	26.95
812	1426	614	0.0307	18.8498
839	1420	581	0.0229	13.3049
906	1419	513	0.0153	7.8489
973	1400	427	0.0076	3.2452
1400	1400	0	0	0
1400	973	-427		
1419	906	-513		
1420	839	-581		
1426	812	-614		
1432	732	-700		
1439	725	-714		
1441	693	-748		
1494	689	-805		
1500	633	-867		
1510	530	-980		
1519	493	-1026		
1527	451	-1076		
1563	403	-1160		
1565.5	394	-1171.5		
1578	378	-1200		
1588	140	-1448		
1590	86	-1504		
1624	48.2	-1575.8		
1629	47.6	-1581.4		
1634	46.1	-1587.9		
1665	44	-1621		
1722	43.8	-1678.2		
1744	43.3	-1700.7		

3738.213 =sum of B
600.2254 = standard deviation
46 = count - 1

0.843221 = W statistic
0.946 is acceptable low value
Fails Shapiro-Wilk test

Table C-34. Sulfate Far Upgradient Background Data Set, Shapiro-Wilk Test of Normality Analysis (continued)

Sulfate - log data				
X(i)	X(n-i+1)	X(n-i+1)-X(i)	An-i+1	Bi
3.768153	7.463937	3.695783969	0.3808	1.407355
3.779634	7.451242	3.671607868	0.262	0.961961
3.78419	7.41758	3.633390768	0.2291	0.83241
3.830813	7.398786	3.567973325	0.2052	0.732148
3.862833	7.395722	3.532888847	0.1859	0.656764
3.875359	7.392648	3.5172885	0.1695	0.59618
4.454347	7.371489	2.917141999	0.155	0.452157
4.941642	7.370231	2.428588219	0.142	0.34486
5.934894	7.363914	1.429019306	0.13	0.185773
5.976351	7.355961	1.379609631	0.1189	0.164036
5.998937	7.354362	1.355425768	0.1085	0.147064
6.111467	7.33106	1.219592966	0.0986	0.120252
6.200509	7.325808	1.125298329	0.0892	0.100377
6.272877	7.319865	1.046987923	0.0801	0.083864
6.45047	7.31322	0.862749965	0.0713	0.061514
6.535241	7.309212	0.773971095	0.0628	0.048605
6.54103	7.273093	0.732062597	0.0546	0.039971
6.586172	7.271704	0.685532052	0.0465	0.031877
6.595781	7.266827	0.671046834	0.0385	0.025835
6.6995	7.262629	0.563128261	0.0307	0.017288
6.732211	7.258412	0.526201444	0.0229	0.01205
6.809039	7.257708	0.448668371	0.0153	0.006865
6.880384	7.244228	0.363843433	0.0076	0.002765
7.244228	7.244228	0	0	0
7.244228	6.880384	-0.363843433		
7.257708	6.809039	-0.448668371		
7.258412	6.732211	-0.526201444		
7.262629	6.6995	-0.563128261		
7.266827	6.595781	-0.671046834		
7.271704	6.586172	-0.685532052		
7.273093	6.54103	-0.732062597		
7.309212	6.535241	-0.773971095		
7.31322	6.45047	-0.862749965		
7.319865	6.272877	-1.046987923		
7.325808	6.200509	-1.125298329		
7.33106	6.111467	-1.219592966		
7.354362	5.998937	-1.355425768		
7.355961	5.976351	-1.379609631		
7.363914	5.934894	-1.429019306		
7.370231	4.941642	-2.428588219		
7.371489	4.454347	-2.917141999		
7.392648	3.875359	-3.5172885		
7.395722	3.862833	-3.532888847		
7.398786	3.830813	-3.567973325		
7.41758	3.78419	-3.633390768		
7.451242	3.779634	-3.671607868		
7.463937	3.768153	-3.695783969		

7.031969 =sum of B
1.216611 = standard deviation
46 = count - 1

0.726261 = W statistic
0.946 is acceptable low value
Fails Shapiro-Wilk test

Table C-35. Sulfate Far Upgradient Background Data Set, Fillibens Statistic Analysis

Sulfate	Ln(Sulfate)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
43.3	3.77	1	0.01464	-2.1797	-94.3816	4.75115	-8.213492
43.8	3.78	2	0.03552	-1.8052	-79.0674	3.258719	-6.8229661
44	3.78	3	0.05663	-1.5837	-69.6813	2.508	-5.9928953
46.1	3.83	4	0.07775	-1.4204	-65.48	2.017507	-5.4412473
47.6	3.86	5	0.09886	-1.2881	-61.3124	1.659141	-4.9756238
48.2	3.88	6	0.11997	-1.1751	-56.641	1.380916	-4.5540274
86	4.45	7	0.14109	-1.0755	-92.4893	1.156608	-4.7904591
140	4.94	8	0.16220	-0.9855	-137.965	0.971141	-4.8698146
378	5.93	9	0.18331	-0.9028	-341.266	0.815086	-5.3581488
394	5.98	10	0.20442	-0.8259	-325.415	0.682153	-4.9360223
403	6.00	11	0.22554	-0.7536	-303.713	0.567958	-4.5209788
451	6.11	12	0.24665	-0.6851	-308.969	0.469327	-4.1868111
493	6.20	13	0.26776	-0.6196	-305.462	0.383901	-3.8418219
530	6.27	14	0.28887	-0.5567	-295.04	0.309891	-3.4919787
633	6.45	15	0.30999	-0.4959	-313.898	0.245906	-3.1987204
689	6.54	16	0.33110	-0.4369	-301.011	0.190864	-2.8551183
693	6.54	17	0.35221	-0.3794	-262.894	0.143912	-2.4813859
725	6.59	18	0.37332	-0.3231	-234.22	0.104369	-2.1277392
732	6.60	19	0.39444	-0.2678	-196.01	0.071703	-1.7661748
812	6.70	20	0.41555	-0.2133	-173.193	0.045494	-1.4289527
839	6.73	21	0.43666	-0.1594	-133.768	0.02542	-1.0733691
906	6.81	22	0.45777	-0.1060	-96.0735	0.011245	-0.72204
973	6.88	23	0.47889	-0.0529	-51.5167	0.002803	-0.3642904
1400	7.24	24	0.50000	0.0000	0	0	0
1400	7.24	25	0.52111	0.0529	74.12473	0.002803	0.38355457
1419	7.26	26	0.54223	0.1060	150.4727	0.011245	0.76961747
1420	7.26	27	0.56334	0.1594	226.4017	0.02542	1.1572655
1426	7.26	28	0.58445	0.2133	304.155	0.045494	1.54906366
1432	7.27	29	0.60556	0.2678	383.4516	0.071703	1.94586328
1439	7.27	30	0.62668	0.3231	464.8857	0.104369	2.34920833
1441	7.27	31	0.64779	0.3794	546.6535	0.143912	2.75909903
1494	7.31	32	0.66890	0.4369	652.6992	0.190864	3.19325109
1500	7.31	33	0.69001	0.4959	743.8342	0.245906	3.62654906
1510	7.32	34	0.71113	0.5567	840.5852	0.309891	4.07481487
1519	7.33	35	0.73224	0.6196	941.1691	0.383901	4.53905431
1527	7.33	36	0.75335	0.6851	1046.109	0.469327	5.02232328
1563	7.35	37	0.77446	0.7536	1177.924	0.567958	5.54246843
1565.5	7.36	38	0.79558	0.8259	1292.987	0.682153	6.07547746
1578	7.36	39	0.81669	0.9028	1424.652	0.815086	6.64829785
1588	7.37	40	0.83780	0.9855	1564.918	0.971141	7.26310282
1590	7.37	41	0.85891	1.0755	1709.977	1.156608	7.92771992
1624	7.39	42	0.88003	1.1751	1908.401	1.380916	8.68727751
1629	7.40	43	0.90114	1.2881	2098.276	1.659141	9.5262546
1634	7.40	44	0.92225	1.4204	2320.917	2.017507	10.5091599
1665	7.42	45	0.94337	1.5837	2636.805	2.508	11.7469754
1722	7.45	46	0.96448	1.8052	3108.541	3.258719	13.4509246
1744	7.46	47	0.98536	2.1797	3801.42	4.75115	16.2692411

Normal

25119.892	=sum X(i)*M(i)
43.546	=sum M(i)^2
600.23	= standard deviation
6.5990	= square root of sum Mi^2
0.935	= Filliben's Statistic

Lognormal

47.002	=sum X(i)*M(i)
43.546	=sum M(i)^2
1.22	= standard deviation
6.5990	= square root of sum Mi^2
0.863	= Filliben's Statistic

.975 is acceptable value

Normal - Fail
Lognormal - Fail

Table C-36. Sulfate Far Upgradient Background Data Set, Distribution Summary

Parameter	Distribution Type (tested)	Coefficient of Variation	Studentized Range Test	Coefficient of Skewness (-1 to 1)	Shapiro-Wilk Test	Filliben's Statistic	Histogram	Probability Plot	Number of Samples	Distribution Type (determined)
Sulfate	Normal	Pass	Fail	Pass	Fail	Fail	?	?	47	Nonparametric
Sulfate	Lognormal	Pass	NA	Fail	Fail	Fail	?	?	47	

NA - not applicable
? - Results of graphical test were inconclusive.

Table C-37. T_n Statistic Analysis for Sulfate Far Upgradient Background Data Set

Parameter	Distribution	Maximum Observation	Mean	Standard Deviation	T_n Statistic	N	Upper 5% Critical Value	Pass or Fail T_n Statistic
Sulfate	Normal	1744	999.56	600.23	1.240	47	2.931	Pass

N - number of samples

Table C-38. 95th Percentile for Far Upgradient Sulfate Background Data Set

Parameter	Distribution	Censored?	95th Percentile (mg/L)	Sample #
Sulfate	Nonparametric	No	1655.70	47

Table C-39. Summary Table for Far Upgradient Sulfate Background Data Set

Parameter	Distribution	Mean	SD	95th Percentile (mg/L)	Range (normal)	Sample #
Sulfate	Nonparametric	999.56	600.23	1655.70	1744 to 43.3	47

SD = standard deviation

Table C-40. Sulfate Upgradient Background Data, Comparison Statistics Results

Comparison of Medians

Median of Sample 1: 1400.0
Median of Sample 2: 1052.25

Mann-Whitney (Wilcoxon) W test to compare medians

Null hypothesis: median1 = median2
Alt. Hhpothesis: median1 NE median2

Average rank of sample 1: 198.021
Average rank of sample 2: 208.153

w = 9023.0 P-value = 0.584278

The StatAdvisor

This option runs the Mann-Whitney W test to compare the medians of the two samples. This test is constructed by combining the two samples, sorting the data from the smallest to the largest, and comparing the average ranks of the two samples in the combined data. Since the P-value is greater than or equal to 0.05, there is not a statistically significant difference between the medians at the 95.0% confidence level.

Table C-41. Sulfate Combined Background Groundwater Data Set Used in Statistical Analysis
(all concentrations in mg/L)

Well ID														
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R	Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
1975	846	1152	1300	1317	975	885	1366	1226	812	48.2	1744	1590	530	973
1971	780	1012	1296	1250			1330	1180	732	47.6	1722	1527	493	906
1964	502	1008	1235.5	1243			1309	1130	725	46.1	1665	1494	451	839
1959	448	1004	1230	1200			1276.5	1120	693	44	1634	1420	403	
1958	422	1001	1226	1198			1272.4	1104	689	43.8	1629	1419	394	
1955	402	998	1200	1187			1270	1096	633	43.3	1624	1400	378	
1938	363	996	1197	1163.5			1267	1090	140		1588		86	
1916	362	993	1184	1163			1261	1082			1578			
1911	357	986	1166.5	1161			1250	1058			1565.5			
1904	340	984	1162	1149			1249.25	1051			1563			
1899	335	984	1160	1142			1246	1045			1519			
1885	328	980	1153	1141			1245	1030.5			1510			
1884	324	975	1150	1140.5			1241	1023			1500			
1877		974	1150	1130			1238	1015.5			1441			
1873.5		969	1148	1126			1234.5	1002			1439			
1873		968	1135.5	1115			1224	985			1432			
1871		967	1121.5	1112			1220.1	967			1426			
1869		954	1108	1105.5			1219	961			1400			
1867		946	1106	1102			1216	960						
1866.5		944.5	1103	1101			1214.3	955						
1850		940	1100	1100			1208	946						
1848		936	1100	1100			1208	942						
1845.5		932	1093	1093			1208	938						
1844		931	1090	1078			1202	937						
1843.5		930	1069	1070			1200	933						
1836		929	1055	1050			1196	928						
1831		927	974	1030			1196	921						
1818		919					1192	920						
1816		917					1191	910.5						
1816		914					1191	900.5						
1808		913					1188.5	885.5						
1804		913					1185	868						
1804		910					1184	864.5						
1803		908.5					1180	860						
1797		904.5					1177	853						
1790		904					1173	853						

Table C-41. Sulfate Combined Background Groundwater Data Set Used in Statistical Analysis (all concentrations in mg/L) (cont.)

Well ID														
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R	Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
1789		904					1171	850.75						
1788		902					1170.65	845						
1770		897					1167	838						
1751		896					1166	835						
1726		889					1165	835						
1724		885					1165	833.3						
1710		885					1163	831						
1703		884					1160	821.5						
1683		879					1160	820.5						
1683		873.5					1152.5	820.5						
1672		873					1148	816						
1651		872					1147.5	815.5						
1575		872					1146	814						
1540		868					1140	807.05						
		867.9					1136	807						
		867.5					1135	802.5						
		867					1134	801						
		865					1128	800						
		865					1124	790						
		864					1123	784						
		858					1122	779						
		857					1119	778						
		856					1114	770						
		855					1107	759						
		851					1106	759						
		851					1105	758.05						
		850					1104	750						
		846					1103	726.95						
		844					1102	726.15						
		843					1098	719.6						
		838					1097	714						
		837					1092.55	713.4						
		835					1091	710.5						
		835					1086	709.25						
		835					1072	706.85						
		833					1053.5	706						

Table C-41. Sulfate Combined Background Groundwater Data Set Used in Statistical Analysis
(all concentrations in mg/L) (continued)

Well ID														
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R	Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
		828					1014	679.4						
		827					961	672.9						
		826					853	672.6						
		823						651.7						
		820.4												
		818.1												
		816												
		811												
		807.5												
		804.5												
		804.1												
		801												
		800.15												
		797												
		796.5												
		790												
		790												
		778												
		773.7667												
		772.4												
		763.5												
		741.25												
		733.1												
		698.6												

Table C-42. Sulfate Combined Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
Sulfate	1975	1971	1.0	**Pass**

Table C-43. Sulfate Combined Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
Sulfate, normal	1080.41	384.64	0.36	**Pass**
Sulfate, lognormal	6.89	0.53	0.08	**Pass**

Table C-44. Sulfate Combined Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
Sulfate, normal	1975	43.3	384.64	6.94	5.47	5.02	**Fail**

W = range of values
S = standard deviation

Table C-45. Combined Background Sulfate Data Set, Coefficient of Skewness Analysis

Sulfate	Normal (xi-avg)^3
43.3	-1115513630
43.8	-1113901011
44	-1113256399
46.1	-1106502979
47.6	-1101695867
48.2	-1099776927
86	-983324551
140	-831672180
324	-432785155
328	-425955519
335	-414177233
340	-405898465
357	-378576908
362	-370781201
363	-369235015
378	-346555401
394	-323408503
402	-312231962
403	-310853275
422	-285423620
448	-252927975
451	-249345538
493	-202686462
502	-193512099
530	-166747653
633	-89560812.3
651.7	-78793764
672.6	-67822636.8
672.9	-67673068.5
679.4	-64486184.8
689	-59964864
693	-58145163.1
698.6	-55659977.4
706	-52485999.3
706.85	-52129343.3
709.25	-51131043.9
710.5	-50616181.8
713.4	-49435037.5
714	-49192979.8
719.6	-46971766.4
725	-44894190.2
726.15	-44459806.9
726.95	-44159285.6
732	-42293446
733.1	-41894123.2
741.25	-39013521.3
750	-36071221.9

Normal	
standard deviation =	384.6363336
mean =	1080.410
count =	413
sum of (xi-avg)^3 =	7527275746
1/n =	0.002421308
standard deviation cubed =	56905064.36
((n-1)/n)^(3/2) =	0.996370238
coef. of skewness =	0.3
acceptable range -1 to 1	Pass

Table C-45. Combined Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
758.05	-33498455.1
759	-33203165.9
759	-33203165.9
763.5	-31827988.4
770	-29909455.1
772.4	-29221052.2
773.7667	-28833807
778	-27656032.1
778	-27656032.1
779	-27382582.3
780	-27110940.9
784	-26042340.2
790	-24492673
790	-24492673
790	-24492673
796.5	-22884613.8
797	-22763919
800	-22048651.3
800.15	-22013286.8
801	-21813601.7
801	-21813601.7
802.5	-21464168.7
804.1	-21095575.1
804.5	-21004090.8
807	-20438299.6
807.05	-20427088.7
807.5	-20326374.7
811	-19554320.8
812	-19337382.3
814	-18908330.6
815.5	-18590740.4
816	-18485672.7
816	-18485672.7
818.1	-18048710.8
820.4	-17578095.2
820.5	-17557821.4
820.5	-17557821.4
821.5	-17355940
823	-17056028.7
826	-16466611.1
827	-16273199.5
828	-16081308.3
831	-15514697.6
833	-15144449.5
833.3	-15089425.6
835	-14780139.2
835	-14780139.2
835	-14780139.2
835	-14780139.2
835	-14780139.2
837	-14421718.7
838	-14244702.2
838	-14244702.2
839	-14069140.1
843	-13381316.4

Table C-45. Combined Background Sulfate Data Set,
Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
844	-13212936.6
845	-13045975.3
846	-12880426.5
846	-12880426.5
850	-12232235.8
850.75	-12113174.1
851	-12073659.2
851	-12073659.2
853	-11760629.6
853	-11760629.6
853	-11760629.6
855	-11453057.7
856	-11301303.5
857	-11150895.7
858	-11001828.5
860	-10707691.2
864	-10135238.4
864.5	-10065150.4
865	-9995386.31
865	-9995386.31
867	-9719553.57
867.5	-9651397.55
867.9	-9597102.71
868	-9583560.89
868	-9583560.89
872	-9052274.8
872	-9052274.8
873	-8922594.44
873.5	-8858221.3
879	-8170435.93
884	-7576924.89
885	-7461782.07
885	-7461782.07
885	-7461782.07
885.5	-7404650.7
889	-7012875.39
896	-6271273.5
897	-6169804.22
900.5	-5823288.51
902	-5678844.75
904	-5489996.2
904	-5489996.2
904.5	-5443447.48
906	-5305381.5
908.5	-5080493.84
910	-4948661.63
910.5	-4905229.79
913	-4691878.58
913	-4691878.58
914	-4608301.15
917	-4363535.65
919	-4205270.96
920	-4127594.3
921	-4050880.11
927	-3610470.66

Table C-45. Combined Background Sulfate Data Set,
Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
928	-3540325.7
929	-3471095.21
930	-3402773.17
931	-3335353.6
932	-3268830.49
933	-3203197.84
936	-3011582.67
937	-2949451.87
938	-2888181.53
940	-2768198.24
942	-2651584.8
944.5	-2510483.72
946	-2428275.46
946	-2428275.46
954	-2019982.95
955	-1972422.47
960	-1745786.98
961	-1702651.27
961	-1702651.27
967	-1458672.69
967	-1458672.69
968	-1420426.21
969	-1382854.2
973	-1239190.75
974	-1204901.05
974	-1204901.05
975	-1171249.8
975	-1171249.8
980	-1012360.51
984	-896129.389
984	-896129.389
985	-868532.764
986	-841508.602
993	-667864.398
996	-601432.383
998	-559686.684
1001	-500761.599
1002	-482080.828
1004	-446124.672
1008	-379665.904
1012	-320158.527
1014	-292891.611
1015.5	-273490.011
1023	-189221.356
1030	-128102.807
1030.5	-124328.687
1045	-44400.7142
1050	-28123.116
1051	-25438.9823
1053.5	-19487.5443
1055	-16407.0674
1058	-11254.9821
1069	-1485.57547
1070	-1128.21951
1072	-594.893538

Table C-45. Combined Background Sulfate Data Set,
Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
1078	-14.0032877
1082	4.017169786
1086	174.6458597
1090	881.8827821
1090	881.8827821
1091	1187.537049
1092.55	1789.042039
1093	1995.459626
1093	1995.459626
1096	3788.878602
1097	4565.760956
1098	5442.181324
1100	7517.636105
1100	7517.636105
1100	7517.636105
1100	7517.636105
1101	8728.670517
1102	10063.24294
1102	10063.24294
1103	11527.35339
1103	11527.35339
1104	13127.00184
1104	13127.00184
1105	14868.18831
1105.5	15793.7333
1106	16756.9128
1106	16756.9128
1107	18799.1753
1108	21000.97581
1112	31523.55801
1114	37898.0772
1115	41384.64381
1119	57466.29042
1120	62050.54711
1121.5	69374.19092
1122	71937.67453
1123	77252.54526
1124	82822.95401
1126	94754.38554
1128	107779.9691
1130	121947.7048
1130	121947.7048
1134	153901.6323
1135	162678.9592
1135.5	167190.0744
1136	171783.8241
1140	211598.6639
1140.5	216969.8742
1141	222431.2189
1142	233627.3119
1146	282167.0641
1147.5	301972.1905
1148	308774.1683
1148	308774.1683
1149	322683.0274

Table C-45. Combined Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
1150	337003.4245
1150	337003.4245
1152	366902.8328
1152.5	374644.2711
1153	382493.844
1160	504161.9866
1160	504161.9866
1160	504161.9866
1161	523405.3018
1162	543132.1551
1163	563348.5464
1163	563348.5464
1163.5	573642.1939
1165	605273.9431
1165	605273.9431
1166	626994.9485
1166.5	638047.6529
1167	649229.4918
1170.65	734839.4817
1171	743423.0455
1173	793757.0504
1177	901139.5164
1180	987740.515
1180	987740.515
1184	1111602.045
1184	1111602.045
1185	1144106.273
1187	1211003.342
1188.5	1262852.307
1191	1352519.937
1191	1352519.937
1192	1389542.931
1196	1544390.286
1196	1544390.286
1197	1584820.97
1198	1625951.192
1200	1710334.249
1200	1710334.249
1200	1710334.249
1202	1797587.459
1208	2077048.001
1208	2077048.001
1208	2077048.001
1214.3	2400165.587
1216	2492756.185
1219	2661905.131
1220.1	2725792.961
1224	2960530.802
1226	3085969.836
1226	3085969.836
1230	3347378.362
1234.5	3658647.492
1235.5	3730341.639
1238	3913661.236
1241	4141453.692

Table C-45. Combined Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xl-avg)^3
1243	4298123.019
1245	4458694.498
1246	4540458.544
1249.25	4813084.395
1250	4877510.11
1250	4877510.11
1261	5889503.804
1267	6496250.802
1270	6814657.065
1272.4	7076745.545
1276.5	7539874.912
1296	10020371.84
1300	10588531.01
1309	11944550.11
1317	13243029.01
1330	15548189.16
1366	23293110.11
1400	32642107.91
1400	32642107.91
1419	38816923.25
1420	39161868.91
1426	41274541.17
1432	43461860.81
1439	46109808.69
1441	46885639.07
1494	70747165.82
1500	73871064.96
1510	79279606.57
1519	84367502.53
1527	89068885.29
1540	97075754.22
1563	112391653.8
1565.5	114147413.9
1575	120986001
1578	123200952.4
1588	130779093.6
1590	132331076.3
1624	160625163.6
1629	165098403.8
1634	169653932.4
1651	185768345.2
1665	199780643.9
1672	207043568.3
1683	218808931.5
1683	218808931.5
1703	241326897.6
1710	249558737.1
1722	264102241.3
1724	266579772.2
1726	269072749.3
1744	292212539.6
1751	301557806.5
1770	327923272.8
1788	354278217.2
1789	355782390.4

Table C-45. Combined Background Sulfate Data Set, Coefficient of Skewness Analysis (cont.)

Sulfate	Normal (xi-avg)^3
1790	357290815.1
1797	367969335.3
1803	377289956.5
1804	378858532.8
1804	378858532.8
1808	385176313.2
1816	398021803.9
1816	398021803.9
1818	401277191.9
1831	422870849.1
1836	431378041.1
1843.5	444351573.1
1844	445225604.3
1845.5	447854573.2
1848	452259150.8
1850	455803533.3
1866.5	485753866.6
1867	486681361.7
1869	490403148.6
1871	494143861.7
1873	497903548.9
1873.5	498846441.1
1877	505480037.8
1884	518923136.6
1885	520862817.5
1899	548527970.7
1904	558640825.6
1911	573006535.1
1916	583417142.3
1938	630722932.8
1955	668979838.1
1958	675887642.8
1959	678200767.5
1964	689845583.8
1971	706371159.2
1975	715931771.1

Table C-45. Combined Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
3.768153	-30.4991924
3.779634	-30.1641987
3.78419	-30.0319536
3.830813	-28.7007341
3.862833	-27.8096497
3.875359	-27.4661369
4.454347	-14.4942596
4.941642	-7.42494689
5.780744	-1.37422626
5.793014	-1.32922693
5.814131	-1.25410207
5.828946	-1.20312197
5.877736	-1.04502687
5.891644	-1.00264452
5.894403	-0.9943769
5.934894	-0.87820164
5.976351	-0.76901345
5.996452	-0.71949861
5.998937	-0.71353049
6.045005	-0.60876447
6.104793	-0.48880426
6.111467	-0.47648495
6.200509	-0.33139654
6.2186	-0.30607958
6.272877	-0.23792223
6.45047	-0.08638285
6.479584	-0.07041461
6.511151	-0.05546943
6.511597	-0.05527508
6.52121	-0.05119495
6.535241	-0.04560784
6.54103	-0.04342674
6.549078	-0.04051144
6.559615	-0.03689601
6.560818	-0.03649739
6.564208	-0.03538992
6.565969	-0.03482355
6.570042	-0.03353661
6.570883	-0.03327501
6.578696	-0.03090872
6.586172	-0.02875197
6.587757	-0.02830802
6.588858	-0.02800231
6.595781	-0.0261305
6.597282	-0.02573582
6.608338	-0.02295158
6.620073	-0.02022408
6.630749	-0.01793856
6.632002	-0.01768231
6.632002	-0.01768231
6.637913	-0.01650577

Lognormal	
standard deviation =	0.526631588
mean =	6.893
count =	413
sum of (xi-avg)^3 =	-196.902172
1/n =	0.002421308
standard deviation cubed =	0.146056441
((n-1)/n)^(3/2) =	0.996370238
coef. of skewness =	-3.3
acceptable range -1 to 1	Fail

Table C-45. Combined Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
6.646391	-0.01491135
6.649503	-0.01435287
6.65127	-0.01404193
6.656727	-0.0131106
6.656727	-0.0131106
6.658011	-0.01289751
6.659294	-0.012687
6.664409	-0.01187044
6.672033	-0.0107196
6.672033	-0.0107196
6.672033	-0.0107196
6.680227	-0.00956834
6.680855	-0.00948374
6.684612	-0.00898765
6.684799	-0.00896336
6.685861	-0.00882662
6.685861	-0.00882662
6.687732	-0.00858906
6.689724	-0.00834089
6.690221	-0.00827967
6.693324	-0.00790454
6.693386	-0.00789716
6.693943	-0.00783103
6.698268	-0.00733043
6.6995	-0.00719181
6.70196	-0.00692033
6.703801	-0.00672168
6.704414	-0.0066564
6.704414	-0.0066564
6.706985	-0.00638727
6.709792	-0.00610169
6.709914	-0.00608949
6.709914	-0.00608949
6.711132	-0.00596845
6.712956	-0.00579018
6.716595	-0.00544529
6.717805	-0.00533371
6.719013	-0.0052238
6.72263	-0.00490391
6.725034	-0.00469869
6.725394	-0.00466845
6.727432	-0.00449974
6.727432	-0.00449974
6.727432	-0.00449974
6.727432	-0.00449974
6.727432	-0.00449974
6.729824	-0.00430695
6.731018	-0.00421282
6.731018	-0.00421282
6.732211	-0.00412018
6.736967	-0.00376424
6.738152	-0.00367883
6.739337	-0.00359482
6.740519	-0.00351219
6.740519	-0.00351219

Table C-45. Combined Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
6.745236	-0.00319527
6.746118	-0.00313821
6.746412	-0.00311936
6.746412	-0.00311936
6.74876	-0.00297141
6.74876	-0.00297141
6.74876	-0.00297141
6.751101	-0.00282855
6.75227	-0.002759
6.753438	-0.00269067
6.754604	-0.00262355
6.756932	-0.00249292
6.761573	-0.00224563
6.762151	-0.002216
6.76273	-0.00218664
6.76273	-0.00218664
6.765039	-0.00207199
6.765616	-0.002044
6.766077	-0.00202181
6.766192	-0.00201629
6.766192	-0.00201629
6.770789	-0.00180406
6.770789	-0.00180406
6.771936	-0.00175359
6.772508	-0.00172873
6.778785	-0.00147143
6.784457	-0.00126209
6.785588	-0.00122289
6.785588	-0.00122289
6.785588	-0.00122289
6.786152	-0.00120362
6.790097	-0.00107461
6.79794	-0.00084618
6.799056	-0.00081659
6.80295	-0.00071872
6.804615	-0.00067939
6.806829	-0.00062933
6.806829	-0.00062933
6.807382	-0.00061722
6.809039	-0.00058188
6.811795	-0.00052615
6.813445	-0.00049454
6.813994	-0.00048431
6.816736	-0.00043533
6.816736	-0.00043533
6.817831	-0.00041674
6.821107	-0.00036426
6.823286	-0.00033193
6.824374	-0.00031654
6.82546	-0.00030164
6.831954	-0.00022223
6.833032	-0.00021057
6.834109	-0.00019934
6.835185	-0.00018853
6.836259	-0.00017813

Table C-45. Combined Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
6.837333	-0.00016812
6.838405	-0.00015851
6.841615	-0.00013195
6.842683	-0.00012382
6.84375	-0.00011604
6.84588	-0.00010149
6.848005	-8.8238E-05
6.850656	-7.3398E-05
6.852243	-6.5365E-05
6.852243	-6.5365E-05
6.860664	-3.2344E-05
6.861711	-2.9257E-05
6.866933	-1.6761E-05
6.867974	-1.4797E-05
6.867974	-1.4797E-05
6.874198	-6.1551E-06
6.874198	-6.1551E-06
6.875232	-5.1713E-06
6.876265	-4.2992E-06
6.880384	-1.7896E-06
6.881411	-1.3727E-06
6.881411	-1.3727E-06
6.882437	-1.0265E-06
6.882437	-1.0265E-06
6.887553	-1.2294E-07
6.891626	-7.2668E-10
6.891626	-7.2668E-10
6.892642	1.5893E-12
6.893656	1.44832E-09
6.900731	5.52523E-07
6.903747	1.41334E-06
6.905753	2.31481E-06
6.908755	4.27506E-06
6.909753	5.11364E-06
6.911747	7.10264E-06
6.915723	1.24848E-05
6.919684	2.00326E-05
6.921658	2.47267E-05
6.923136	2.86848E-05
6.930495	5.47414E-05
6.937314	8.985E-05
6.937799	9.28025E-05
6.951772	0.000207972
6.956545	0.000262396
6.957497	0.000274276
6.959873	0.000305478
6.961296	0.000325251
6.964136	0.000367226
6.974479	0.00055044
6.975414	0.000569496
6.977281	0.00060886
6.982863	0.00073724
6.986566	0.000831685
6.990257	0.000933479
6.993933	0.001042839

Table C-45. Combined Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xl-avg)^3
6.993933	0.001042839
6.99485	0.001071386
6.99627	0.001116602
6.996681	0.001129951
6.996681	0.001129951
6.999422	0.001221527
7.000334	0.001253058
7.001246	0.001285099
7.003065	0.001350717
7.003065	0.001350717
7.003065	0.001350717
7.003065	0.001350717
7.003974	0.001384302
7.004882	0.001418407
7.004882	0.001418407
7.005789	0.001453037
7.005789	0.001453037
7.006695	0.001488193
7.006695	0.001488193
7.007601	0.001523879
7.008053	0.001541922
7.008505	0.001560098
7.008505	0.001560098
7.009409	0.001596854
7.010312	0.001634148
7.013915	0.00178877
7.015712	0.001869389
7.01661	0.001910536
7.020191	0.002080767
7.021084	0.002124749
7.022422	0.002191803
7.022868	0.002214443
7.023759	0.00226016
7.024649	0.00230646
7.026427	0.002400822
7.028201	0.002497548
7.029973	0.002596659
7.029973	0.002596659
7.033506	0.00280212
7.034388	0.002855008
7.034828	0.002881682
7.035269	0.002908509
7.038784	0.003128702
7.039222	0.003156927
7.03966	0.003185309
7.040536	0.003242544
7.044033	0.003477814
7.045341	0.003568671
7.045777	0.003599278
7.045777	0.003599278
7.046647	0.003660975
7.047517	0.003723319
7.047517	0.003723319
7.049255	0.003849954
7.049689	0.003882021

Table C-45. Combined Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
7.050123	0.003914251
7.056175	0.004382791
7.056175	0.004382791
7.056175	0.004382791
7.057037	0.004452389
7.057898	0.004522658
7.058758	0.004593602
7.058758	0.004593602
7.059188	0.004629327
7.060476	0.00473752
7.060476	0.00473752
7.061334	0.004810498
7.061763	0.004847243
7.062192	0.004884159
7.065314	0.005158839
7.065613	0.00518566
7.06732	0.005340554
7.070724	0.005658704
7.07327	0.005904692
7.07327	0.005904692
7.076654	0.006242603
7.076654	0.006242603
7.077498	0.006328865
7.079184	0.006503542
7.080447	0.006636441
7.082549	0.006861559
7.082549	0.006861559
7.083388	0.006952878
7.086738	0.007325459
7.086738	0.007325459
7.087574	0.007420439
7.088409	0.007516156
7.090077	0.007709809
7.090077	0.007709809
7.090077	0.007709809
7.091742	0.007906428
7.096721	0.008514212
7.096721	0.008514212
7.096721	0.008514212
7.101923	0.009181599
7.103322	0.00936686
7.105786	0.00969919
7.106688	0.009822777
7.109879	0.010268477
7.111512	0.010501614
7.111512	0.010501614
7.114769	0.010977239
7.118421	0.011527304
7.119231	0.011651706
7.121252	0.011966171
7.123673	0.012350073
7.125283	0.012609988
7.126891	0.012873098
7.127694	0.013005854
7.130299	0.013442854

Table C-45. Combined Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
7.130899	0.013544907
7.130899	0.013544907
7.13966	0.015094017
7.144407	0.015980584
7.146772	0.016434963
7.14866	0.016803815
7.151877	0.017444972
7.167038	0.020686568
7.17012	0.021391097
7.177019	0.023026002
7.183112	0.024537339
7.192934	0.027110656
7.219642	0.03500336
7.244228	0.043503745
7.244228	0.043503745
7.257708	0.048700196
7.258412	0.048982583
7.262629	0.050695585
7.266827	0.052440625
7.271704	0.054517009
7.273093	0.055118275
7.309212	0.072348775
7.31322	0.074456639
7.319865	0.0780406
7.325808	0.081341772
7.33106	0.084336168
7.339538	0.089322268
7.354362	0.098507039
7.355961	0.099533247
7.362011	0.103482486
7.363914	0.10474592
7.370231	0.109013748
7.371489	0.109877704
7.392648	0.125091957
7.395722	0.127412861
7.398786	0.129755052
7.409136	0.137877123
7.41758	0.144748989
7.421776	0.148246585
7.428333	0.15382545
7.428333	0.15382545
7.440147	0.164226047
7.444249	0.167944172
7.451242	0.174411476
7.452402	0.175500786
7.453562	0.176593351
7.463937	0.186572358
7.467942	0.190523675
7.478735	0.201446353
7.488853	0.212058476
7.489412	0.212655525
7.489971	0.213253359
7.493874	0.217460138
7.497207	0.221096429
7.497762	0.221705206

Table C-45. Combined Background Nitrate Data Set, Coefficient of Skewness Analysis (cont.)

Nitrate	Lognormal (xi-avg)^3
7.497762	0.221705206
7.499977	0.224148088
7.504392	0.229071088
7.504392	0.229071088
7.505492	0.230309573
7.512618	0.238434806
7.515345	0.241594407
7.519421	0.246369572
7.519692	0.246689439
7.520506	0.247650177
7.521859	0.249255201
7.522941	0.25054263
7.53182	0.261279087
7.532088	0.261607629
7.533159	0.262923666
7.534228	0.264242695
7.535297	0.265564711
7.535564	0.265895682
7.53743	0.268217694
7.541152	0.272889044
7.541683	0.273559347
7.549083	0.283021113
7.551712	0.286435236
7.555382	0.291245716
7.557995	0.294703625
7.569412	0.31013318
7.578145	0.322293422
7.579679	0.324460633
7.580189	0.32518445
7.582738	0.328814104
7.586296	0.333925137
7.588324	0.336861133

Table C-46. Sulfate Combined Background Data Set, Shapiro-Francia Test of Normality Analysis

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
43.3	1	0.002415	-2.81812	-122.024765	7.941822
43.8	2	0.004831	-2.58769	-113.3410115	6.696162
44	3	0.007246	-2.44481	-107.5717591	5.977109
46.1	4	0.009662	-2.33922	-107.8380592	5.471952
47.6	5	0.012077	-2.25466	-107.3216044	5.083472
48.2	6	0.014493	-2.18368	-105.253308	4.768452
86	7	0.016908	-2.12225	-182.5136133	4.503951
140	8	0.019324	-2.06792	-289.5085345	4.276285
324	9	0.021739	-2.01909	-654.1842959	4.076714
328	10	0.024155	-1.97464	-647.6820272	3.899204
335	11	0.02657	-1.93378	-647.8152045	3.739492
340	12	0.028986	-1.89591	-644.6109182	3.594492
357	13	0.031401	-1.86059	-664.2305198	3.461794
362	14	0.033816	-1.82745	-661.5360689	3.339565
363	15	0.036232	-1.79619	-652.0180295	3.226309
378	16	0.038647	-1.7666	-667.7757483	3.120884
394	17	0.041063	-1.73848	-684.9614874	3.022316
402	18	0.043478	-1.71168	-688.0946057	2.929842
403	19	0.045894	-1.68604	-679.4757383	2.842744
422	20	0.048309	-1.66147	-701.1420348	2.760496
448	21	0.050725	-1.63787	-733.7649004	2.682612
451	22	0.05314	-1.61514	-728.4280537	2.608677
493	23	0.055556	-1.59322	-785.4557043	2.538339
502	24	0.057971	-1.57203	-789.1612222	2.471292
530	25	0.060386	-1.55154	-822.3155874	2.407273
633	26	0.062802	-1.53167	-969.5477002	2.346016
651.7	27	0.065217	-1.51239	-985.6243314	2.287322
672.6	28	0.067633	-1.49365	-1004.631717	2.231002
672.9	29	0.070048	-1.47543	-992.8184131	2.176901
679.4	30	0.072464	-1.45768	-990.3501959	2.124841
689	31	0.074879	-1.44038	-992.4252299	2.074709
693	32	0.077295	-1.42351	-986.4903518	2.026372
698.6	33	0.07971	-1.40702	-982.9474438	1.979718
706	34	0.082126	-1.39092	-981.9861725	1.934645
706.85	35	0.084541	-1.37516	-972.0322253	1.891067
709.25	36	0.086957	-1.35974	-964.3940206	1.848887
710.5	37	0.089372	-1.34463	-955.361993	1.808039
713.4	38	0.091787	-1.32983	-948.69842	1.768439
714	39	0.094203	-1.31531	-939.1322237	1.730044
719.6	40	0.096618	-1.30106	-936.2456567	1.692768
725	41	0.099034	-1.28708	-933.1300816	1.656565
726.15	42	0.101449	-1.27334	-924.6344302	1.62139
726.95	43	0.103865	-1.25983	-915.8365696	1.587183
732	44	0.10628	-1.24656	-912.4787812	1.553901
733.1	45	0.108696	-1.2335	-904.2754543	1.521511
741.25	46	0.111111	-1.22064	-904.8008337	1.489967
750	47	0.113527	-1.20799	-905.9897366	1.459231
758.05	48	0.115942	-1.19552	-906.2634939	1.429267
759	49	0.118357	-1.18324	-898.0783741	1.400054
759	50	0.120773	-1.17113	-888.8886691	1.371549
763.5	51	0.123188	-1.1592	-885.0465065	1.343736
770	52	0.125604	-1.14742	-883.5140079	1.316574
772.4	53	0.128019	-1.1358	-877.2952169	1.290051
773.76667	54	0.130435	-1.12434	-869.9751225	1.264136
778	55	0.13285	-1.11302	-865.9289006	1.238812
778	56	0.135266	-1.10184	-857.2308889	1.21405
779	57	0.137681	-1.0908	-849.7315821	1.18984
780	58	0.140097	-1.07989	-842.3112831	1.166154
784	59	0.142512	-1.0691	-838.1759108	1.142979

Sulfate - normal
23191825249 = (sum of Mi*Xi)^2
412 = count -1
147945.1091 = standard deviation ^2
402.6805038 = sum of Mi^2

0.94 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
790	60	0.144928	-1.05844	-836.1678965	1.120296
790	61	0.147343	-1.0479	-827.8386758	1.098088
790	62	0.149758	-1.03747	-819.601064	1.076343
796.5	63	0.152174	-1.02715	-818.1279679	1.055045
797	64	0.154589	-1.01695	-810.5067218	1.034181
800	65	0.157005	-1.00684	-805.4757927	1.013736
800.15	66	0.15942	-0.99684	-797.6235847	0.993695
801	67	0.161836	-0.98694	-790.5392999	0.974051
801	68	0.164251	-0.97713	-782.684192	0.954791
802.5	69	0.166667	-0.96742	-776.3548865	0.935902
804.1	70	0.169082	-0.9578	-770.165344	0.917377
804.5	71	0.171498	-0.94826	-762.8785386	0.899205
807	72	0.173913	-0.93881	-757.6233315	0.881373
807.05	73	0.176329	-0.92945	-750.109993	0.863871
807.5	74	0.178744	-0.92016	-743.0316828	0.8467
811	75	0.181159	-0.91095	-738.7840515	0.829838
812	76	0.183575	-0.90183	-732.2822148	0.813289
814	77	0.18599	-0.89277	-726.7140427	0.797037
815.5	78	0.188406	-0.88379	-720.7271244	0.781077
816	79	0.190821	-0.87487	-713.8978253	0.765406
816	80	0.193237	-0.86603	-706.6804392	0.750008
818.1	81	0.195652	-0.85725	-701.3189461	0.734883
820.4	82	0.198068	-0.84854	-696.1443823	0.720025
820.5	83	0.200483	-0.8399	-689.1352888	0.705427
820.5	84	0.202899	-0.83131	-682.0917122	0.69108
821.5	85	0.205314	-0.82279	-675.920362	0.67698
823	86	0.207729	-0.81433	-670.18962	0.663125
826	87	0.210145	-0.80592	-665.6892356	0.649506
827	88	0.21256	-0.79757	-659.5885179	0.636114
828	89	0.214976	-0.78927	-653.5181637	0.622952
831	90	0.217391	-0.78103	-649.0385249	0.610013
833	91	0.219807	-0.77285	-643.7802153	0.59729
833.3	92	0.222222	-0.76471	-637.2328151	0.584781
835	93	0.224638	-0.75662	-631.7805571	0.572479
835	94	0.227053	-0.74859	-625.0700608	0.560382
835	95	0.229469	-0.7406	-618.3984851	0.548484
835	96	0.231884	-0.73266	-611.7677287	0.536785
835	97	0.2343	-0.72476	-605.1749438	0.525278
837	98	0.236715	-0.71691	-600.0529993	0.513959
838	99	0.23913	-0.7091	-594.2277471	0.502826
838	100	0.241546	-0.70134	-587.7217882	0.491876
839	101	0.243961	-0.69362	-581.944696	0.481105
843	102	0.246377	-0.68594	-578.2443486	0.470509
844	103	0.248792	-0.67829	-572.4804123	0.460083
845	104	0.251208	-0.67069	-566.7357755	0.449829
846	105	0.253623	-0.66313	-561.0086373	0.439742
846	106	0.256039	-0.65561	-554.6435068	0.429821
850	107	0.258454	-0.64812	-550.9006655	0.420057
850.75	108	0.26087	-0.64067	-545.0468188	0.410453
851	109	0.263285	-0.63325	-538.8961461	0.401006
851	110	0.2657	-0.62587	-532.614331	0.391712
853	111	0.268116	-0.61852	-527.5976127	0.382567
853	112	0.270531	-0.61121	-521.3592192	0.373573
853	113	0.272947	-0.60392	-515.1479786	0.364725
855	114	0.275362	-0.59667	-510.1562692	0.35602
856	115	0.277778	-0.58945	-504.5733815	0.347457
857	116	0.280193	-0.58227	-499.0033358	0.339036
858	117	0.282609	-0.57511	-493.4442768	0.330751
860	118	0.285024	-0.56798	-488.4623195	0.322601
864	119	0.28744	-0.56088	-484.6010415	0.314587
864.5	120	0.289855	-0.55381	-478.766359	0.306702
865	121	0.292271	-0.54676	-472.9501711	0.29895
865	122	0.294686	-0.53975	-466.880681	0.291326
867	123	0.297101	-0.53275	-461.8983348	0.283828

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
867.5	124	0.299517	-0.52579	-456.1230469	0.276455
867.9	125	0.301932	-0.51885	-450.310619	0.269206
868	126	0.304348	-0.51194	-444.3607759	0.262079
868	127	0.306763	-0.50505	-438.3797705	0.255071
872	128	0.309179	-0.49818	-434.4131958	0.248184
872	129	0.311594	-0.49134	-428.4452734	0.241411
873	130	0.31401	-0.48452	-422.9836782	0.234757
873.5	131	0.316425	-0.47772	-417.2874708	0.228215
879	132	0.318841	-0.47094	-413.9590533	0.221787
884	133	0.321256	-0.46419	-410.3441188	0.215473
885	134	0.323671	-0.45746	-404.8490098	0.209266
885	135	0.326087	-0.45074	-398.908827	0.203171
885	136	0.328502	-0.44405	-392.9857485	0.197182
885.5	137	0.330918	-0.43738	-387.3004766	0.191302
889	138	0.333333	-0.43073	-382.9168327	0.185526
896	139	0.335749	-0.42409	-379.9871774	0.179855
897	140	0.338164	-0.41748	-374.478243	0.174288
900.5	141	0.34058	-0.41088	-369.9996205	0.168824
902	142	0.342995	-0.4043	-364.680609	0.16346
904	143	0.345411	-0.39774	-359.5571616	0.158197
904	144	0.347826	-0.3912	-353.6415534	0.153035
904.5	145	0.350242	-0.38467	-347.9326676	0.14797
906	146	0.352657	-0.37816	-342.6098147	0.143002
908.5	147	0.355072	-0.37166	-337.6545629	0.138132
910	148	0.357488	-0.36518	-332.3151191	0.133357
910.5	149	0.359903	-0.35872	-326.6120251	0.128678
913	150	0.362319	-0.35227	-321.6204664	0.124093
913	151	0.364734	-0.34583	-315.7456081	0.119601
914	152	0.36715	-0.33941	-310.2226174	0.115201
917	153	0.369565	-0.333	-305.3652767	0.110892
919	154	0.371981	-0.32661	-300.1564767	0.106675
920	155	0.374396	-0.32023	-294.6144377	0.102549
921	156	0.376812	-0.31387	-289.0701114	0.098512
927	157	0.379227	-0.30751	-285.0631859	0.094563
928	158	0.381643	-0.30117	-279.4858301	0.090703
929	159	0.384058	-0.29484	-273.906353	0.086931
930	160	0.386473	-0.28852	-268.3258458	0.083245
931	161	0.388889	-0.28222	-262.7432877	0.079646
932	162	0.391304	-0.27592	-257.1587129	0.076133
933	163	0.39372	-0.26964	-251.5710946	0.072704
936	164	0.396135	-0.26336	-246.5082525	0.06936
937	165	0.398551	-0.2571	-240.9031777	0.066101
938	166	0.400966	-0.25085	-235.2951742	0.062925
940	167	0.403382	-0.2446	-229.9278094	0.059831
942	168	0.405797	-0.23837	-224.5440373	0.05682
944.5	169	0.408213	-0.23215	-219.2610583	0.053891
946	170	0.410628	-0.22593	-213.7296406	0.051044
946	171	0.413043	-0.21972	-207.8575335	0.048278
954	172	0.415459	-0.21352	-203.702225	0.045593
955	173	0.417874	-0.20733	-198.0040622	0.042987
960	174	0.42029	-0.20115	-193.1057341	0.040462
961	175	0.422705	-0.19498	-187.3733527	0.038016
961	176	0.425121	-0.18881	-181.4463747	0.035649
967	177	0.427536	-0.18265	-176.6229468	0.033361
967	178	0.429952	-0.1765	-170.6721559	0.031151
968	179	0.432367	-0.17035	-164.8994112	0.029019
969	180	0.434783	-0.16421	-159.1198827	0.026965
973	181	0.437198	-0.15808	-153.8089214	0.024988
974	182	0.439614	-0.15195	-147.9985985	0.023089
974	183	0.442029	-0.14583	-142.0357353	0.021266
975	184	0.444444	-0.13971	-136.217011	0.019519
975	185	0.44686	-0.1336	-130.2591102	0.017849
980	186	0.449275	-0.12749	-124.9431079	0.016254
984	187	0.451691	-0.12139	-119.4480137	0.014736

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
984	188	0.454106	-0.11529	-113.448541	0.013293
985	189	0.456522	-0.1092	-107.5627438	0.011925
986	190	0.458937	-0.10311	-101.6681244	0.010632
993	191	0.461353	-0.09703	-96.34684943	0.009414
996	192	0.463768	-0.09094	-90.58114301	0.008271
998	193	0.466184	-0.08487	-84.69748991	0.007202
1001	194	0.468599	-0.07879	-78.87059155	0.006208
1002	195	0.471014	-0.07272	-72.86522532	0.005288
1004	196	0.47343	-0.06665	-66.91664566	0.004442
1008	197	0.475845	-0.06058	-61.06838555	0.00367
1012	198	0.478261	-0.05452	-55.17274531	0.002972
1014	199	0.480676	-0.04846	-49.13398243	0.002348
1015.5	200	0.483092	-0.04239	-43.05208051	0.001797
1023	201	0.485507	-0.03634	-37.17116556	0.00132
1030	202	0.487923	-0.03028	-31.18539098	0.000917
1030.5	203	0.490338	-0.02422	-24.95972069	0.000587
1045	204	0.492754	-0.01816	-18.98230266	0.00033
1050	205	0.495169	-0.01211	-12.71541805	0.000147
1051	206	0.497585	-0.00605	-6.363763987	3.67E-05
1053.5	207	0.5	0	0	0
1055	208	0.502415	0.006055	6.387983831	3.67E-05
1058	209	0.504831	0.01211	12.81229743	0.000147
1069	210	0.507246	0.018165	19.41825985	0.00033
1070	211	0.509662	0.024221	25.91644943	0.000587
1072	212	0.512077	0.030277	32.45702828	0.000917
1078	213	0.514493	0.036335	39.16961532	0.00132
1082	214	0.516908	0.042395	45.87134526	0.001797
1086	215	0.519324	0.048456	52.62278592	0.002348
1090	216	0.521739	0.054519	59.4251901	0.002972
1090	217	0.524155	0.060584	66.03625025	0.00367
1091	218	0.52657	0.06665	72.71519962	0.004442
1092.55	219	0.528986	0.07272	79.45000192	0.005288
1093	220	0.531401	0.078792	86.11943713	0.006208
1093	221	0.533816	0.084867	92.75987622	0.007202
1096	222	0.536232	0.090945	99.67563528	0.008271
1097	223	0.538647	0.097026	106.4375567	0.009414
1098	224	0.541063	0.103112	113.2166335	0.010632
1100	225	0.543478	0.109201	120.1208306	0.011925
1100	226	0.545894	0.115293	126.822556	0.013293
1100	227	0.548309	0.12139	133.5292836	0.014736
1100	228	0.550725	0.127493	140.242264	0.016254
1101	229	0.55314	0.133599	147.0925952	0.017849
1102	230	0.555556	0.13971	153.9601499	0.019519
1102	231	0.557971	0.145827	160.7016225	0.021266
1103	232	0.560386	0.151949	167.6000556	0.023089
1103	233	0.562802	0.158077	174.3589314	0.024988
1104	234	0.565217	0.16421	181.2882874	0.026965
1104	235	0.567633	0.170351	188.067097	0.029019
1105	236	0.570048	0.176497	195.0286787	0.031151
1105.5	237	0.572464	0.18265	201.9200286	0.033361
1106	238	0.574879	0.18881	208.8238193	0.035649
1106	239	0.577295	0.194977	215.6450864	0.038016
1107	240	0.57971	0.201152	222.6750496	0.040462
1108	241	0.582126	0.207334	229.726179	0.042987
1112	242	0.584541	0.213524	237.4390715	0.045593
1114	243	0.586957	0.219723	244.7709221	0.048278
1115	244	0.589372	0.22593	251.9117857	0.051044
1119	245	0.591787	0.232145	259.7703804	0.053891
1120	246	0.594203	0.238369	266.9738024	0.05682
1121.5	247	0.596618	0.244604	274.323445	0.059831
1122	248	0.599034	0.250848	281.4511572	0.062925
1123	249	0.601449	0.257101	288.7238725	0.066101
1124	250	0.603865	0.263364	296.0205939	0.06936
1126	251	0.60628	0.269637	303.6109888	0.072704

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1128	252	0.608696	0.275921	311.2393006	0.076133
1130	253	0.611111	0.282216	318.9043127	0.079646
1130	254	0.613527	0.288522	326.0303288	0.083245
1134	255	0.615942	0.29484	334.3485514	0.086931
1135	256	0.618357	0.30117	341.8280357	0.090703
1135.5	257	0.620773	0.307512	349.1793393	0.094563
1136	258	0.623188	0.313865	356.5511906	0.098512
1140	259	0.625604	0.320233	365.0657163	0.102549
1140.5	260	0.628019	0.326612	372.5010464	0.106675
1141	261	0.630435	0.333005	379.9583214	0.110892
1142	262	0.63285	0.339412	387.6085657	0.115201
1146	263	0.635266	0.345833	396.3247173	0.119601
1147.5	264	0.637681	0.352268	404.2272565	0.124093
1148	265	0.640097	0.358717	411.8073639	0.128678
1148	266	0.642512	0.365181	419.2283041	0.133357
1149	267	0.644928	0.371662	427.0391776	0.138132
1150	268	0.647343	0.378157	434.8800076	0.143002
1150	269	0.649758	0.384669	442.3687869	0.14797
1152	270	0.652174	0.391196	450.6582627	0.153035
1152.5	271	0.654589	0.39774	458.395607	0.158197
1153	272	0.657005	0.404302	466.160468	0.16346
1160	273	0.65942	0.410882	476.6236088	0.168824
1160	274	0.661836	0.417479	484.2750968	0.174288
1160	275	0.664251	0.424093	491.9476851	0.179855
1161	276	0.666667	0.430728	500.0747387	0.185526
1162	277	0.669082	0.437381	508.2361986	0.191302
1163	278	0.671498	0.444052	516.4321192	0.197182
1163	279	0.673913	0.450744	524.2157806	0.203171
1163.5	280	0.676329	0.457457	532.2506473	0.209266
1165	281	0.678744	0.46419	540.7815593	0.215473
1165	282	0.681159	0.470943	548.6488021	0.221787
1166	283	0.683575	0.477719	557.0202529	0.228215
1166.5	284	0.68599	0.484517	565.189531	0.234757
1167	285	0.688406	0.491336	573.3894886	0.241411
1170.65	286	0.690821	0.49818	583.1947335	0.248184
1171	287	0.693237	0.505046	591.4086535	0.255071
1173	288	0.695652	0.511936	600.5013711	0.262079
1177	289	0.698068	0.518851	610.6874048	0.269206
1180	290	0.700483	0.52579	620.4325018	0.276455
1180	291	0.702899	0.532755	628.6505595	0.283828
1184	292	0.705314	0.539746	639.0597991	0.291326
1184	293	0.707729	0.546763	647.3676331	0.29895
1185	294	0.710145	0.553807	656.2615795	0.306702
1187	295	0.71256	0.560881	665.7655513	0.314587
1188.5	296	0.714976	0.567979	675.0435659	0.322601
1191	297	0.717391	0.57511	684.9558667	0.330751
1191	298	0.719807	0.582268	693.4807152	0.339036
1192	299	0.722222	0.589455	702.6302228	0.347457
1196	300	0.724638	0.596674	713.6221029	0.35602
1196	301	0.727053	0.603925	722.2942349	0.364725
1197	302	0.729469	0.611207	731.6142853	0.373573
1198	303	0.731884	0.61852	740.9870341	0.382567
1200	304	0.7343	0.625869	751.0425348	0.391712
1200	305	0.736715	0.63325	759.9005585	0.401006
1200	306	0.73913	0.640666	768.7995094	0.410453
1202	307	0.741546	0.648118	779.0383529	0.420057
1208	308	0.743961	0.655607	791.9732343	0.429821
1208	309	0.746377	0.663131	801.0619786	0.439742
1208	310	0.748792	0.670693	810.1974163	0.449829
1214.3	311	0.751208	0.678294	823.6528017	0.460083
1216	312	0.753623	0.685936	834.0986096	0.470509
1219	313	0.756039	0.693617	845.519171	0.481105
1220.1	314	0.758454	0.701339	855.7032861	0.491876
1224	315	0.76087	0.709102	867.941244	0.502826

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1226	316	0.763285	0.716909	878.9306776	0.513959
1226	317	0.7657	0.72476	888.5562647	0.525278
1230	318	0.768116	0.732656	901.166834	0.536785
1234.5	319	0.770531	0.740597	914.2669819	0.548484
1235.5	320	0.772947	0.748587	924.8791139	0.560382
1238	321	0.775362	0.756623	936.6997961	0.572479
1241	322	0.777778	0.76471	949.0050684	0.584781
1243	323	0.780193	0.772845	960.6468279	0.59729
1245	324	0.782609	0.781033	972.3862377	0.610013
1246	325	0.785024	0.789273	983.4343382	0.622952
1249.25	326	0.78744	0.797568	996.3614946	0.636114
1250	327	0.789855	0.805919	1007.398964	0.649506
1250	328	0.792271	0.814325	1017.90647	0.663125
1261	329	0.794686	0.822788	1037.535699	0.67698
1267	330	0.797101	0.831312	1053.272638	0.69108
1270	331	0.799517	0.839897	1066.668881	0.705427
1272.4	332	0.801932	0.848543	1079.685656	0.720025
1276.5	333	0.804348	0.857253	1094.283871	0.734883
1296	334	0.806763	0.86603	1122.374815	0.750008
1300	335	0.809179	0.874875	1137.337222	0.765406
1309	336	0.811594	0.883786	1156.875298	0.781077
1317	337	0.81401	0.892769	1175.776897	0.797037
1330	338	0.816425	0.901825	1199.427766	0.813289
1366	339	0.818841	0.910954	1244.363766	0.829838
1400	340	0.821256	0.920163	1288.228304	0.8467
1400	341	0.823671	0.929447	1301.225439	0.863871
1419	342	0.826087	0.938815	1332.177828	0.881373
1420	343	0.828502	0.948264	1346.535146	0.899205
1426	344	0.830918	0.957798	1365.819899	0.917377
1432	345	0.833333	0.96742	1385.34604	0.935902
1439	346	0.835749	0.977134	1406.095571	0.954791
1441	347	0.838164	0.98694	1422.181188	0.974051
1494	348	0.84058	0.996843	1489.282804	0.993695
1500	349	0.842995	1.006845	1510.267111	1.013736
1510	350	0.845411	1.016947	1535.5899	1.034181
1519	351	0.847826	1.027154	1560.246558	1.055045
1527	352	0.850242	1.03747	1584.216234	1.076343
1540	353	0.852657	1.047897	1613.761469	1.098088
1563	354	0.855072	1.05844	1654.342307	1.120296
1565.5	355	0.857488	1.069102	1673.679067	1.142979
1575	356	0.859903	1.079886	1700.82086	1.166154
1578	357	0.862319	1.090798	1721.279123	1.18984
1588	358	0.864734	1.101839	1749.720632	1.21405
1590	359	0.86715	1.113019	1769.700452	1.238812
1624	360	0.869565	1.124338	1825.92461	1.264136
1629	361	0.871981	1.135804	1850.225153	1.290051
1634	362	0.874396	1.147421	1874.88557	1.316574
1651	363	0.876812	1.159196	1913.833376	1.343736
1665	364	0.879227	1.171131	1949.933642	1.371549
1672	365	0.881643	1.183239	1978.375549	1.400054
1683	366	0.884058	1.195519	2012.059178	1.429267
1683	367	0.886473	1.207986	2033.040969	1.459231
1703	368	0.888889	1.220642	2078.753214	1.489967
1710	369	0.891304	1.233495	2109.277079	1.521511
1722	370	0.89372	1.246556	2146.568936	1.553901
1724	371	0.896135	1.259834	2171.954393	1.587183
1726	372	0.898551	1.273338	2197.781487	1.62139
1744	373	0.900966	1.287076	2244.6605	1.656565
1751	374	0.903382	1.301064	2278.16307	1.692768
1770	375	0.905797	1.315311	2328.100891	1.730044
1788	376	0.908213	1.329827	2377.73027	1.768439
1789	377	0.910628	1.344633	2405.549058	1.808039
1790	378	0.913043	1.359738	2433.930626	1.848887
1797	379	0.915459	1.375161	2471.163484	1.891067

Table C-46. Sulfate Combined Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1803	380	0.917874	1.390915	2507.820211	1.934645
1804	381	0.92029	1.407025	2538.272529	1.979718
1804	382	0.922705	1.423507	2568.00663	2.026372
1808	383	0.925121	1.440385	2604.215988	2.074709
1816	384	0.927536	1.457684	2647.153306	2.124841
1816	385	0.929952	1.475432	2679.385107	2.176901
1818	386	0.932367	1.493654	2715.46307	2.231002
1831	387	0.934783	1.51239	2769.185439	2.287322
1836	388	0.937198	1.531671	2812.147832	2.346016
1843.5	389	0.939614	1.551539	2860.261859	2.407273
1844	390	0.942029	1.572034	2898.831262	2.471292
1845.5	391	0.944444	1.593216	2940.280938	2.538339
1848	392	0.94686	1.61514	2984.778366	2.608677
1850	393	0.949275	1.637868	3030.05595	2.682612
1866.5	394	0.951691	1.661474	3101.141251	2.760496
1867	395	0.954106	1.686044	3147.844177	2.842744
1869	396	0.956522	1.711678	3199.126413	2.929842
1871	397	0.958937	1.738481	3252.697825	3.022316
1873	398	0.961353	1.766603	3308.846499	3.120884
1873.5	399	0.963768	1.796193	3365.167433	3.226309
1877	400	0.966184	1.827448	3430.119341	3.339565
1884	401	0.968599	1.86059	3505.350978	3.461794
1885	402	0.971014	1.895914	3573.798767	3.594492
1899	403	0.97343	1.933777	3672.24201	3.739492
1904	404	0.975845	1.97464	3759.715182	3.899204
1911	405	0.978261	2.019087	3858.475893	4.076714
1916	406	0.980676	2.067918	3962.131086	4.276285
1938	407	0.983092	2.122251	4112.923052	4.503951
1955	408	0.985507	2.183679	4269.091642	4.768452
1958	409	0.987923	2.254656	4414.615578	5.083472
1959	410	0.990338	2.33922	4582.532711	5.471952
1964	411	0.992754	2.444813	4801.612158	5.977109
1971	412	0.995169	2.587694	5100.345516	6.696162
1975	413	0.997585	2.818124	5565.794709	7.941822

Table C-46. Sulfate Combined Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
3.7681526	1	0.002415	-2.81812	-10.61912101	7.941822
3.7796338	2	0.004831	-2.58769	-9.780536982	6.696162
3.7841896	3	0.007246	-2.44481	-9.251634906	5.977109
3.830813	4	0.009662	-2.33922	-8.961115698	5.471952
3.8628328	5	0.012077	-2.25466	-8.709357345	5.083472
3.875359	6	0.014493	-2.18368	-8.462538519	4.768452
4.4543473	7	0.016908	-2.12225	-9.453244415	4.503951
4.9416424	8	0.019324	-2.06792	-10.21891183	4.276285
5.7807435	9	0.021739	-2.01909	-11.67182601	4.076714
5.7930136	10	0.024155	-1.97464	-11.43911828	3.899204
5.8141305	11	0.02657	-1.93378	-11.24323033	3.739492
5.8289456	12	0.028986	-1.89591	-11.05118231	3.594492
5.8777358	13	0.031401	-1.86059	-10.9360546	3.461794
5.8916442	14	0.033816	-1.82745	-10.76667169	3.339565
5.8944028	15	0.036232	-1.79619	-10.58748463	3.226309
5.9348942	16	0.038647	-1.7666	-10.48459897	3.120884
5.9763509	17	0.041063	-1.73848	-10.3897721	3.022316
5.9964521	18	0.043478	-1.71168	-10.26399586	2.929842
5.9989366	19	0.045894	-1.68604	-10.11447109	2.842744
6.0450053	20	0.048309	-1.66147	-10.04361926	2.760496
6.1047932	21	0.050725	-1.63787	-9.998845977	2.682612
6.1114673	22	0.05314	-1.61514	-9.870874189	2.608677
6.2005092	23	0.055556	-1.59322	-9.878753145	2.538339
6.2186001	24	0.057971	-1.57203	-9.775852731	2.471292
6.272877	25	0.060386	-1.55154	-9.73261234	2.407273
6.4504704	26	0.062802	-1.53167	-9.879998045	2.346016
6.4795843	27	0.065217	-1.51239	-9.799656247	2.287322
6.5111508	28	0.067633	-1.49365	-9.725406786	2.231002
6.5115967	29	0.070048	-1.47543	-9.607420319	2.176901
6.5212101	30	0.072464	-1.45768	-9.505860548	2.124841
6.5352413	31	0.074879	-1.44038	-9.413263165	2.074709
6.54103	32	0.077295	-1.42351	-9.311201999	2.026372
6.5490783	33	0.07971	-1.40702	-9.214714867	1.979718
6.5596152	34	0.082126	-1.39092	-9.123868924	1.934645
6.5608185	35	0.084541	-1.37516	-9.02217866	1.891067
6.5642081	36	0.086957	-1.35974	-8.925601715	1.848887
6.5659689	37	0.089372	-1.34463	-8.828820801	1.808039
6.5700423	38	0.091787	-1.32983	-8.737018115	1.768439
6.570883	39	0.094203	-1.31531	-8.642756202	1.730044
6.5786955	40	0.096618	-1.30106	-8.559303906	1.692768
6.5861717	41	0.099034	-1.28708	-8.476903302	1.656565
6.5877566	42	0.101449	-1.27334	-8.388441197	1.62139
6.5888577	43	0.103865	-1.25983	-8.300869156	1.587183
6.5957805	44	0.10628	-1.24656	-8.222007875	1.553901
6.5972821	45	0.108696	-1.2335	-8.137716935	1.521511
6.608338	46	0.111111	-1.22064	-8.066414417	1.489967
6.6200732	47	0.113527	-1.20799	-7.996957841	1.459231
6.6307493	48	0.115942	-1.19552	-7.927189592	1.429267
6.6320018	49	0.118357	-1.18324	-7.847242916	1.400054
6.6320018	50	0.120773	-1.17113	-7.766944972	1.371549
6.6379131	51	0.123188	-1.1592	-7.694645477	1.343736
6.6463905	52	0.125604	-1.14742	-7.626206652	1.316574
6.6495026	53	0.128019	-1.1358	-7.55253338	1.290051
6.6512704	54	0.130435	-1.12434	-7.478274781	1.264136
6.6567265	55	0.13285	-1.11302	-7.409064114	1.238812
6.6567265	56	0.135266	-1.10184	-7.334642153	1.21405
6.658011	57	0.137681	-1.0908	-7.262544621	1.18984
6.6592939	58	0.140097	-1.07989	-7.191280008	1.166154

Sulfate - lognormal
32092.73559 = (sum of Mi*Xi)^2
412 = count -1
0.277340829 = standard deviation ^2
402.6805038 = sum of Mi^2

0.70 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
6.664409	59	0.142512	-1.0691	-7.124932526	1.142979
6.6720329	60	0.144928	-1.05844	-7.061949055	1.120296
6.6720329	61	0.147343	-1.0479	-6.991603695	1.098088
6.6720329	62	0.149758	-1.03747	-6.922032027	1.076343
6.6802271	63	0.152174	-1.02715	-6.861620398	1.055045
6.6808547	64	0.154589	-1.01695	-6.794074811	1.034181
6.6846117	65	0.157005	-1.00684	-6.730366163	1.013736
6.6847992	66	0.15942	-0.99684	-6.663692444	0.993695
6.6858609	67	0.161836	-0.98694	-6.598546607	0.974051
6.6858609	68	0.164251	-0.97713	-6.532980866	0.954791
6.6877319	69	0.166667	-0.96742	-6.469848356	0.935902
6.6897236	70	0.169082	-0.9578	-6.407403691	0.917377
6.690221	71	0.171498	-0.94826	-6.344096947	0.899205
6.6933237	72	0.173913	-0.93881	-6.283789562	0.881373
6.6933856	73	0.176329	-0.92945	-6.22114546	0.863871
6.6939431	74	0.178744	-0.92016	-6.159519223	0.8467
6.6982681	75	0.181159	-0.91095	-6.101817029	0.829838
6.6995003	76	0.183575	-0.90183	-6.041779492	0.813289
6.7019604	77	0.18599	-0.89277	-5.983303085	0.797037
6.7038014	78	0.188406	-0.88379	-5.924722896	0.781077
6.7044144	79	0.190821	-0.87487	-5.865523074	0.765406
6.7044144	80	0.193237	-0.86603	-5.806223628	0.750008
6.7069846	81	0.195652	-0.85725	-5.749584838	0.734883
6.709792	82	0.198068	-0.84854	-5.693544644	0.720025
6.7099139	83	0.200483	-0.8399	-5.63563493	0.705427
6.7099139	84	0.202899	-0.83131	-5.578033721	0.69108
6.7111319	85	0.205314	-0.82279	-5.521838988	0.67698
6.7129562	86	0.207729	-0.81433	-5.466529241	0.663125
6.7165948	87	0.210145	-0.80592	-5.413032494	0.649506
6.7178047	88	0.21256	-0.79757	-5.357904284	0.636114
6.7190132	89	0.214976	-0.78927	-5.303136641	0.622952
6.7226298	90	0.217391	-0.78103	-5.250596541	0.610013
6.7250336	91	0.219807	-0.77285	-5.197411292	0.59729
6.7253937	92	0.222222	-0.76471	-5.142975607	0.584781
6.7274317	93	0.224638	-0.75662	-5.090132411	0.572479
6.7274317	94	0.227053	-0.74859	-5.036067254	0.560382
6.7274317	95	0.229469	-0.7406	-4.982315674	0.548484
6.7274317	96	0.231884	-0.73266	-4.928892966	0.536785
6.7274317	97	0.2343	-0.72476	-4.875776186	0.525278
6.7298241	98	0.236715	-0.71691	-4.824672782	0.513959
6.7310181	99	0.23913	-0.7091	-4.772980575	0.502826
6.7310181	100	0.241546	-0.70134	-4.720723144	0.491876
6.7322107	101	0.243961	-0.69362	-4.669576059	0.481105
6.736967	102	0.246377	-0.68594	-4.62113057	0.470509
6.7381525	103	0.248792	-0.67829	-4.570450614	0.460083
6.7393366	104	0.251208	-0.67069	-4.52002742	0.449829
6.7405194	105	0.253623	-0.66313	-4.46984584	0.439742
6.7405194	106	0.256039	-0.65561	-4.419131555	0.429821
6.7452363	107	0.258454	-0.64812	-4.371711993	0.420057
6.7461183	108	0.26087	-0.64067	-4.322010375	0.410453
6.7464121	109	0.263285	-0.63325	-4.27216862	0.401006
6.7464121	110	0.2657	-0.62587	-4.222368722	0.391712
6.7487595	111	0.268116	-0.61852	-4.174243173	0.382567
6.7487595	112	0.270531	-0.61121	-4.124886293	0.373573
6.7487595	113	0.272947	-0.60392	-4.075744243	0.364725
6.7511015	114	0.275362	-0.59667	-4.028206712	0.35602
6.7522704	115	0.277778	-0.58945	-3.980158757	0.347457
6.7534379	116	0.280193	-0.58227	-3.932308109	0.339036
6.7546041	117	0.282609	-0.57511	-3.884639551	0.330751
6.7569324	118	0.285024	-0.56798	-3.837798683	0.322601
6.7615728	119	0.28744	-0.56088	-3.792436581	0.314587
6.7621513	120	0.289855	-0.55381	-3.744928351	0.306702
6.7627295	121	0.292271	-0.54676	-3.69761165	0.29895

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
6.7627295	122	0.294686	-0.53975	-3.650159257	0.291326
6.765039	123	0.297101	-0.53275	-3.604106388	0.283828
6.7656155	124	0.299517	-0.52579	-3.55729471	0.276455
6.7660765	125	0.301932	-0.51885	-3.510584281	0.269206
6.7661917	126	0.304348	-0.51194	-3.463859677	0.262079
6.7661917	127	0.306763	-0.50505	-3.417236833	0.255071
6.7707894	128	0.309179	-0.49818	-3.373073706	0.248184
6.7707894	129	0.311594	-0.49134	-3.326734778	0.241411
6.7719356	130	0.31401	-0.48452	-3.281120515	0.234757
6.7725081	131	0.316425	-0.47772	-3.235355224	0.228215
6.7787849	132	0.318841	-0.47094	-3.192422501	0.221787
6.7844571	133	0.321256	-0.46419	-3.149278343	0.215473
6.7855876	134	0.323671	-0.45746	-3.10411123	0.209266
6.7855876	135	0.326087	-0.45074	-3.058565885	0.203171
6.7855876	136	0.328502	-0.44405	-3.013151683	0.197182
6.7861525	137	0.330918	-0.43738	-2.968131091	0.191302
6.7900972	138	0.333333	-0.43073	-2.924682258	0.185526
6.7979404	139	0.335749	-0.42409	-2.882957801	0.179855
6.7990559	140	0.338164	-0.41748	-2.838459859	0.174288
6.8029502	141	0.34058	-0.41088	-2.795212636	0.168824
6.8046145	142	0.342995	-0.4043	-2.751120806	0.16346
6.8068294	143	0.345411	-0.39774	-2.707349828	0.158197
6.8068294	144	0.347826	-0.3912	-2.6628072	0.153035
6.8073823	145	0.350242	-0.38467	-2.618585611	0.14797
6.8090393	146	0.352657	-0.37816	-2.574882665	0.143002
6.8117949	147	0.355072	-0.37166	-2.531682582	0.138132
6.8134446	148	0.357488	-0.36518	-2.488143575	0.133357
6.8139939	149	0.359903	-0.35872	-2.444296921	0.128678
6.8167359	150	0.362319	-0.35227	-2.40131629	0.124093
6.8167359	151	0.364734	-0.34583	-2.35745281	0.119601
6.8178306	152	0.36715	-0.33941	-2.314053878	0.115201
6.8211075	153	0.369565	-0.333	-2.271460601	0.110892
6.8232861	154	0.371981	-0.32661	-2.228567488	0.106675
6.8243737	155	0.374396	-0.32023	-2.18539023	0.102549
6.82546	156	0.376812	-0.31387	-2.142276323	0.098512
6.8319536	157	0.379227	-0.30751	-2.100904476	0.094563
6.8330317	158	0.381643	-0.30117	-2.057904683	0.090703
6.8341087	159	0.384058	-0.29484	-2.014968569	0.086931
6.8351846	160	0.386473	-0.28852	-1.972103963	0.083245
6.8362593	161	0.388889	-0.28222	-1.929303156	0.079646
6.8373328	162	0.391304	-0.27592	-1.886566208	0.076133
6.8384052	163	0.39372	-0.26964	-1.843885404	0.072704
6.8416155	164	0.396135	-0.26336	-1.801831918	0.06936
6.8426833	165	0.398551	-0.2571	-1.75925736	0.066101
6.8437499	166	0.400966	-0.25085	-1.716739165	0.062925
6.8458799	167	0.403382	-0.2446	-1.674529961	0.059831
6.8480053	168	0.405797	-0.23837	-1.632355363	0.05682
6.8506557	169	0.408213	-0.23215	-1.590346232	0.053891
6.8522426	170	0.410628	-0.22593	-1.548126154	0.051044
6.8522426	171	0.413043	-0.21972	-1.505592219	0.048278
6.8606637	172	0.415459	-0.21352	-1.464918716	0.045593
6.8617113	173	0.417874	-0.20733	-1.422666722	0.042987
6.8669333	174	0.42029	-0.20115	-1.381296034	0.040462
6.8679744	175	0.422705	-0.19498	-1.339100303	0.038016
6.8679744	176	0.425121	-0.18881	-1.296741996	0.035649
6.8741985	177	0.427536	-0.18265	-1.255575176	0.033361
6.8741985	178	0.429952	-0.1765	-1.213272262	0.031151
6.8752321	179	0.432367	-0.17035	-1.171200127	0.029019
6.8762646	180	0.434783	-0.16421	-1.129154199	0.026965
6.8803841	181	0.437198	-0.15808	-1.087630477	0.024988
6.8814113	182	0.439614	-0.15195	-1.045625492	0.023089
6.8814113	183	0.442029	-0.14583	-1.003497243	0.021266
6.8824375	184	0.444444	-0.13971	-0.961543652	0.019519

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
6.8824375	185	0.44686	-0.1336	-0.919487365	0.017849
6.8875526	186	0.449275	-0.12749	-0.878114515	0.016254
6.8916259	187	0.451691	-0.12139	-0.836576245	0.014736
6.8916259	188	0.454106	-0.11529	-0.794557828	0.013293
6.8926416	189	0.456522	-0.1092	-0.752681672	0.011925
6.8936564	190	0.458937	-0.10311	-0.710816544	0.010632
6.9007307	191	0.461353	-0.09703	-0.669550512	0.009414
6.9037473	192	0.463768	-0.09094	-0.627860761	0.008271
6.9057533	193	0.466184	-0.08487	-0.586072113	0.007202
6.9087548	194	0.468599	-0.07879	-0.544353223	0.006208
6.9097533	195	0.471014	-0.07272	-0.502475778	0.005288
6.9117473	196	0.47343	-0.06665	-0.460668272	0.004442
6.9157234	197	0.475845	-0.06058	-0.418980224	0.00367
6.9196838	198	0.478261	-0.05452	-0.377250943	0.002972
6.9216582	199	0.480676	-0.04846	-0.335393128	0.002348
6.9231364	200	0.483092	-0.04239	-0.293506081	0.001797
6.9304948	201	0.485507	-0.03634	-0.251822647	0.00132
6.9373141	202	0.487923	-0.03028	-0.210041604	0.000917
6.9377994	203	0.490338	-0.02422	-0.168040306	0.000587
6.9517722	204	0.492754	-0.01816	-0.126278128	0.00033
6.9565454	205	0.495169	-0.01211	-0.084243222	0.000147
6.9574974	206	0.497585	-0.00605	-0.042127375	3.67E-05
6.9598732	207	0.5	0	0	0
6.961296	208	0.502415	0.006055	0.042150376	3.67E-05
6.9641356	209	0.504831	0.01211	0.084335139	0.000147
6.9744789	210	0.507246	0.018165	0.126690593	0.00033
6.9754139	211	0.509662	0.024221	0.168951367	0.000587
6.9772813	212	0.512077	0.030277	0.211251696	0.000917
6.9828628	213	0.514493	0.036335	0.253725462	0.00132
6.9865665	214	0.516908	0.042395	0.296195196	0.001797
6.9902565	215	0.519324	0.048456	0.338717101	0.002348
6.993933	216	0.521739	0.054519	0.381298896	0.002972
6.993933	217	0.524155	0.060584	0.423718448	0.00367
6.99485	218	0.52657	0.06665	0.46620707	0.004442
6.9962697	219	0.528986	0.07272	0.508767233	0.005288
6.9966815	220	0.531401	0.078792	0.551281127	0.006208
6.9966815	221	0.533816	0.084867	0.593788938	0.007202
6.9994225	222	0.536232	0.090945	0.636561935	0.008271
7.0003345	223	0.538647	0.097026	0.679214673	0.009414
7.0012456	224	0.541063	0.103112	0.721910255	0.010632
7.0030655	225	0.543478	0.109201	0.764740036	0.011925
7.0030655	226	0.545894	0.115293	0.807406056	0.013293
7.0030655	227	0.548309	0.12139	0.850103922	0.014736
7.0030655	228	0.550725	0.127493	0.892841595	0.016254
7.0039741	229	0.55314	0.133599	0.935724552	0.017849
7.004882	230	0.555556	0.13971	0.978650346	0.019519
7.004882	231	0.557971	0.145827	1.021502632	0.021266
7.005789	232	0.560386	0.151949	1.064524596	0.023089
7.005789	233	0.562802	0.158077	1.107454113	0.024988
7.0066952	234	0.565217	0.16421	1.150572263	0.026965
7.0066952	235	0.567633	0.170351	1.193594956	0.029019
7.0076006	236	0.570048	0.176497	1.236817275	0.031151
7.008053	237	0.572464	0.18265	1.280023756	0.033361
7.0085052	238	0.574879	0.18881	1.323275606	0.035649
7.0085052	239	0.577295	0.194977	1.366500638	0.038016
7.0094089	240	0.57971	0.201152	1.409955268	0.040462
7.0103119	241	0.582126	0.207334	1.453476678	0.042987
7.0139155	242	0.584541	0.213524	1.497641707	0.045593
7.0157124	243	0.586957	0.219723	1.541510232	0.048278
7.0166097	244	0.589372	0.22593	1.585261592	0.051044
7.0201907	245	0.591787	0.232145	1.629702958	0.053891
7.021084	246	0.594203	0.238369	1.673612038	0.05682
7.0224224	247	0.596618	0.244604	1.717712967	0.059831

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.0228681	248	0.599034	0.250848	1.761670543	0.062925
7.023759	249	0.601449	0.257101	1.805812008	0.066101
7.024649	250	0.603865	0.263364	1.850036279	0.06936
7.0264268	251	0.60628	0.269637	1.894582941	0.072704
7.0282014	252	0.608696	0.275921	1.939230938	0.076133
7.0299729	253	0.611111	0.282216	1.983972283	0.079646
7.0299729	254	0.613527	0.288522	2.028304761	0.083245
7.0335065	255	0.615942	0.29484	2.073758999	0.086931
7.0343879	256	0.618357	0.30117	2.118547144	0.090703
7.0348284	257	0.620773	0.307512	2.163290814	0.094563
7.0352686	258	0.623188	0.313865	2.208127989	0.098512
7.0387835	259	0.625604	0.320233	2.254051365	0.102549
7.039222	260	0.628019	0.326612	2.299094762	0.106675
7.0396603	261	0.630435	0.333005	2.344239728	0.110892
7.0405364	262	0.63285	0.339412	2.389642918	0.115201
7.0440329	263	0.635266	0.345833	2.436059639	0.119601
7.0453409	264	0.637681	0.352268	2.481846484	0.124093
7.0457766	265	0.640097	0.358717	2.527441358	0.128678
7.0457766	266	0.642512	0.365181	2.572986903	0.133357
7.0466473	267	0.644928	0.371662	2.618968197	0.138132
7.0475172	268	0.647343	0.378157	2.665064646	0.143002
7.0475172	269	0.649758	0.384669	2.710957951	0.14797
7.0492548	270	0.652174	0.391196	2.757643177	0.153035
7.0496888	271	0.654589	0.39774	2.803944785	0.158197
7.0501225	272	0.657005	0.404302	2.850380237	0.16346
7.0561753	273	0.65942	0.410882	2.899258387	0.168824
7.0561753	274	0.661836	0.417479	2.945801697	0.174288
7.0561753	275	0.664251	0.424093	2.992473359	0.179855
7.057037	276	0.666667	0.430728	3.039660573	0.185526
7.0578979	277	0.669082	0.437381	3.086987279	0.191302
7.0587582	278	0.671498	0.444052	3.134453509	0.197182
7.0587582	279	0.673913	0.450744	3.181695972	0.203171
7.059188	280	0.676329	0.457457	3.229271486	0.209266
7.0604764	281	0.678744	0.46419	3.277403793	0.215473
7.0604764	282	0.681159	0.470943	3.325083177	0.221787
7.0613344	283	0.683575	0.477719	3.37333298	0.228215
7.0617631	284	0.68599	0.484517	3.421546995	0.234757
7.0621916	285	0.688406	0.491336	3.469911267	0.241411
7.0653144	286	0.690821	0.49818	3.519800253	0.248184
7.0656134	287	0.693237	0.505046	3.568458484	0.255071
7.0673198	288	0.695652	0.511936	3.618018124	0.262079
7.0707241	289	0.698068	0.518851	3.668650939	0.269206
7.0732697	290	0.700483	0.52579	3.719056294	0.276455
7.0732697	291	0.702899	0.532755	3.768317767	0.283828
7.0766538	292	0.705314	0.539746	3.819598789	0.291326
7.0766538	293	0.707729	0.546763	3.869253911	0.29895
7.0774981	294	0.710145	0.553807	3.919569664	0.306702
7.0791844	295	0.71256	0.560881	3.970578855	0.314587
7.0804473	296	0.714976	0.567979	4.021548494	0.322601
7.0825486	297	0.717391	0.57511	4.073243656	0.330751
7.0825486	298	0.719807	0.582268	4.123938579	0.339036
7.0833878	299	0.722222	0.589455	4.175337568	0.347457
7.0867379	300	0.724638	0.596674	4.228472264	0.35602
7.0867379	301	0.727053	0.603925	4.279857822	0.364725
7.0875737	302	0.729469	0.611207	4.331971739	0.373573
7.0884088	303	0.731884	0.61852	4.384323036	0.382567
7.0900768	304	0.7343	0.625869	4.437457732	0.391712
7.0900768	305	0.736715	0.63325	4.489794456	0.401006
7.0900768	306	0.73913	0.640666	4.542372994	0.410453
7.0917421	307	0.741546	0.648118	4.596288766	0.420057
7.0967214	308	0.743961	0.655607	4.652660085	0.429821
7.0967214	309	0.746377	0.663131	4.706054362	0.439742
7.0967214	310	0.748792	0.670693	4.759722951	0.449829

Table C-46. Sulfate Combined Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.1019231	311	0.751208	0.678294	4.817194124	0.460083
7.1033221	312	0.753623	0.685936	4.872426855	0.470509
7.1057861	313	0.756039	0.693617	4.928694337	0.481105
7.1066881	314	0.758454	0.701339	4.984195035	0.491876
7.1098795	315	0.76087	0.709102	5.041632047	0.502826
7.1115121	316	0.763285	0.716909	5.098308453	0.513959
7.1115121	317	0.7657	0.72476	5.154142449	0.525278
7.1147694	318	0.768116	0.732656	5.212678259	0.536785
7.1184213	319	0.770531	0.740597	5.271881382	0.548484
7.119231	320	0.772947	0.748587	5.329363078	0.560382
7.1212525	321	0.775362	0.756623	5.388106398	0.572479
7.1236728	322	0.777778	0.76471	5.447543577	0.584781
7.1252831	323	0.780193	0.772845	5.506742237	0.59729
7.1268908	324	0.782609	0.781033	5.566337783	0.610013
7.1276937	325	0.785024	0.789273	5.62569722	0.622952
7.1302987	326	0.78744	0.797568	5.686896154	0.636114
7.1308988	327	0.789855	0.805919	5.746928077	0.649506
7.1308988	328	0.792271	0.814325	5.806870446	0.663125
7.1396603	329	0.794686	0.822788	5.874427023	0.67698
7.1444072	330	0.797101	0.831312	5.939233304	0.69108
7.1467722	331	0.799517	0.839897	6.002550774	0.705427
7.1486602	332	0.801932	0.848543	6.065942969	0.720025
7.1518772	333	0.804348	0.857253	6.130970549	0.734883
7.1670379	334	0.806763	0.86603	6.206869454	0.750008
7.1701195	335	0.809179	0.874875	6.272956801	0.765406
7.1770188	336	0.811594	0.883786	6.342945551	0.781077
7.1831117	337	0.81401	0.892769	6.412860128	0.797037
7.1929342	338	0.816425	0.901825	6.486770693	0.813289
7.219642	339	0.818841	0.910954	6.576764977	0.829838
7.2442275	340	0.821256	0.920163	6.665870664	0.8467
7.2442275	341	0.823671	0.929447	6.733123661	0.863871
7.2577077	342	0.826087	0.938815	6.813641474	0.881373
7.2584122	343	0.828502	0.948264	6.882892298	0.899205
7.2626286	344	0.830918	0.957798	6.956130897	0.917377
7.2668273	345	0.833333	0.96742	7.03007716	0.935902
7.2717037	346	0.835749	0.977134	7.105427641	0.954791
7.2730926	347	0.838164	0.98694	7.178109275	0.974051
7.3092124	348	0.84058	0.996843	7.286134061	0.993695
7.3132204	349	0.842995	1.006845	7.363277486	1.013736
7.3198649	350	0.845411	1.016947	7.443914339	1.034181
7.3258075	351	0.847826	1.027154	7.524730704	1.055045
7.3310603	352	0.850242	1.03747	7.605752945	1.076343
7.3395377	353	0.852657	1.047897	7.691079958	1.098088
7.3543623	354	0.855072	1.05844	7.784154025	1.120296
7.3559605	355	0.857488	1.069102	7.864271589	1.142979
7.3620106	356	0.859903	1.079886	7.950134043	1.166154
7.3639135	357	0.862319	1.090798	8.032541553	1.18984
7.3702306	358	0.864734	1.101839	8.120808951	1.21405
7.3714893	359	0.86715	1.113019	8.204608767	1.238812
7.3926475	360	0.869565	1.124338	8.311833153	1.264136
7.3957216	361	0.871981	1.135804	8.400092171	1.290051
7.3987863	362	0.874396	1.147421	8.489521189	1.316574
7.4091364	363	0.876812	1.159196	8.588644827	1.343736
7.4175804	364	0.879227	1.171131	8.686960701	1.371549
7.4217758	365	0.881643	1.183239	8.781734305	1.400054
7.4283332	366	0.884058	1.195519	8.880716568	1.429267
7.4283332	367	0.886473	1.207986	8.973324845	1.459231
7.4401467	368	0.888889	1.220642	9.081755035	1.489967
7.4442486	369	0.891304	1.233495	9.182446228	1.521511
7.4512417	370	0.89372	1.246556	9.288387884	1.553901
7.4524025	371	0.896135	1.259834	9.388792484	1.587183
7.4535619	372	0.898551	1.273338	9.490903993	1.62139
7.4639366	373	0.900966	1.287076	9.60665348	1.656565

Table C-46. Sulfate Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

Sulfate (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.4679423	374	0.903382	1.301064	9.716270947	1.692768
7.4787348	375	0.905797	1.315311	9.83686396	1.730044
7.488853	376	0.908213	1.329827	9.958877161	1.768439
7.4894121	377	0.910628	1.344633	10.07051324	1.808039
7.4899709	378	0.913043	1.359738	10.1843964	1.848887
7.4938739	379	0.915459	1.375161	10.30527964	1.891067
7.4972072	380	0.917874	1.390915	10.42797992	1.934645
7.4977617	381	0.92029	1.407025	10.54953578	1.979718
7.4977617	382	0.922705	1.423507	10.67311627	2.026372
7.4999765	383	0.925121	1.440385	10.80285333	2.074709
7.5043916	384	0.927536	1.457684	10.93902804	2.124841
7.5043916	385	0.929952	1.475432	11.0722219	2.176901
7.5054923	386	0.932367	1.493654	11.21060896	2.231002
7.5126175	387	0.934783	1.51239	11.36200498	2.287322
7.5153446	388	0.937198	1.531671	11.51103483	2.346016
7.5194212	389	0.939614	1.551539	11.6666741	2.407273
7.5196924	390	0.942029	1.572034	11.82121444	2.471292
7.5205055	391	0.944444	1.593216	11.98179303	2.538339
7.5218593	392	0.94686	1.61514	12.14885431	2.608677
7.5229409	393	0.949275	1.637868	12.32158481	2.682612
7.5318203	394	0.951691	1.661474	12.51392372	2.760496
7.5320881	395	0.954106	1.686044	12.69943214	2.842744
7.5331588	396	0.956522	1.711678	12.89434313	2.929842
7.5342283	397	0.958937	1.738481	13.09811229	3.022316
7.5352967	398	0.961353	1.766603	13.31187406	3.120884
7.5355636	399	0.963768	1.796193	13.53532601	3.226309
7.53743	400	0.966184	1.827448	13.77425922	3.339565
7.5411525	401	0.968599	1.86059	14.03099052	3.461794
7.5416831	402	0.971014	1.895914	14.29838608	3.594492
7.5490827	403	0.97343	1.933777	14.59824048	3.739492
7.5517122	404	0.975845	1.97464	14.91191548	3.899204
7.5553819	405	0.978261	2.019087	15.25497598	4.076714
7.557995	406	0.980676	2.067918	15.6293146	4.276285
7.5694118	407	0.983092	2.122251	16.06419414	4.503951
7.5781455	408	0.985507	2.183679	16.54823401	4.768452
7.5796788	409	0.987923	2.254656	17.08956497	5.083472
7.5801894	410	0.990338	2.33922	17.73173352	5.471952
7.5827385	411	0.992754	2.444813	18.53837542	5.977109
7.5862963	412	0.995169	2.587694	19.63101591	6.696162
7.5883237	413	0.997585	2.818124	21.38483634	7.941822

Table C-47. Sulfate Combined Background Data Set, Filliben's Statistic Analysis

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
43.3	3.768152635	1	0.00168	-2.9333	-127.012	8.604262	-11.05313084
43.8	3.779633817	2	0.00407	-2.6462	-115.903	7.002338	-10.00164064
44	3.784189634	3	0.00649	-2.4843	-109.311	6.171942	-9.401211206
46.1	3.83081295	4	0.00891	-2.3694	-109.229	5.614044	-9.076718271
47.6	3.862832761	5	0.01133	-2.2792	-108.49	5.194724	-8.804144181
48.2	3.875359021	6	0.01375	-2.2044	-106.254	4.859526	-8.542970313
86	4.454347296	7	0.01617	-2.1403	-184.064	4.580788	-9.533539304
140	4.941642423	8	0.01859	-2.0839	-291.744	4.342593	-10.29783345
324	5.780743516	9	0.02100	-2.0334	-658.831	4.134838	-11.75473766
328	5.793013608	10	0.02342	-1.9877	-651.96	3.950882	-11.51467166
335	5.814130532	11	0.02584	-1.9457	-651.825	3.785926	-11.31281937
340	5.828945618	12	0.02826	-1.9070	-648.371	3.63655	-11.11564728
357	5.877735782	13	0.03068	-1.8709	-667.903	3.500177	-10.99651526
362	5.891644212	14	0.03310	-1.8371	-665.016	3.374793	-10.82331018
363	5.894402834	15	0.03552	-1.8052	-655.298	3.258851	-10.64074545
378	5.934894196	16	0.03794	-1.7751	-670.997	3.151067	-10.53517594
394	5.976350909	17	0.04036	-1.7465	-688.14	3.05043	-10.43798463
402	5.996452089	18	0.04278	-1.7193	-691.171	2.956101	-10.30988909
403	5.998936562	19	0.04520	-1.6933	-682.413	2.867379	-10.15820094
422	6.045005314	20	0.04762	-1.6684	-704.078	2.783664	-10.08567819
448	6.104793232	21	0.05003	-1.6445	-736.745	2.704449	-10.03946088
451	6.11146734	22	0.05245	-1.6215	-731.303	2.629312	-9.909838202
493	6.200509174	23	0.05487	-1.5993	-788.473	2.55788	-9.916705837
502	6.21860012	24	0.05729	-1.5779	-792.115	2.489828	-9.812445652
530	6.272877007	25	0.05971	-1.5572	-825.319	2.424887	-9.768155414
633	6.450470422	26	0.06213	-1.5371	-973.005	2.362776	-9.915227391
651.7	6.479584333	27	0.06455	-1.5177	-989.062	2.303306	-9.833836503
672.6	6.511150799	28	0.06697	-1.4988	-1008.06	2.246271	-9.758628405
672.9	6.51159673	29	0.06939	-1.4804	-996.139	2.191484	-9.639548594
679.4	6.521210056	30	0.07181	-1.4625	-993.597	2.138798	-9.537027985
689	6.535241271	31	0.07423	-1.4450	-995.618	2.088079	-9.44354666
693	6.541029999	32	0.07665	-1.4280	-989.607	2.039197	-9.340619963
698.6	6.549078332	33	0.07906	-1.4114	-985.999	1.992029	-9.243320248
706	6.559615237	34	0.08148	-1.3952	-984.983	1.946472	-9.151714927

Normal

153307.720 =sum X(i)*M(i)
408.062 =sum M(i)^2
384.64 = standard deviation
20.2005 = square root of sum Mi^2

0.972 = Filliben's Statistic

Lognormal

180.734 =sum X(i)*M(i)
408.062 =sum M(i)^2
0.53 = standard deviation
20.2005 = square root of sum Mi^2

0.837 = Filliben's Statistic

.987+ is acceptable value

Normal - Fail
Lognormal - Fail

Table C-47. Sulfate Combined Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
706.85	6.560818479	35	0.08390	-1.3793	-974.9509	1.90244	-9.049268975
709.25	6.564208074	36	0.08632	-1.3638	-967.2452	1.859835	-8.951989612
710.5	6.565968948	37	0.08874	-1.3485	-958.1439	1.818584	-8.85452903
713.4	6.570042273	38	0.09116	-1.3336	-951.4203	1.778601	-8.762084996
714	6.570882962	39	0.09358	-1.3190	-941.7882	1.739843	-8.667198791
719.6	6.578695502	40	0.09600	-1.3047	-938.857	1.702224	-8.583177228
725	6.586171655	41	0.09842	-1.2906	-935.6984	1.665696	-8.500234696
726.15	6.587756605	42	0.10084	-1.2768	-927.1457	1.630209	-8.411223989
726.95	6.588857699	43	0.10326	-1.2632	-918.2944	1.595713	-8.32314639
732	6.595780514	44	0.10568	-1.2499	-914.8971	1.562149	-8.243798615
733.1	6.597282118	45	0.10809	-1.2367	-906.6441	1.529492	-8.159032621
741.25	6.60833795	46	0.11051	-1.2238	-907.1435	1.497692	-8.087300031
750	6.620073207	47	0.11293	-1.2111	-908.3089	1.466711	-8.017428974
758.05	6.630749347	48	0.11535	-1.1985	-908.5593	1.436517	-7.947271594
759	6.632001777	49	0.11777	-1.1862	-900.3288	1.40708	-7.866906488
759	6.632001777	50	0.12019	-1.1740	-891.0925	1.378358	-7.786201399
763.5	6.637913125	51	0.12261	-1.1620	-887.2182	1.350339	-7.713526653
770	6.646390515	52	0.12503	-1.1502	-885.6622	1.322985	-7.644749251
772.4	6.649502551	53	0.12745	-1.1385	-879.4062	1.296267	-7.57070668
773.7667	6.651270364	54	0.12987	-1.1270	-872.0511	1.270176	-7.496120202
778	6.656726524	55	0.13229	-1.1156	-867.9756	1.244675	-7.426576054
778	6.656726524	56	0.13471	-1.1044	-859.2387	1.219743	-7.351821109
779	6.658011046	57	0.13712	-1.0933	-851.7047	1.195372	-7.279408982
780	6.65929392	58	0.13954	-1.0824	-844.2497	1.171528	-7.207829647
784	6.66440902	59	0.14196	-1.0715	-840.0887	1.148202	-7.141191815
790	6.672032945	60	0.14438	-1.0608	-838.0611	1.125375	-7.077938706
790	6.672032945	61	0.14680	-1.0503	-829.6996	1.103031	-7.007320277
790	6.672032945	62	0.14922	-1.0398	-821.4279	1.081147	-6.937460371
796.5	6.680227129	63	0.15164	-1.0294	-819.939	1.059721	-6.876809476
797	6.680854679	64	0.15406	-1.0192	-812.2863	1.038727	-6.808991887
800	6.684611728	65	0.15648	-1.0090	-807.2311	1.018159	-6.745033244
800.15	6.68479921	66	0.15890	-0.9990	-799.3501	0.998002	-6.678116745
801	6.685860947	67	0.16132	-0.9891	-792.2385	0.978243	-6.612729969
801	6.685860947	68	0.16374	-0.9792	-784.3561	0.958874	-6.546936199
802.5	6.687731855	69	0.16615	-0.9695	-778.0026	0.939879	-6.483579502
804.1	6.68972364	70	0.16857	-0.9598	-771.7889	0.921249	-6.420910766
804.5	6.690220966	71	0.17099	-0.9502	-764.4754	0.902973	-6.357376849
807	6.693323668	72	0.17341	-0.9408	-759.1995	0.885044	-6.296862559
807.05	6.693385624	73	0.17583	-0.9314	-751.6606	0.867446	-6.234005512
807.5	6.693943055	74	0.17825	-0.9221	-744.5574	0.850181	-6.172167263
811	6.698268054	75	0.18067	-0.9128	-740.2943	0.833234	-6.11429048
812	6.69950034	76	0.18309	-0.9037	-733.7685	0.816594	-6.054041976
814	6.701960366	77	0.18551	-0.8946	-728.1817	0.800259	-5.995387211
815.5	6.703801422	78	0.18793	-0.8856	-722.1753	0.784219	-5.936627429
816	6.704414355	79	0.19035	-0.8766	-715.3227	0.768464	-5.877230522
816	6.704414355	80	0.19277	-0.8678	-708.085	0.752992	-5.817763392
818.1	6.706984579	81	0.19518	-0.8589	-702.7048	0.73779	-5.760946026
820.4	6.709792026	82	0.19760	-0.8502	-697.5136	0.72286	-5.704742769
820.5	6.709913911	83	0.20002	-0.8415	-690.4832	0.708189	-5.646657808
820.5	6.709913911	84	0.20244	-0.8329	-683.4182	0.693771	-5.588881148
821.5	6.711131937	85	0.20486	-0.8244	-677.2297	0.679606	-5.532535791
823	6.712956201	86	0.20728	-0.8159	-671.4808	0.665683	-5.477061053
826	6.716594774	87	0.20970	-0.8075	-666.9645	0.651997	-5.423402025
827	6.717804695	88	0.21212	-0.7991	-660.8484	0.638547	-5.368138212
828	6.719013154	89	0.21454	-0.7908	-654.7607	0.625323	-5.313219637
831	6.722629795	90	0.21696	-0.7825	-650.2667	0.612324	-5.26053211
833	6.725033642	91	0.21938	-0.7743	-644.9924	0.599541	-5.207197504
833.3	6.725393721	92	0.22180	-0.7661	-638.4265	0.586974	-5.152609425

Table C-47. Sulfate Combined Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
835	6.727431725	93	0.22421	-0.7580	-632.9605	0.574619	-5.099639129
835	6.727431725	94	0.22663	-0.7500	-626.232	0.562468	-5.045428656
835	6.727431725	95	0.22905	-0.7420	-619.5433	0.550517	-4.991539408
835	6.727431725	96	0.23147	-0.7340	-612.8964	0.538767	-4.937986681
835	6.727431725	97	0.23389	-0.7261	-606.2856	0.527207	-4.884724586
837	6.72982407	98	0.23631	-0.7182	-601.1511	0.515842	-4.833501948
838	6.7310181	99	0.23873	-0.7104	-595.311	0.504661	-4.781681219
838	6.7310181	100	0.24115	-0.7026	-588.7888	0.493664	-4.729293699
839	6.732210706	101	0.24357	-0.6949	-582.9968	0.482846	-4.678018021
843	6.736966958	102	0.24599	-0.6872	-579.2851	0.472204	-4.629448292
844	6.738152495	103	0.24841	-0.6795	-573.509	0.461738	-4.578662555
845	6.739336627	104	0.25083	-0.6719	-567.7502	0.451441	-4.528118216
846	6.74051936	105	0.25324	-0.6643	-562.0089	0.441312	-4.477815447
846	6.74051936	106	0.25566	-0.6568	-555.6284	0.431348	-4.426978552
850	6.745236349	107	0.25808	-0.6493	-551.8757	0.421546	-4.379449455
850.75	6.746118313	108	0.26050	-0.6418	-546.0101	0.411905	-4.329649145
851	6.746412129	109	0.26292	-0.6344	-539.8443	0.402418	-4.279685007
851	6.746412129	110	0.26534	-0.6270	-533.5489	0.393088	-4.229777732
853	6.748759547	111	0.26776	-0.6196	-528.5208	0.383907	-4.181547346
853	6.748759547	112	0.27018	-0.6123	-522.2679	0.374877	-4.13207538
853	6.748759547	113	0.27260	-0.6050	-516.0431	0.365994	-4.082825915
855	6.751101469	114	0.27502	-0.5977	-511.0408	0.357256	-4.035191065
856	6.752270376	115	0.27744	-0.5905	-505.4453	0.348659	-3.98703685
857	6.753437919	116	0.27986	-0.5833	-499.8627	0.340204	-3.939079902
858	6.754604099	117	0.28227	-0.5761	-494.291	0.331887	-3.891305006
860	6.756932389	118	0.28469	-0.5690	-489.2992	0.323707	-3.844374255
864	6.761572769	119	0.28711	-0.5618	-485.4281	0.315662	-3.798909051
864.5	6.762151305	120	0.28953	-0.5548	-479.5821	0.307748	-3.751309122
865	6.762729507	121	0.29195	-0.5477	-473.7546	0.299968	-3.703900707
865	6.762729507	122	0.29437	-0.5407	-467.6713	0.292314	-3.656340677
867	6.765038977	123	0.29679	-0.5337	-462.679	0.284788	-3.610197628
867.5	6.765615512	124	0.29921	-0.5267	-456.8923	0.277389	-3.56329417
867.9	6.766076501	125	0.30163	-0.5197	-451.0684	0.270113	-3.516491843
868	6.766191715	126	0.30405	-0.5128	-445.1068	0.26296	-3.469675033
868	6.766191715	127	0.30647	-0.5059	-439.114	0.255926	-3.422959881
872	6.770789424	128	0.30889	-0.4990	-435.1379	0.249012	-3.378700576
872	6.770789424	129	0.31130	-0.4922	-429.159	0.242216	-3.332276975
873	6.771935556	130	0.31372	-0.4853	-423.6864	0.235538	-3.286571265
873.5	6.77250813	131	0.31614	-0.4785	-417.9796	0.228973	-3.240721741
879	6.778784898	132	0.31856	-0.4717	-414.6446	0.222523	-3.197709219
884	6.784457063	133	0.32098	-0.4650	-411.0215	0.216184	-3.154476928
885	6.785587645	134	0.32340	-0.4582	-405.5161	0.209957	-3.109225825
885	6.785587645	135	0.32582	-0.4515	-399.5648	0.203839	-3.063595622
885	6.785587645	136	0.32824	-0.4448	-393.6317	0.197831	-3.018104277
885.5	6.786152457	137	0.33066	-0.4381	-387.9347	0.191929	-2.972991517
889	6.790097236	138	0.33308	-0.4314	-383.5435	0.186134	-2.929468315
896	6.797940413	139	0.33550	-0.4248	-380.6085	0.180443	-2.887672103
897	6.799055862	140	0.33792	-0.4182	-375.0881	0.174856	-2.843082178
900.5	6.802950165	141	0.34033	-0.4115	-370.6006	0.169373	-2.799752529
902	6.80461452	142	0.34275	-0.4050	-365.2733	0.163992	-2.755592186
904	6.80682936	143	0.34517	-0.3984	-360.1409	0.158711	-2.711745278
904	6.80682936	144	0.34759	-0.3918	-354.213	0.15353	-2.667109789
904.5	6.807382305	145	0.35001	-0.3853	-348.4941	0.148448	-2.622811158
906	6.809039306	146	0.35243	-0.3788	-343.1619	0.143464	-2.579031831
908.5	6.811794888	147	0.35485	-0.3723	-338.1978	0.138577	-2.535755986
910	6.8134446	148	0.35727	-0.3658	-332.85	0.133787	-2.492148252
910.5	6.813993899	149	0.35969	-0.3593	-327.1358	0.129091	-2.448216708
913	6.816735881	150	0.36211	-0.3528	-322.1353	0.12449	-2.405160157

Table C-47. Sulfate Combined Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*MI (log)
913	6.816735881	151	0.36453	-0.3464	-316.2501	0.119983	-2.36121918
914	6.817830571	152	0.36695	-0.3400	-310.7172	0.115568	-2.317743343
917	6.821107472	153	0.36936	-0.3335	-305.8532	0.111247	-2.275089801
919	6.823286122	154	0.37178	-0.3271	-300.6339	0.107015	-2.232112519
920	6.82437367	155	0.37420	-0.3207	-295.082	0.102875	-2.188858241
921	6.825460036	156	0.37662	-0.3144	-289.5298	0.098825	-2.145682809
927	6.831953566	157	0.37904	-0.3080	-285.5153	0.094864	-2.104236532
928	6.833031733	158	0.38146	-0.3016	-279.9289	0.090991	-2.061167351
929	6.834108739	159	0.38388	-0.2953	-274.3394	0.087206	-2.018154056
930	6.835184586	160	0.38630	-0.2890	-268.7498	0.083508	-1.975220016
931	6.836259277	161	0.38872	-0.2827	-263.1582	0.079898	-1.932349752
932	6.837332815	162	0.39114	-0.2764	-257.5645	0.076373	-1.889543324
933	6.838405201	163	0.39356	-0.2701	-251.9667	0.072933	-1.846785243
936	6.841615476	164	0.39598	-0.2638	-246.8956	0.069578	-1.804663116
937	6.842683282	165	0.39839	-0.2575	-241.2813	0.066308	-1.762018987
938	6.843749949	166	0.40081	-0.2512	-235.6641	0.063122	-1.719431198
940	6.845879875	167	0.40323	-0.2450	-230.2879	0.060019	-1.677152786
942	6.848005275	168	0.40565	-0.2387	-224.8964	0.056998	-1.63491672
944.5	6.850655687	169	0.40807	-0.2325	-219.6047	0.05406	-1.592838486
946	6.852242569	170	0.41049	-0.2263	-214.063	0.051204	-1.550541084
946	6.852242569	171	0.41291	-0.2201	-208.1823	0.048429	-1.507944829
954	6.860663671	172	0.41533	-0.2139	-204.02	0.045735	-1.46720402
955	6.86171134	173	0.41775	-0.2077	-198.3135	0.043122	-1.424889967
960	6.866933284	174	0.42017	-0.2015	-193.407	0.040588	-1.383450711
961	6.867974409	175	0.42259	-0.1953	-187.6651	0.038135	-1.341185034
961	6.867974409	176	0.42501	-0.1891	-181.7293	0.03576	-1.298764263
967	6.874198495	177	0.42742	-0.1829	-176.8967	0.033465	-1.257521126
967	6.874198495	178	0.42984	-0.1768	-170.9382	0.031248	-1.215163507
968	6.875232087	179	0.43226	-0.1706	-165.1547	0.029109	-1.173013493
969	6.876264612	180	0.43468	-0.1645	-159.3666	0.027049	-1.130905298
973	6.880384082	181	0.43710	-0.1583	-154.0479	0.025066	-1.089320049
974	6.881411304	182	0.43952	-0.1522	-148.2278	0.02316	-1.047244906
974	6.881411304	183	0.44194	-0.1461	-142.255	0.021331	-1.005046248
975	6.882437471	184	0.44436	-0.1399	-136.4276	0.019579	-0.963030293
975	6.882437471	185	0.44678	-0.1338	-130.4597	0.017904	-0.920903586
980	6.887552572	186	0.44920	-0.1277	-125.1347	0.016304	-0.879461316
984	6.891625897	187	0.45162	-0.1216	-119.6326	0.014781	-0.837868998
984	6.891625897	188	0.45404	-0.1155	-113.6242	0.013334	-0.795787903
985	6.892641641	189	0.45645	-0.1094	-107.7285	0.011962	-0.753841404
986	6.893656355	190	0.45887	-0.1033	-101.8251	0.010665	-0.711913749
993	6.900730664	191	0.46129	-0.0972	-96.49587	0.009443	-0.670586081
996	6.903747258	192	0.46371	-0.0911	-90.72042	0.008296	-0.628826145
998	6.905753276	193	0.46613	-0.0850	-84.82683	0.007224	-0.586967119
1001	6.908754779	194	0.46855	-0.0789	-78.99236	0.006227	-0.545193638
1002	6.909753282	195	0.47097	-0.0728	-72.978	0.005305	-0.503253471
1004	6.9117473	196	0.47339	-0.0668	-67.01937	0.004456	-0.461375469
1008	6.915723449	197	0.47581	-0.0607	-61.16235	0.003682	-0.41962493
1012	6.91968385	198	0.47823	-0.0546	-55.25788	0.002981	-0.377833084
1014	6.921658184	199	0.48065	-0.0485	-49.21007	0.002355	-0.335912483
1015.5	6.923136381	200	0.48307	-0.0425	-43.11789	0.001803	-0.29395471
1023	6.930494766	201	0.48548	-0.0364	-37.22815	0.001324	-0.252208721
1030	6.937314081	202	0.48790	-0.0303	-31.23457	0.00092	-0.21037285
1030.5	6.9377994	203	0.49032	-0.0243	-24.99838	0.000588	-0.168300589
1045	6.951772164	204	0.49274	-0.0182	-19.01082	0.000331	-0.126467806
1050	6.956545443	205	0.49516	-0.0121	-12.73452	0.000147	-0.084369761
1051	6.957497371	206	0.49758	-0.0061	-6.373323	3.68E-05	-0.042190653
1053.5	6.959873233	207	0.50000	0.0000	0	0	0
1055	6.961296046	208	0.50242	0.0061	6.397579	3.68E-05	0.042213689

Table C-47. Sulfate Combined Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1058	6.964135612	209	0.50484	0.0121	12.83154	0.000147	0.084461816
1069	6.974478911	210	0.50726	0.0182	19.44743	0.000331	0.12688089
1070	6.975413927	211	0.50968	0.0243	25.95659	0.000588	0.169213061
1072	6.977281342	212	0.51210	0.0303	32.50821	0.00092	0.21158485
1078	6.982862751	213	0.51452	0.0364	39.22967	0.001324	0.254114453
1082	6.986566459	214	0.51693	0.0425	45.94146	0.001803	0.296647936
1086	6.9902565	215	0.51935	0.0485	52.70427	0.002355	0.339241603
1090	6.993932975	216	0.52177	0.0546	59.51689	0.002981	0.381887283
1090	6.993932975	217	0.52419	0.0607	66.13786	0.003682	0.424370445
1091	6.994849986	218	0.52661	0.0668	72.82683	0.004456	0.46692277
1092.55	6.996269693	219	0.52903	0.0728	79.57297	0.005305	0.509554663
1093	6.996681488	220	0.53145	0.0789	86.2524	0.006227	0.552132237
1093	6.996681488	221	0.53387	0.0850	92.90153	0.007224	0.594695729
1096	6.999422468	222	0.53629	0.0911	99.82889	0.008296	0.637540698
1097	7.00033446	223	0.53871	0.0972	106.6022	0.009443	0.680265189
1098	7.001245622	224	0.54113	0.1033	113.3914	0.010665	0.723024584
1100	7.003065459	225	0.54355	0.1094	120.3059	0.011962	0.765918348
1100	7.003065459	226	0.54596	0.1155	127.0189	0.013334	0.808656021
1100	7.003065459	227	0.54838	0.1216	133.7356	0.014781	0.85141758
1100	7.003065459	228	0.55080	0.1277	140.4574	0.016304	0.894210984
1101	7.003974137	229	0.55322	0.1338	147.3192	0.017904	0.937165782
1102	7.00488199	230	0.55564	0.1399	154.1982	0.019579	0.980163435
1102	7.00488199	231	0.55806	0.1461	160.9497	0.021331	1.023079431
1103	7.005789019	232	0.56048	0.1522	167.8596	0.02316	1.066173281
1103	7.005789019	233	0.56290	0.1583	174.6298	0.025066	1.10917448
1104	7.006695227	234	0.56532	0.1645	181.5694	0.027049	1.152356577
1104	7.006695227	235	0.56774	0.1706	188.3583	0.029109	1.195442996
1105	7.007600614	236	0.57016	0.1768	195.3327	0.031248	1.238745221
1105.5	7.008053	237	0.57258	0.1829	202.233	0.033465	1.282007597
1106	7.008505182	238	0.57499	0.1891	209.1495	0.03576	1.325339252
1106	7.008505182	239	0.57741	0.1953	215.9808	0.038135	1.368628027
1107	7.009408933	240	0.57983	0.2015	223.0224	0.040588	1.41215465
1108	7.010311867	241	0.58225	0.2077	230.0852	0.043122	1.455748071
1112	7.013915475	242	0.58467	0.2139	237.8095	0.045735	1.499978059
1114	7.01571242	243	0.58709	0.2201	245.1534	0.048429	1.543918966
1115	7.016609684	244	0.58951	0.2263	252.3047	0.051204	1.58773445
1119	7.020190708	245	0.59193	0.2325	260.1775	0.05406	1.632256889
1120	7.021083964	246	0.59435	0.2387	267.3927	0.056998	1.676238132
1121.5	7.022422354	247	0.59677	0.2450	274.7531	0.060019	1.72040343
1122	7.022868086	248	0.59919	0.2512	281.8925	0.063122	1.764433034
1123	7.023758955	249	0.60161	0.2575	289.1771	0.066308	1.808646715
1124	7.02464903	250	0.60402	0.2638	296.4857	0.069578	1.85294322
1126	7.026426809	251	0.60644	0.2701	304.0885	0.072933	1.89756251
1128	7.028201432	252	0.60886	0.2764	311.7305	0.076373	1.942291162
1130	7.029972912	253	0.61128	0.2827	319.4079	0.079898	1.987105207
1130	7.029972912	254	0.61370	0.2890	326.5455	0.083508	2.031509615
1134	7.033506484	255	0.61612	0.2953	334.8771	0.087206	2.077037429
1135	7.03438793	256	0.61854	0.3016	342.37	0.090991	2.121905957
1135.5	7.034828362	257	0.62096	0.3080	349.7331	0.094864	2.166721816
1136	7.035268599	258	0.62338	0.3144	357.1182	0.098825	2.211639188
1140	7.038783541	259	0.62580	0.3207	365.645	0.102875	2.257628335
1140.5	7.039222042	260	0.62822	0.3271	373.0936	0.107015	2.302751982
1141	7.03966035	261	0.63064	0.3335	380.5654	0.111247	2.347985211
1142	7.04053639	262	0.63305	0.3400	388.2266	0.115568	2.393452899
1146	7.044032897	263	0.63547	0.3464	396.9579	0.119983	2.439951594
1147.5	7.045340942	264	0.63789	0.3528	404.8743	0.12449	2.485819258
1148	7.045776577	265	0.64031	0.3593	412.4678	0.129091	2.531494479
1148	7.045776577	266	0.64273	0.3658	419.9031	0.133787	2.577128136

Table C-47. Sulfate Combined Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1149	7.046647278	267	0.64515	0.3723	427.7263	0.138577	2.623182041
1150	7.047517221	268	0.64757	0.3788	435.5808	0.143464	2.669359131
1150	7.047517221	269	0.64999	0.3853	443.0826	0.148448	2.715332558
1152	7.049254841	270	0.65241	0.3918	451.3864	0.15353	2.762099003
1152.5	7.049688775	271	0.65483	0.3984	459.1398	0.158711	2.80849706
1153	7.05012252	272	0.65725	0.4050	466.9181	0.163992	2.855012943
1160	7.056175284	273	0.65967	0.4115	477.3977	0.169373	2.903967267
1160	7.056175284	274	0.66208	0.4182	485.0637	0.174856	2.950598819
1160	7.056175284	275	0.66450	0.4248	492.7521	0.180443	2.997366744
1161	7.057036982	276	0.66692	0.4314	500.8931	0.186134	3.044634784
1162	7.057897937	277	0.66934	0.4381	509.0685	0.191929	3.092042336
1163	7.058758153	278	0.67176	0.4448	517.281	0.197831	3.139605482
1163	7.058758153	279	0.67418	0.4515	525.0778	0.203839	3.186928193
1163.5	7.059187983	280	0.67660	0.4582	533.1276	0.209957	3.234592304
1165	7.060476366	281	0.67902	0.4650	541.6742	0.216184	3.282813878
1165	7.060476366	282	0.68144	0.4717	549.5574	0.222523	3.330589583
1166	7.061334367	283	0.68386	0.4785	557.9442	0.228973	3.378928362
1166.5	7.061763091	284	0.68628	0.4853	566.1285	0.235538	3.427231028
1167	7.062191632	285	0.68870	0.4922	574.3447	0.242216	3.47569199
1170.65	7.065314429	286	0.69111	0.4990	584.1676	0.249012	3.525671888
1171	7.065613364	287	0.69353	0.5059	592.3991	0.255926	3.574434793
1173	7.067319849	288	0.69595	0.5128	601.5095	0.26296	3.624092291
1177	7.070724107	289	0.69837	0.5197	611.7151	0.270113	3.674824494
1180	7.073269717	290	0.70079	0.5267	621.4789	0.277389	3.725328568
1180	7.073269717	291	0.70321	0.5337	629.713	0.284788	3.774686538
1184	7.076653815	292	0.70563	0.5407	640.142	0.292314	3.826067149
1184	7.076653815	293	0.70805	0.5477	648.4687	0.299968	3.875834904
1185	7.077498054	294	0.71047	0.5548	657.3797	0.307748	3.926247996
1187	7.079184395	295	0.71289	0.5618	666.9018	0.315662	3.977355356
1188.5	7.080447287	296	0.71531	0.5690	676.2002	0.323707	4.028438897
1191	7.082548569	297	0.71773	0.5761	686.1311	0.331887	4.080232727
1191	7.082548569	298	0.72014	0.5833	694.675	0.340204	4.131040377
1192	7.083387848	299	0.72256	0.5905	703.8444	0.348659	4.182552949
1196	7.086737935	300	0.72498	0.5977	714.8594	0.357256	4.23580385
1196	7.086737935	301	0.72740	0.6050	723.5492	0.365994	4.287294145
1197	7.087573706	302	0.72982	0.6123	732.8894	0.374877	4.339521746
1198	7.088408779	303	0.73224	0.6196	742.2836	0.383907	4.391994812
1200	7.090076836	304	0.73466	0.6270	752.3604	0.393088	4.44524416
1200	7.090076836	305	0.73708	0.6344	761.2375	0.402418	4.49769373
1200	7.090076836	306	0.73950	0.6418	770.1583	0.411905	4.550401236
1202	7.091742115	307	0.74192	0.6493	780.4172	0.421546	4.604423705
1208	7.096721378	308	0.74434	0.6568	793.3795	0.431348	4.660921756
1208	7.096721378	309	0.74676	0.6643	802.4902	0.441312	4.714445121
1208	7.096721378	310	0.74917	0.6719	811.6477	0.451441	4.768242799
1214.3	7.101923058	311	0.75159	0.6795	825.1327	0.461738	4.8258494
1216	7.103322063	312	0.75401	0.6872	835.5999	0.472204	4.881196894
1219	7.105786129	313	0.75643	0.6949	847.0478	0.482846	4.93760475
1220.1	7.106688102	314	0.75885	0.7026	857.2568	0.493664	4.993243928
1224	7.109879463	315	0.76127	0.7104	869.5234	0.504661	5.050822415
1226	7.111512116	316	0.76369	0.7182	880.5391	0.515842	5.107638373
1226	7.111512116	317	0.76611	0.7261	890.187	0.527207	5.163601728
1230	7.114769448	318	0.76853	0.7340	902.8295	0.538767	5.222295552
1234.5	7.118421309	319	0.77095	0.7420	915.9596	0.550517	5.281641188
1235.5	7.119231025	320	0.77337	0.7500	926.5983	0.562468	5.339269679
1238	7.121252453	321	0.77579	0.7580	938.4492	0.574619	5.398169635
1241	7.123672785	322	0.77820	0.7661	950.7827	0.586974	5.457747911
1243	7.125283092	323	0.78062	0.7743	962.4556	0.599541	5.517110888
1245	7.126890809	324	0.78304	0.7825	974.2263	0.612324	5.576870821

Table C-47. Sulfate Combined Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1246	7.127693699	325	0.78546	0.7908	985.3042	0.625323	5.636393509
1249.25	7.13029865	326	0.78788	0.7991	998.2646	0.638547	5.697758476
1250	7.13089883	327	0.79030	0.8075	1009.329	0.651997	5.757937238
1250	7.13089883	328	0.79272	0.8159	1019.868	0.665683	5.818057959
1261	7.139660336	329	0.79514	0.8244	1039.546	0.679606	5.885806852
1267	7.14440718	330	0.79756	0.8329	1055.321	0.693771	5.950783145
1270	7.146772179	331	0.79998	0.8415	1068.755	0.708189	6.014291311
1272.4	7.14866016	332	0.80240	0.8502	1081.809	0.72286	6.077873531
1276.5	7.151877237	333	0.80482	0.8589	1096.446	0.73779	6.143085356
1296	7.167037877	334	0.80723	0.8678	1124.606	0.752992	6.219205494
1300	7.170119543	335	0.80965	0.8766	1139.607	0.768464	6.285477477
1309	7.177018766	336	0.81207	0.8856	1159.2	0.784219	6.355690418
1317	7.183111702	337	0.81449	0.8946	1178.152	0.800259	6.425811804
1330	7.192934221	338	0.81691	0.9037	1201.862	0.816594	6.499936338
1366	7.21964204	339	0.81933	0.9128	1246.908	0.833234	6.590209325
1400	7.244227516	340	0.82175	0.9221	1290.874	0.850181	6.679558453
1400	7.244227516	341	0.82417	0.9314	1303.915	0.867446	6.74704205
1419	7.257707677	342	0.82659	0.9408	1334.949	0.885044	6.827816792
1420	7.258412151	343	0.82901	0.9502	1349.354	0.902973	6.897300044
1426	7.262628601	344	0.83143	0.9598	1368.699	0.921249	6.970794713
1432	7.266827348	345	0.83385	0.9695	1388.286	0.939879	7.044997295
1439	7.271703707	346	0.83626	0.9792	1409.099	0.958874	7.120605798
1441	7.273092596	347	0.83868	0.9891	1425.238	0.978243	7.193538387
1494	7.309212366	348	0.84110	0.9990	1492.507	0.998002	7.301905705
1500	7.313220387	349	0.84352	1.0090	1513.558	1.018159	7.379323832
1510	7.31986493	350	0.84594	1.0192	1538.961	1.038727	7.460258203
1519	7.325807503	351	0.84836	1.0294	1563.7	1.059721	7.541387662
1527	7.331060305	352	0.85078	1.0398	1587.747	1.081147	7.622705217
1540	7.339537695	353	0.85320	1.0503	1617.389	1.103031	7.708368909
1563	7.35436233	354	0.85562	1.0608	1658.088	1.125375	7.801778891
1565.5	7.355960541	355	0.85804	1.0715	1677.498	1.148202	7.88221807
1575	7.362010551	356	0.86046	1.0824	1704.735	1.171528	7.96843007
1578	7.363913501	357	0.86288	1.0933	1725.276	1.195372	8.051193924
1588	7.370230642	358	0.86529	1.1044	1753.819	1.219743	8.139829241
1590	7.371489295	359	0.86771	1.1156	1773.883	1.244675	8.224001043
1624	7.392647521	360	0.87013	1.1270	1830.282	1.270176	8.331667695
1629	7.395721609	361	0.87255	1.1385	1854.677	1.296267	8.420304912
1634	7.398786275	362	0.87497	1.1502	1879.444	1.322985	8.510162878
1651	7.409136444	363	0.87739	1.1620	1918.53	1.350339	8.609719706
1665	7.417580402	364	0.87981	1.1740	1954.768	1.378358	8.708498104
1672	7.421775794	365	0.88223	1.1862	1983.333	1.40708	8.80373952
1683	7.428333194	366	0.88465	1.1985	2017.156	1.436517	8.903214147
1683	7.428333194	367	0.88707	1.2111	2038.245	1.466711	8.996295346
1703	7.440146681	368	0.88949	1.2238	2084.136	1.497692	9.105269575
1710	7.444248649	369	0.89191	1.2367	2114.802	1.529492	9.206498446
1722	7.451241685	370	0.89432	1.2499	2152.258	1.562149	9.313004845
1724	7.452402451	371	0.89674	1.2632	2177.783	1.595713	9.413989403
1726	7.453561872	372	0.89916	1.2768	2203.751	1.630209	9.516681046
1744	7.463936604	373	0.90158	1.2906	2250.839	1.665696	9.63309434
1751	7.467942332	374	0.90400	1.3047	2284.517	1.702224	9.743371242
1770	7.478734826	375	0.90642	1.3190	2334.685	1.739843	9.864683607
1788	7.488852956	376	0.90884	1.3336	2384.552	1.778601	9.987449608
1789	7.489412084	377	0.91126	1.3485	2412.554	1.818584	10.09983709
1790	7.489970899	378	0.91368	1.3638	2441.126	1.859835	10.21450584
1797	7.493873887	379	0.91610	1.3793	2478.583	1.90244	10.33622263
1803	7.497207223	380	0.91852	1.3952	2515.474	1.946472	10.45980607
1804	7.497761701	381	0.92094	1.4114	2546.152	1.992029	10.58228487
1804	7.497761701	382	0.92335	1.4280	2576.12	2.039197	10.70683709

Table C-47. Sulfate Combined Background Data Set, Filliben's Statistic Analysis (cont.)

Sulfate	Sulfate	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1808	7.499976541	383	0.92577	1.4450	2612.594	2.088079	10.83760729
1816	7.504391559	384	0.92819	1.4625	2655.833	2.138798	10.97489449
1816	7.504391559	385	0.93061	1.4804	2688.345	2.191484	11.10924864
1818	7.505492275	386	0.93303	1.4988	2724.739	2.246271	11.24890397
1831	7.512617545	387	0.93545	1.5177	2778.844	2.303306	11.40163456
1836	7.515344571	388	0.93787	1.5371	2822.175	2.362776	11.55208
1843.5	7.519421218	389	0.94029	1.5572	2870.707	2.424887	11.70928029
1844	7.519692404	390	0.94271	1.5779	2909.682	2.489828	11.86546355
1845.5	7.520505522	391	0.94513	1.5993	2951.577	2.55788	12.02782528
1848	7.521859252	392	0.94755	1.6215	2996.56	2.629312	12.19681036
1850	7.522940918	393	0.94997	1.6445	3042.364	2.704449	12.37163458
1866.5	7.531820298	394	0.95238	1.6684	3114.128	2.783664	12.56632737
1867	7.532088144	395	0.95480	1.6933	3161.454	2.867379	12.75433805
1869	7.533158807	396	0.95722	1.7193	3213.431	2.956101	12.95199739
1871	7.534228326	397	0.95964	1.7465	3267.792	3.05043	13.15889255
1873	7.535296702	398	0.96206	1.7751	3324.808	3.151067	13.3760896
1873.5	7.535563618	399	0.96448	1.8052	3382.096	3.258851	13.60341608
1877	7.537430037	400	0.96690	1.8371	3448.164	3.374793	13.84671924
1884	7.541152455	401	0.96932	1.8709	3524.731	3.500177	14.10856172
1885	7.5416831	402	0.97174	1.9070	3594.646	3.63655	14.38179299
1899	7.549082711	403	0.97416	1.9457	3694.971	3.785926	14.68859507
1904	7.551712215	404	0.97658	1.9877	3784.547	3.950882	15.01040607
1911	7.555381944	405	0.97900	2.0334	3885.885	4.134838	15.36334079
1916	7.557994959	406	0.98141	2.0839	3992.731	4.342593	15.75002127
1938	7.569411792	407	0.98383	2.1403	4147.858	4.580788	16.20064176
1955	7.578145472	408	0.98625	2.2044	4309.667	4.859526	16.70551591
1958	7.579678823	409	0.98867	2.2792	4462.661	5.194724	17.27555639
1959	7.580189418	410	0.99109	2.3694	4641.65	5.614044	17.96048115
1964	7.582738489	411	0.99351	2.4843	4879.242	6.171942	18.83809559
1971	7.586296307	412	0.99593	2.6462	5215.646	7.002338	20.07480437
1975	7.588323677	413	0.99832	2.9333	5793.272	8.604262	22.25884739

Table C-48. Sulfate Combined Background Data Set, Distribution Summary

Parameter	Distribution Type (tested)	Coefficient of Variation	Studentized Range Test	Coefficient of Skewness (-1 to 1)	Shapiro-Francia Test	Filliben's Statistic	Histogram	Probability Plot	Number of Samples	Distribution Type (determined)
Sulfate	Normal	Pass	Fail	Pass	Fail	Fail	X	X	413	Nonparametric
Sulfate	Lognormal	Pass	NA	Fail	Fail	Fail			413	

NA - not applicable

Table C-49. T_n Statistic Analysis for Sulfate Combined Background Data Set

Parameter	Distribution	Maximum Observation	Mean	Standard Deviation	T_n Statistic	N	Upper 5% Critical Value	Pass or Fail T_n Statistic
Sulfate	Normal	1975	1080.41	384.64	2.326	413	3.34+	Pass

N - number of samples

Table C-50. 95th Percentile for Combined Sulfate Background Data Set

Parameter	Distribution	Censored?	95th Percentile (mg/L)	Sample #
Sulfate	Nonparametric	No	1848.80	413

SD = standard deviation

Table C-51. Summary Table for Combined Sulfate Background Data Set

Parameter	Distribution	Mean	SD	95th Percentile (mg/L)	Range (normal)	Sample #
Sulfate	Nonparametric	1080.41	384.64	1848.80	1975 to 43.3	413

SD = standard deviation

Table D-1. TDS concentrations in alluvial ground water samples upgradient of the Homestake Site, Grants, New Mexico from July 1978 to May 1999.

Well ID	DD	ND	P	P1	P2	P3	P4	Q	R	All wells	914	916	920	921	922	950	All Wells
1st sampling date	15-Sep-81	12-Jan-83	11-Jul-78	21-Sep-92	21-Sep-92	23-Apr-98	24-Apr-98	10-Jul-78	10-Jul-78	10-Jul-78	10-Jan-83	21-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81	28-Feb-94	03-Nov-81
Most recent sampling date	20-Apr-99	05-Aug-98	10-May-99	21-Jan-99	11-May-99	23-Apr-98	24-Apr-98	02-Mar-99	20-May-99	20-May-99	19-May-99	20-May-99	19-May-99	19-May-99	19-May-99	25-Jan-96	20-May-99
Total number of measurements	53	13	106	33	33	1	1	73	80	393	7	6	19	6	7	3	48
Number of independent measurements	49	13	85	27	27	1	1	64	64	331	7	6	18	6	7	3	47
Percent nondetect of total number of measurements	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Minimum	2400	954	1210	2000	2000	1900	1610	1280	1190	954	430	318	2420	2388	900	1671	318
Median	3020.0	1060.0	1655.0	2090.0	2080.0	1900.0	1610.0	2012.5	1390.0	1840.0	1260.0	361.0	2660.0	2551.0	1060.0	1832.0	2388.0
Mean	2996.0	1101.3	1620.3	2095.3	2068.7	1900.0	1610.0	1974.4	1490.3	1923.0	1139.1	356.8	2633.3	2542.0	1053.3	1794.0	1819.6
Maximum	4250	1430	1890	2210	2130	1900	1610	2360	2110	4250	1418	393	2930	2640	1222	1879	2930
Percent greater than or equal to the NM site standard (1770 mg/L)	100.00%	0.00%	8.24%	100.00%	100.00%	100.00%	0.00%	89.06%	18.75%	54.38%	0.00%	0.00%	100.00%	100.00%	0.00%	66.67%	55.32%

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
DD	15-Sep-81	TDS	Homestake	None	2910
DD	24-Mar-82	TDS	Homestake	None	2770
DD	26-May-82	TDS	Homestake	None	2960
DD	18-Nov-82	TDS	Homestake	None	3060
DD	04-Mar-83	TDS	Homestake	None	3010
DD	28-Jun-83	TDS	NMEID	None	3035
DD	28-Jun-83	TDS	Homestake	None	3070
DD	14-Sep-83	TDS	Homestake	None	3130
DD	19-Dec-83	TDS	Homestake	None	2970
DD	07-Mar-84	TDS	Homestake	None	2950
DD	09-May-84	TDS	Homestake	None	2930
DD	12-Sep-84	TDS	Homestake	None	3070
DD	12-Dec-84	TDS	Homestake	None	3000
DD	13-Mar-85	TDS	Homestake	None	3020
DD	06-Jun-85	TDS	Homestake	None	3040
DD	04-Sep-85	TDS	Homestake	None	2710
DD	16-Dec-85	TDS	Homestake	None	2560
DD	20-Mar-86	TDS	Homestake	None	2430
DD	30-Jun-86	TDS	Homestake	None	3200
DD	15-Sep-86	TDS	Homestake	None	3110
DD	09-Dec-86	TDS	Homestake	None	2810
DD	19-Mar-87	TDS	Homestake	None	2670
DD	24-Jun-87	TDS	Homestake	None	3020
DD	15-Sep-87	TDS	Homestake	None	2400
DD	08-Dec-87	TDS	Homestake	None	2640
DD	24-Feb-88	TDS	Homestake	None	2580
DD	09-Jun-88	TDS	Homestake	None	3050
DD	11-Oct-88	TDS	Homestake	None	3110
DD	08-Dec-88	TDS	Homestake	None	3000
DD	13-Dec-88	TDS	Barringer	None	3280
DD	13-Dec-88	TDS	Homestake	None	3200
DD	11-Jan-89	TDS	Barringer	None	3260
DD	11-Jan-89	TDS	Homestake	None	2740
DD	15-Feb-89	TDS	Barringer	None	3250
DD	15-Feb-89	TDS	Homestake	None	2980
DD	29-Mar-89	TDS	Homestake	None	2830
DD	13-Jun-89	TDS	Homestake	None	4250
DD	15-Nov-89	TDS	Homestake	None	3060
DD	13-Mar-90	TDS	Homestake	None	3230
DD	12-Sep-90	TDS	Homestake	None	2696
DD	27-Feb-91	TDS	Homestake	None	3160
DD	16-Sep-91	TDS	Homestake	None	3330
DD	09-Mar-92	TDS	Homestake	None	3280
DD	22-Sep-92	TDS	Homestake	None	3190
DD	21-Oct-93	TDS	Energy Labs	None	3161

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
DD	09-Mar-94	TDS	Energy Labs	None	3109
DD	21-Oct-94	TDS	Energy Labs	None	3128
DD	10-Oct-95	TDS	Energy Labs	None	3054
DD	10-Oct-96	TDS	Energy Labs	None	3050
DD	14-Apr-97	TDS	Energy Labs	None	3010
DD	09-Sep-97	TDS	Energy Labs	None	2950
DD	01-Apr-98	TDS	Energy Labs	None	2930
DD	20-Apr-99	TDS	Energy Labs	None	2870
ND	12-Jan-83	TDS	Homestake	None	1430
ND	06-Jan-84	TDS	Homestake	None	1320
ND	18-Dec-89	TDS	Homestake	None	1090
ND	17-Oct-90	TDS	Homestake	None	1150
ND	16-Sep-91	TDS	Homestake	None	1160
ND	18-Aug-92	TDS	Homestake	None	1040
ND	25-Aug-93	TDS	Energy Labs	None	957
ND	14-Mar-94	TDS	Energy Labs	None	1053
ND	22-Aug-94	TDS	Energy Labs	None	976
ND	22-Aug-95	TDS	Energy Labs	None	954
ND	29-Jul-96	TDS	Energy Labs	None	1057
ND	11-Aug-97	TDS	Energy Labs	None	1070
ND	05-Aug-98	TDS	Energy Labs	None	1060
P	11-Jul-78	TDS	NMEID	None	1530
P	23-Oct-78	TDS	NMEID	None	1560
P	30-Jan-79	TDS	NMEID	None	1582
P	30-Apr-79	TDS	NMEID	None	1580
P	17-Apr-80	TDS	NMEID	None	1410
P	16-Jul-80	TDS	NMEID	None	1570
P	13-Oct-80	TDS	NMEID	None	1590
P	07-Jan-81	TDS	Homestake	None	1710
P	07-Jan-81	TDS	NMEID	None	1569
P	15-Apr-81	TDS	Homestake	None	1520
P	15-Apr-81	TDS	NMEID	None	1570
P	07-Jul-81	TDS	Homestake	None	1710
P	07-Oct-81	TDS	Homestake	None	1660
P	28-Dec-81	TDS	NMEID	None	1533
P	28-Dec-81	TDS	Homestake	None	1540
P	24-Mar-82	TDS	Homestake	None	1490
P	24-Mar-82	TDS	NMEID	None	1518
P	22-May-82	TDS	Homestake	None	1500
P	25-Aug-82	TDS	Homestake	None	1620
P	18-Nov-82	TDS	Homestake	None	1470
P	18-Nov-82	TDS	Controls for Env Pollution	None	1745
P	18-Nov-82	TDS	Assaigai Lab	None	1690

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P	18-Nov-82	TDS	Controls for Env Pollution	None	1745
P	23-Feb-83	TDS	Homestake	None	1610
P	26-May-83	TDS	Homestake	None	1580
P	27-Jun-83	TDS	Homestake	None	1640
P	27-Jun-83	TDS	NMEID	None	1599
P	12-Sep-83	TDS	Homestake	None	1590
P	19-Dec-83	TDS	Homestake	None	1640
P	07-Mar-84	TDS	Homestake	None	1440
P	09-May-84	TDS	Homestake	None	1470
P	12-Sep-84	TDS	Homestake	None	1610
P	13-Dec-84	TDS	Homestake	None	1450
P	11-Mar-85	TDS	Homestake	None	1390
P	11-Mar-85	TDS	Controls for Env Pollution	None	1740
P	29-May-85	TDS	Homestake	None	1580
P	04-Sep-85	TDS	Homestake	None	1210
P	16-Dec-85	TDS	Homestake	None	1720
P	10-Mar-86	TDS	Homestake	None	1220
P	30-Jun-86	TDS	Homestake	None	1710
P	15-Sep-86	TDS	Homestake	None	1670
P	15-Sep-86	TDS	Controls for Env Pollution	None	1730
P	16-Dec-86	TDS	Homestake	None	1310
P	19-Mar-87	TDS	Homestake	None	1600
P	19-Mar-87	TDS	Controls for Env Pollution	None	1710
P	24-Jun-87	TDS	Homestake	None	1700
P	16-Sep-87	TDS	Homestake	None	1260
P	16-Sep-87	TDS	Controls for Env Pollution	None	1660
P	08-Dec-87	TDS	Homestake	None	1620
P	24-Feb-88	TDS	Homestake	None	1740
P	24-Feb-88	TDS	Barringer	None	1580
P	12-May-88	TDS	Homestake	None	1310
P	23-Aug-88	TDS	Homestake	None	1280
P	23-Aug-88	TDS	Barringer	None	1650
P	12-Oct-88	TDS	Homestake	None	1650
P	13-Dec-88	TDS	Homestake	None	1650
P	13-Dec-88	TDS	Barringer	None	1700
P	11-Jan-89	TDS	Homestake	None	1670
P	11-Jan-89	TDS	Barringer	None	1660
P	15-Feb-89	TDS	Homestake	None	1730
P	15-Feb-89	TDS	Barringer	None	1740
P	16-May-89	TDS	Homestake	None	1620

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P	10-Aug-89	TDS	Homestake	None	1680
P	15-Nov-89	TDS	Homestake	None	1570
P	13-Mar-90	TDS	Homestake	None	1580
P	04-Jun-90	TDS	Homestake	None	1680
P	12-Sep-90	TDS	Homestake	None	1420
P	03-Dec-90	TDS	Homestake	None	1320
P	03-Dec-90	TDS	Barringer	None	1580
P	27-Feb-91	TDS	Homestake	None	1650
P	03-Jun-91	TDS	Homestake	None	1700
P	16-Sep-91	TDS	Homestake	None	1700
P	18-Nov-91	TDS	Homestake	None	1670
P	09-Mar-92	TDS	Homestake	None	1770
P	04-Jun-92	TDS	Homestake	None	1760
P	21-Sep-92	TDS	Homestake	None	1720
P	03-Dec-92	TDS	Homestake	None	1710
P	03-Mar-93	TDS	Homestake	None	1740
P	01-Jun-93	TDS	Homestake	None	1790
P	08-Sep-93	TDS	Energy Labs	None	1506
P	24-Nov-93	TDS	Energy Labs	None	1686
P	01-Mar-94	TDS	Energy Labs	None	1461
P	31-May-94	TDS	Energy Labs	None	1655
P	01-Sep-94	TDS	Energy Labs	None	1704
P	28-Nov-94	TDS	Energy Labs	None	1707
P	16-Mar-95	TDS	Energy Labs	None	1680
P	16-Mar-95	TDS	Energy Labs	None	1685
P	06-Jun-95	TDS	Energy Labs	None	1729
P	05-Sep-95	TDS	Energy Labs	None	1681
P	05-Dec-95	TDS	Energy Labs	None	1703
P	05-Dec-95	TDS	Energy Labs	None	1698
P	11-Mar-96	TDS	Energy Labs	None	1628
P	03-Jun-96	TDS	Energy Labs	None	1669
P	17-Sep-96	TDS	Energy Labs	None	1720
P	10-Oct-96	TDS	Energy Labs	None	1680
P	06-Mar-97	TDS	Energy Labs	None	1670
P	27-May-97	TDS	Energy Labs	None	1680
P	09-Sep-97	TDS	Energy Labs	None	1560
P	03-Nov-97	TDS	Energy Labs	None	1660
P	04-Mar-98	TDS	Energy Labs	None	1700
P	05-May-98	TDS	Energy Labs	None	1870
P	16-Sep-98	TDS	Energy Labs	None	1890
P	12-Nov-98	TDS	Energy Labs	None	1860
P	02-Mar-99	TDS	Energy Labs	None	1830
P	02-Mar-99	TDS	ACZ Lab	None	1780
P	10-May-99	TDS	Energy Labs	None	1790
P1	21-Sep-92	TDS	Homestake	None	2000

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P1	21-Jan-93	TDS	Homestake	None	2110
P1	21-Jan-93	TDS	Energy Labs	None	2273
P1	13-Apr-93	TDS	Homestake	None	2130
P1	13-Jul-93	TDS	Homestake	None	2090
P1	21-Oct-93	TDS	Energy Labs	None	2023
P1	04-Jan-94	TDS	Energy Labs	None	2062
P1	07-Mar-94	TDS	Energy Labs	None	2040
P1	12-Apr-94	TDS	Energy Labs	None	2058
P1	06-Jul-94	TDS	Energy Labs	None	2063
P1	21-Oct-94	TDS	Energy Labs	None	2006
P1	04-Jan-95	TDS	Energy Labs	None	2091
P1	04-Jan-95	TDS	Energy Labs	None	2088
P1	12-Apr-95	TDS	Energy Labs	None	2104
P1	06-Jul-95	TDS	Energy Labs	None	2072
P1	03-Oct-95	TDS	Energy Labs	None	2083
P1	10-Jan-96	TDS	Energy Labs	None	2113
P1	10-Jan-96	TDS	Energy Labs	None	2114
P1	09-Apr-96	TDS	Energy Labs	None	2072
P1	09-Apr-96	TDS	Energy Labs	None	2079
P1	19-Jul-96	TDS	Energy Labs	None	2195
P1	19-Jul-96	TDS	Energy Labs	None	2187
P1	04-Nov-96	TDS	Energy Labs	None	2090
P1	04-Nov-96	TDS	Energy Labs	None	2110
P1	13-Jan-97	TDS	Energy Labs	None	2030
P1	14-Apr-97	TDS	Energy Labs	None	2120
P1	08-Jul-97	TDS	Energy Labs	None	2100
P1	03-Nov-97	TDS	Energy Labs	None	2090
P1	19-Jan-98	TDS	Energy Labs	None	2130
P1	01-Apr-98	TDS	Energy Labs	None	2140
P1	14-Jul-98	TDS	Energy Labs	None	2210
P1	28-Oct-98	TDS	Energy Labs	None	2110
P1	21-Jan-99	TDS	Energy Labs	None	2150
P2	21-Sep-92	TDS	Homestake	None	2130
P2	08-Feb-93	TDS	Homestake	None	2080
P2	08-Feb-93	TDS	Energy Labs	None	1927
P2	04-May-93	TDS	Homestake	None	2180
P2	04-May-93	TDS	Energy Labs	None	2030
P2	12-Aug-93	TDS	Homestake	None	2110
P2	01-Nov-93	TDS	Energy Labs	None	2002
P2	01-Nov-93	TDS	Energy Labs	None	2019
P2	02-Feb-94	TDS	Energy Labs	None	2080
P2	07-Mar-94	TDS	Energy Labs	None	2006
P2	29-Apr-94	TDS	Energy Labs	None	2092
P2	29-Apr-94	TDS	Energy Labs	None	2073
P2	01-Aug-94	TDS	Energy Labs	None	2027

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
P2	01-Nov-94	TDS	Energy Labs	None	2106
P2	03-Feb-95	TDS	Energy Labs	None	2092
P2	05-May-95	TDS	Energy Labs	None	2101
P2	02-Aug-95	TDS	Energy Labs	None	2108
P2	02-Aug-95	TDS	Energy Labs	None	2121
P2	06-Nov-95	TDS	Energy Labs	None	2065
P2	12-Feb-96	TDS	Energy Labs	None	2083
P2	14-May-96	TDS	Energy Labs	None	2082
P2	14-May-96	TDS	Energy Labs	None	2096
P2	29-Jul-96	TDS	Energy Labs	None	2110
P2	03-Feb-97	TDS	Energy Labs	None	2050
P2	29-Apr-97	TDS	Energy Labs	None	2070
P2	28-Jul-97	TDS	Energy Labs	None	2050
P2	13-Oct-97	TDS	Energy Labs	None	2070
P2	10-Feb-98	TDS	Energy Labs	None	2080
P2	05-May-98	TDS	Energy Labs	None	2060
P2	04-Aug-98	TDS	Energy Labs	None	2090
P2	28-Oct-98	TDS	Energy Labs	None	2000
P2	03-Feb-99	TDS	Energy Labs	None	2000
P2	11-May-99	TDS	Energy Labs	None	2070
P3	23-Apr-98	TDS	Energy Labs	None	1900
P4	24-Apr-98	TDS	Energy Labs	None	1610
Q	10-Jul-78	TDS	NMEID	None	2090
Q	23-Oct-78	TDS	NMEID	None	2150
Q	30-Jan-79	TDS	NMEID	None	2264
Q	30-Apr-79	TDS	NMEID	None	2114
Q	17-Apr-80	TDS	NMEID	None	2101
Q	16-Jul-80	TDS	NMEID	None	2097
Q	13-Oct-80	TDS	NMEID	None	2118
Q	07-Jan-81	TDS	Homestake	None	2300
Q	07-Jan-81	TDS	NMEID	None	2206
Q	15-Apr-81	TDS	Homestake	None	2180
Q	15-Apr-81	TDS	NMEID	None	2302
Q	07-Jul-81	TDS	Homestake	None	2360
Q	07-Oct-81	TDS	Homestake	None	2170
Q	28-Dec-81	TDS	Homestake	None	2100
Q	28-Dec-81	TDS	NMEID	None	2192
Q	24-Mar-82	TDS	Homestake	None	1950
Q	24-Mar-82	TDS	NMEID	None	1965
Q	22-May-82	TDS	Homestake	None	1960
Q	25-Aug-82	TDS	Homestake	None	2000
Q	18-Nov-82	TDS	Homestake	None	1840
Q	23-Feb-83	TDS	Homestake	None	1810
Q	26-May-83	TDS	Homestake	None	1960
Q	28-Jun-83	TDS	NMEID	None	2090

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
Q	28-Jun-83	TDS	Homestake	None	2010
Q	21-Sep-83	TDS	Homestake	None	2090
Q	19-Dec-83	TDS	Homestake	None	2020
Q	07-Mar-84	TDS	Homestake	None	1800
Q	09-May-84	TDS	Homestake	None	2010
Q	12-Sep-84	TDS	Homestake	None	2030
Q	12-Dec-84	TDS	Homestake	None	1820
Q	11-Mar-85	TDS	Homestake	None	1770
Q	29-May-85	TDS	Homestake	None	1940
Q	06-Sep-85	TDS	Homestake	None	1780
Q	16-Dec-85	TDS	Homestake	None	1930
Q	10-Mar-86	TDS	Homestake	None	1370
Q	30-Jun-86	TDS	Homestake	None	2060
Q	15-Sep-86	TDS	Homestake	None	2010
Q	15-Dec-86	TDS	Homestake	None	1720
Q	19-Mar-87	TDS	Homestake	None	1810
Q	19-Jun-87	TDS	Homestake	None	1630
Q	15-Sep-87	TDS	Homestake	None	1280
Q	08-Dec-87	TDS	Homestake	None	1730
Q	24-Feb-88	TDS	Homestake	None	1970
Q	12-May-88	TDS	Homestake	None	1570
Q	23-Aug-88	TDS	Homestake	None	1870
Q	03-Nov-88	TDS	Homestake	None	1970
Q	13-Dec-88	TDS	Homestake	None	1890
Q	13-Dec-88	TDS	Barringer	None	2060
Q	11-Jan-89	TDS	Homestake	None	2000
Q	11-Jan-89	TDS	Barringer	None	2000
Q	15-Feb-89	TDS	Homestake	None	2050
Q	15-Feb-89	TDS	Barringer	None	2060
Q	16-May-89	TDS	Homestake	None	1430
Q	15-Nov-89	TDS	Homestake	None	2000
Q	13-Mar-90	TDS	Homestake	None	1970
Q	12-Sep-90	TDS	Homestake	None	1960
Q	27-Feb-91	TDS	Homestake	None	2000
Q	16-Sep-91	TDS	Homestake	None	2040
Q	09-Mar-92	TDS	Homestake	None	2130
Q	16-Sep-92	TDS	Homestake	None	2060
Q	03-Mar-93	TDS	Homestake	None	2060
Q	08-Sep-93	TDS	Energy Labs	None	2048
Q	01-Mar-94	TDS	Energy Labs	None	1924
Q	01-Mar-94	TDS	Energy Labs	None	1906
Q	01-Sep-94	TDS	Energy Labs	None	2016
Q	16-Mar-95	TDS	Energy Labs	None	2068
Q	05-Sep-95	TDS	Energy Labs	None	2015
Q	11-Mar-96	TDS	Energy Labs	None	2070

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
Q	17-Sep-96	TDS	Energy Labs	None	2086
Q	06-Mar-97	TDS	Energy Labs	None	2090
Q	09-Sep-97	TDS	Energy Labs	None	2140
Q	04-Mar-98	TDS	Energy Labs	None	2120
Q	02-Mar-99	TDS	Energy Labs	None	2250
R	10-Jul-78	TDS	NMEID	None	1333
R	23-Oct-78	TDS	NMEID	None	1325
R	31-Jan-79	TDS	NMEID	None	1330
R	30-Apr-79	TDS	NMEID	None	1315
R	07-Jan-80	TDS	NMEID	None	1229
R	17-Apr-80	TDS	NMEID	None	1269
R	16-Jul-80	TDS	NMEID	None	1291
R	13-Oct-80	TDS	NMEID	None	1262
R	15-Apr-81	TDS	Homestake	None	1210
R	15-Apr-81	TDS	NMEID	None	1274
R	07-Jul-81	TDS	Homestake	None	1300
R	28-Dec-81	TDS	Homestake	None	1240
R	28-Dec-81	TDS	NMEID	None	1283
R	24-Mar-82	TDS	Homestake	None	1290
R	24-Mar-82	TDS	NMEID	None	1295
R	22-May-82	TDS	Homestake	None	1260
R	25-Aug-82	TDS	Homestake	None	1320
R	18-Nov-82	TDS	Homestake	None	1220
R	23-Feb-83	TDS	Homestake	None	1310
R	26-May-83	TDS	Homestake	None	1220
R	28-Jun-83	TDS	Homestake	None	1310
R	28-Jun-83	TDS	NMEID	None	1330
R	12-Sep-83	TDS	Homestake	None	1320
R	20-Dec-83	TDS	Homestake	None	1270
R	07-Mar-84	TDS	Homestake	None	1190
R	09-May-84	TDS	Homestake	None	1320
R	12-Sep-84	TDS	Homestake	None	1350
R	12-Dec-84	TDS	Homestake	None	1270
R	11-Mar-85	TDS	Homestake	None	1240
R	11-Mar-85	TDS	Controls for Env Pollution	None	1410
R	29-May-85	TDS	Homestake	None	1350
R	05-Sep-85	TDS	Homestake	None	1410
R	16-Dec-85	TDS	Homestake	None	1400
R	10-Mar-86	TDS	Homestake	None	1420
R	30-Jun-86	TDS	Homestake	None	1490
R	15-Sep-86	TDS	Homestake	None	1350
R	15-Sep-86	TDS	Controls for Env Pollution	None	1470
R	15-Dec-86	TDS	Homestake	None	1310
R	19-Mar-87	TDS	Homestake	None	1190

Table D-2. TDS Near Upgradient Background Data Set
(data not corrected for non-detects or duplicates) (continued)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
R	19-Mar-87	TDS	Controls for Env Pollution	None	1560
R	19-Jun-87	TDS	Homestake	None	1390
R	15-Sep-87	TDS	Homestake	None	1950
R	15-Sep-87	TDS	Controls for Env Pollution	None	1520
R	08-Dec-87	TDS	Homestake	None	1210
R	24-Feb-88	TDS	Homestake	None	1190
R	24-Feb-88	TDS	Barringer	None	1440
R	12-May-88	TDS	Homestake	None	1480
R	22-Aug-88	TDS	Homestake	None	1350
R	22-Aug-88	TDS	Barringer	None	1530
R	03-Nov-88	TDS	Homestake	None	1340
R	13-Dec-88	TDS	Homestake	None	1590
R	13-Dec-88	TDS	Barringer	None	1600
R	11-Jan-89	TDS	Homestake	None	1640
R	11-Jan-89	TDS	Barringer	None	1560
R	15-Feb-89	TDS	Homestake	None	1560
R	15-Feb-89	TDS	Barringer	None	1570
R	16-May-89	TDS	Homestake	None	1390
R	15-Nov-89	TDS	Homestake	None	1500
R	13-Mar-90	TDS	Homestake	None	1560
R	12-Sep-90	TDS	Homestake	None	1490
R	27-Feb-91	TDS	Homestake	None	1650
R	16-Sep-91	TDS	Homestake	None	1700
R	09-Mar-92	TDS	Homestake	None	1770
R	16-Sep-92	TDS	Homestake	None	1710
R	16-Sep-92	TDS	Energy Labs	None	1655
R	01-Jun-93	TDS	Homestake	None	1760
R	08-Sep-93	TDS	Energy Labs	None	1776
R	07-Mar-94	TDS	Energy Labs	None	1797
R	31-May-94	TDS	Energy Labs	None	1601
R	01-Sep-94	TDS	Energy Labs	None	1817
R	06-Jun-95	TDS	Energy Labs	None	1873
R	06-Jun-95	TDS	Energy Labs	None	1862
R	05-Sep-95	TDS	Energy Labs	None	1888
R	05-Sep-95	TDS	Energy Labs	None	1884
R	03-Jun-96	TDS	Energy Labs	None	1943
R	17-Sep-96	TDS	Energy Labs	None	2029
R	10-Oct-96	TDS	Energy Labs	None	1970
R	27-May-97	TDS	Energy Labs	None	2050
R	06-May-98	TDS	Energy Labs	None	2050
R	20-May-99	TDS	Energy Labs	None	2110

Table D-3. TDS Near Upgradient Background Data Set for Well DD
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
15-Sep-81	TDS	2910
24-Mar-82	TDS	2770
26-May-82	TDS	2960
18-Nov-82	TDS	3060
04-Mar-83	TDS	3010
28-Jun-83	TDS	3052.5
14-Sep-83	TDS	3130
19-Dec-83	TDS	2970
07-Mar-84	TDS	2950
09-May-84	TDS	2930
12-Sep-84	TDS	3070
12-Dec-84	TDS	3000
13-Mar-85	TDS	3020
06-Jun-85	TDS	3040
04-Sep-85	TDS	2710
16-Dec-85	TDS	2560
20-Mar-86	TDS	2430
30-Jun-86	TDS	3200
15-Sep-86	TDS	3110
09-Dec-86	TDS	2810
19-Mar-87	TDS	2670
24-Jun-87	TDS	3020
15-Sep-87	TDS	2400
08-Dec-87	TDS	2640
24-Feb-88	TDS	2580
09-Jun-88	TDS	3050
11-Oct-88	TDS	3110
08-Dec-88	TDS	3000
13-Dec-88	TDS	3240
11-Jan-89	TDS	3000
15-Feb-89	TDS	3115
29-Mar-89	TDS	2830
13-Jun-89	TDS	4250
15-Nov-89	TDS	3060
13-Mar-90	TDS	3230
12-Sep-90	TDS	2696
27-Feb-91	TDS	3160
16-Sep-91	TDS	3330
09-Mar-92	TDS	3280
22-Sep-92	TDS	3190
21-Oct-93	TDS	3161
09-Mar-94	TDS	3109
21-Oct-94	TDS	3128
10-Oct-95	TDS	3054
10-Oct-96	TDS	3050
14-Apr-97	TDS	3010
09-Sep-97	TDS	2950
01-Apr-98	TDS	2930
20-Apr-99	TDS	2870

Table D-4. TDS Near Upgradient Background Data Set for Well ND
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
12-Jan-83	TDS	1430
06-Jan-84	TDS	1320
18-Dec-89	TDS	1090
17-Oct-90	TDS	1150
16-Sep-91	TDS	1160
18-Aug-92	TDS	1040
25-Aug-93	TDS	957
14-Mar-94	TDS	1053
22-Aug-94	TDS	976
22-Aug-95	TDS	954
29-Jul-96	TDS	1057
11-Aug-97	TDS	1070
05-Aug-98	TDS	1060

Table D-5. TDS Near Upgradient Background Data Set for Well P
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
11-Jul-78	TDS	1530
23-Oct-78	TDS	1560
30-Jan-79	TDS	1582
30-Apr-79	TDS	1580
17-Apr-80	TDS	1410
16-Jul-80	TDS	1570
13-Oct-80	TDS	1590
07-Jan-81	TDS	1639.5
15-Apr-81	TDS	1545
07-Jul-81	TDS	1710
07-Oct-81	TDS	1660
28-Dec-81	TDS	1536.5
24-Mar-82	TDS	1504
22-May-82	TDS	1500
25-Aug-82	TDS	1620
18-Nov-82	TDS	1662.5
23-Feb-83	TDS	1610
26-May-83	TDS	1580
27-Jun-83	TDS	1619.5
12-Sep-83	TDS	1590
19-Dec-83	TDS	1640
07-Mar-84	TDS	1440
09-May-84	TDS	1470
12-Sep-84	TDS	1610
13-Dec-84	TDS	1450
11-Mar-85	TDS	1565
29-May-85	TDS	1580
04-Sep-85	TDS	1210
16-Dec-85	TDS	1720
10-Mar-86	TDS	1220
30-Jun-86	TDS	1710
15-Sep-86	TDS	1700
16-Dec-86	TDS	1310
19-Mar-87	TDS	1655
24-Jun-87	TDS	1700
16-Sep-87	TDS	1460
08-Dec-87	TDS	1620
24-Feb-88	TDS	1660
12-May-88	TDS	1310
23-Aug-88	TDS	1465
12-Oct-88	TDS	1650
13-Dec-88	TDS	1675
11-Jan-89	TDS	1665
15-Feb-89	TDS	1735
16-May-89	TDS	1620
10-Aug-89	TDS	1680

Table D-5. TDS Near Upgradient Background Data Set for Well P
(corrected for non-detects and duplicates) (cont.)

Sample Date	Parameter Code	Final Data Set
15-Nov-89	TDS	1570
13-Mar-90	TDS	1580
04-Jun-90	TDS	1680
12-Sep-90	TDS	1420
03-Dec-90	TDS	1450
27-Feb-91	TDS	1650
03-Jun-91	TDS	1700
16-Sep-91	TDS	1700
18-Nov-91	TDS	1670
09-Mar-92	TDS	1770
04-Jun-92	TDS	1760
21-Sep-92	TDS	1720
03-Dec-92	TDS	1710
03-Mar-93	TDS	1740
01-Jun-93	TDS	1790
08-Sep-93	TDS	1506
24-Nov-93	TDS	1686
01-Mar-94	TDS	1461
31-May-94	TDS	1655
01-Sep-94	TDS	1704
28-Nov-94	TDS	1707
16-Mar-95	TDS	1682.5
06-Jun-95	TDS	1729
05-Sep-95	TDS	1681
05-Dec-95	TDS	1700.5
11-Mar-96	TDS	1628
03-Jun-96	TDS	1669
17-Sep-96	TDS	1720
10-Oct-96	TDS	1680
06-Mar-97	TDS	1670
27-May-97	TDS	1680
09-Sep-97	TDS	1560
03-Nov-97	TDS	1660
04-Mar-98	TDS	1700
05-May-98	TDS	1870
16-Sep-98	TDS	1890
12-Nov-98	TDS	1860
02-Mar-99	TDS	1805
10-May-99	TDS	1790

Table D-6. TDS Near Upgradient Background Data Set for Well P1
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Sep-92	TDS	2000
21-Jan-93	TDS	2191.5
13-Apr-93	TDS	2130
13-Jul-93	TDS	2090
21-Oct-93	TDS	2023
04-Jan-94	TDS	2062
07-Mar-94	TDS	2040
12-Apr-94	TDS	2058
06-Jul-94	TDS	2063
21-Oct-94	TDS	2006
04-Jan-95	TDS	2089.5
12-Apr-95	TDS	2104
06-Jul-95	TDS	2072
03-Oct-95	TDS	2083
10-Jan-96	TDS	2113.5
09-Apr-96	TDS	2075.5
19-Jul-96	TDS	2191
04-Nov-96	TDS	2100
13-Jan-97	TDS	2030
14-Apr-97	TDS	2120
08-Jul-97	TDS	2100
03-Nov-97	TDS	2090
19-Jan-98	TDS	2130
01-Apr-98	TDS	2140
14-Jul-98	TDS	2210
28-Oct-98	TDS	2110
21-Jan-99	TDS	2150

Table D-7. TDS Near Upgradient Background Data Set for Well P2
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Sep-92	TDS	2130
08-Feb-93	TDS	2003.5
04-May-93	TDS	2105
12-Aug-93	TDS	2110
01-Nov-93	TDS	2010.5
02-Feb-94	TDS	2080
07-Mar-94	TDS	2006
29-Apr-94	TDS	2082.5
01-Aug-94	TDS	2027
01-Nov-94	TDS	2106
03-Feb-95	TDS	2092
05-May-95	TDS	2101
02-Aug-95	TDS	2114.5
06-Nov-95	TDS	2065
12-Feb-96	TDS	2083
14-May-96	TDS	2089
29-Jul-96	TDS	2110
03-Feb-97	TDS	2050
29-Apr-97	TDS	2070
28-Jul-97	TDS	2050
13-Oct-97	TDS	2070
10-Feb-98	TDS	2080
05-May-98	TDS	2060
04-Aug-98	TDS	2090
28-Oct-98	TDS	2000
03-Feb-99	TDS	2000
11-May-99	TDS	2070

Table D-8. TDS Near Upgradient Background Data Set for Wells P3 and P4
(corrected for non-detects and duplicates)

Name	Date	Code	Set
P3	23-Apr-98	TDS	1900
P4	24-Apr-98	TDS	1610

Table D-9. TDS Near Upgradient Background Data Set for Well Q
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
10-Jul-78	TDS	2090
23-Oct-78	TDS	2150
30-Jan-79	TDS	2264
30-Apr-79	TDS	2114
17-Apr-80	TDS	2101
16-Jul-80	TDS	2097
13-Oct-80	TDS	2118
07-Jan-81	TDS	2253
15-Apr-81	TDS	2241
07-Jul-81	TDS	2360
07-Oct-81	TDS	2170
28-Dec-81	TDS	2146
24-Mar-82	TDS	1957.5
22-May-82	TDS	1960
25-Aug-82	TDS	2000
18-Nov-82	TDS	1840
23-Feb-83	TDS	1810
26-May-83	TDS	1960
28-Jun-83	TDS	2050
21-Sep-83	TDS	2090
19-Dec-83	TDS	2020
07-Mar-84	TDS	1800
09-May-84	TDS	2010
12-Sep-84	TDS	2030
12-Dec-84	TDS	1820
11-Mar-85	TDS	1770
29-May-85	TDS	1940
06-Sep-85	TDS	1780
16-Dec-85	TDS	1930
10-Mar-86	TDS	1370
30-Jun-86	TDS	2060
15-Sep-86	TDS	2010
15-Dec-86	TDS	1720
19-Mar-87	TDS	1810
19-Jun-87	TDS	1630
15-Sep-87	TDS	1280
08-Dec-87	TDS	1730
24-Feb-88	TDS	1970
12-May-88	TDS	1570
23-Aug-88	TDS	1870
03-Nov-88	TDS	1970
13-Dec-88	TDS	1975
11-Jan-89	TDS	2000
15-Feb-89	TDS	2055
16-May-89	TDS	1430

Table D-9. TDS Near Upgradient Background Data Set for Well Q (corrected for non-detects and duplicates) (continued)

Sample Date	Parameter Code	Final Data Set
15-Nov-89	TDS	2000
13-Mar-90	TDS	1970
12-Sep-90	TDS	1960
27-Feb-91	TDS	2000
16-Sep-91	TDS	2040
09-Mar-92	TDS	2130
16-Sep-92	TDS	2060
03-Mar-93	TDS	2060
08-Sep-93	TDS	2048
01-Mar-94	TDS	1915
01-Sep-94	TDS	2016
16-Mar-95	TDS	2068
05-Sep-95	TDS	2015
11-Mar-96	TDS	2070
17-Sep-96	TDS	2086
06-Mar-97	TDS	2090
09-Sep-97	TDS	2140
04-Mar-98	TDS	2120
02-Mar-99	TDS	2250

Table D-10. TDS Near Upgradient Background Data Set for Well R
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
10-Jul-78	TDS	1333
23-Oct-78	TDS	1325
31-Jan-79	TDS	1330
30-Apr-79	TDS	1315
07-Jan-80	TDS	1229
17-Apr-80	TDS	1269
16-Jul-80	TDS	1291
13-Oct-80	TDS	1262
15-Apr-81	TDS	1242
07-Jul-81	TDS	1300
28-Dec-81	TDS	1261.5
24-Mar-82	TDS	1292.5
22-May-82	TDS	1260
25-Aug-82	TDS	1320
18-Nov-82	TDS	1220
23-Feb-83	TDS	1310
26-May-83	TDS	1220
28-Jun-83	TDS	1320
12-Sep-83	TDS	1320
20-Dec-83	TDS	1270
07-Mar-84	TDS	1190
09-May-84	TDS	1320
12-Sep-84	TDS	1350
12-Dec-84	TDS	1270
11-Mar-85	TDS	1325
29-May-85	TDS	1350
05-Sep-85	TDS	1410
16-Dec-85	TDS	1400
10-Mar-86	TDS	1420
30-Jun-86	TDS	1490
15-Sep-86	TDS	1410
15-Dec-86	TDS	1310
19-Mar-87	TDS	1375
19-Jun-87	TDS	1390
15-Sep-87	TDS	1735
08-Dec-87	TDS	1210
24-Feb-88	TDS	1315
12-May-88	TDS	1480
22-Aug-88	TDS	1440
03-Nov-88	TDS	1340
13-Dec-88	TDS	1595
11-Jan-89	TDS	1600
15-Feb-89	TDS	1565
16-May-89	TDS	1390
15-Nov-89	TDS	1500
13-Mar-90	TDS	1560

Table D-10. TDS Near Upgradient Background Data Set for Well R (corrected for non-detects and duplicates) (continued)

Sample Date	Parameter Code	Final Data Set
12-Sep-90	TDS	1490
27-Feb-91	TDS	1650
16-Sep-91	TDS	1700
09-Mar-92	TDS	1770
16-Sep-92	TDS	1682.5
01-Jun-93	TDS	1760
08-Sep-93	TDS	1776
07-Mar-94	TDS	1797
31-May-94	TDS	1601
01-Sep-94	TDS	1817
06-Jun-95	TDS	1867.5
05-Sep-95	TDS	1886
03-Jun-96	TDS	1943
17-Sep-96	TDS	2029
10-Oct-96	TDS	1970
27-May-97	TDS	2050
06-May-98	TDS	2050
20-May-99	TDS	2110

Table D-11. TDS Near Upgradient Background Groundwater Data Set Used in Statistical Analysis (all concentrations in mg/L)

Well ID								
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R
4250	1430	1890	2210	2130	1900	1610	2360	2110
3330	1320	1870	2191.5	2114.5			2264	2050
3280	1160	1860	2191	2110			2253	2050
3240	1150	1805	2150	2110			2250	2029
3230	1090	1790	2140	2106			2241	1970
3200	1070	1790	2130	2105			2170	1943
3190	1060	1770	2130	2101			2150	1886
3161	1057	1760	2120	2092			2146	1867.5
3160	1053	1740	2113.5	2090			2140	1817
3130	1040	1735	2110	2089			2130	1797
3128	976	1729	2104	2083			2120	1776
3115	957	1720	2100	2082.5			2118	1770
3110	954	1720	2100	2080			2114	1760
3110		1720	2090	2080			2101	1735
3109		1710	2090	2070			2097	1700
3070		1710	2089.5	2070			2090	1682.5
3060		1710	2083	2070			2090	1650
3060		1707	2075.5	2065			2090	1601
3054		1704	2072	2060			2086	1600
3052.5		1700.5	2063	2050			2070	1595
3050		1700	2062	2050			2068	1565
3050		1700	2058	2027			2060	1560
3040		1700	2040	2010.5			2060	1500
3020		1700	2030	2006			2060	1490
3020		1700	2023	2003.5			2055	1490
3010		1686	2006	2000			2050	1480
3010		1682.5	2000	2000			2048	1440
3000		1681					2040	1420
3000		1680					2030	1410
3000		1680					2020	1410
2970		1680					2016	1400
2960		1680					2015	1390
2950		1675					2010	1390
2950		1670					2010	1375
2930		1670					2000	1350
2930		1669					2000	1350
2910		1665					2000	1340
2870		1662.5					2000	1333
2830		1660					1975	1330
2810		1660					1970	1325
2770		1660					1970	1325
2710		1655					1970	1320
2696		1655					1960	1320
2670		1650					1960	1320
2640		1650					1960	1320
2580		1640					1957.5	1315
2560		1639.5					1940	1315

Table D-11. TDS Near Upgradient Background Groundwater Data Set Used in Statistical Analysis (all concentrations in mg/L) (continued)

Well ID								
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R
2430		1628					1930	1310
2400		1620					1915	1310
		1620					1870	1300
		1620					1840	1292.5
		1619.5					1820	1291
		1610					1810	1270
		1610					1810	1270
		1590					1800	1269
		1590					1780	1262
		1582					1770	1261.5
		1580					1730	1260
		1580					1720	1242
		1580					1630	1229
		1580					1570	1220
		1570					1430	1220
		1570					1370	1210
		1565					1280	1190
		1560						
		1560						
		1545						
		1536.5						
		1530						
		1506						
		1504						
		1500						
		1470						
		1465						
		1461						
		1460						
		1450						
		1450						
		1440						
		1420						
		1410						
		1310						
		1310						
		1220						
		1210						

Table D-12. TDS Near Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
TDS	4250	3330	1.3	**Pass**

Table D-13. TDS Near Upgradient Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
TDS, normal	1923.02	546.89	0.28	**Pass**
TDS, lognormal	7.52	0.27	0.04	**Pass**

Table D-14. TDS Near Upgradient Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
TDS, normal	4250	954	546.89	6.94	5.47	6.03	**Pass**

W = range of values
S = standard deviation

Table D-15. Near Upgradient Background TDS Data Set,
Coefficient of Skewness Analysis

TDS	Normal (xi-avg)^3
954	-909921292
957	-901496359
976	-849343150
1040	-688521922
1053	-658557882
1057	-649516275
1060	-642789650
1070	-620703236
1090	-578059851
1150	-461933244
1160	-444237160
1190	-393871796
1210	-362503959
1210	-362503959
1220	-347464762
1220	-347464762
1220	-347464762
1229	-334290307
1242	-315854868
1260	-291466120
1261.5	-289492388
1262	-288836462
1269	-279757278
1270	-278475996
1270	-278475996
1280	-265877686
1291	-252464930
1292.5	-250671648
1300	-241832510
1310	-230373644
1310	-230373644
1310	-230373644
1310	-230373644
1315	-224782516
1315	-224782516
1320	-219282592
1320	-219282592
1320	-219282592
1320	-219282592
1320	-219282592
1325	-213873122
1325	-213873122
1330	-208553355
1333	-205404241
1340	-198179933
1350	-188156324
1350	-188156324

	Normal
standard deviation =	546.8930115
mean =	1923.024
count =	331
sum of (xi-avg)^3 =	52884050501
1/n =	0.003021148
standard deviation cubed =	163571306.1
((n-1)/n)^(3/2) =	0.995471702
coef. of skewness =	1.0
acceptable range -1 to 1	Pass

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Normal (xi-avg)^3
1370	-169134551
1375	-164588367
1390	-151440037
1390	-151440037
1400	-143075501
1410	-135024780
1410	-135024780
1410	-135024780
1420	-127281873
1420	-127281873
1430	-119840781
1430	-119840781
1440	-112695503
1440	-112695503
1450	-105840040
1450	-105840040
1460	-99268391.2
1461	-98626605.1
1465	-96087122.3
1470	-92974557
1480	-86952537.3
1490	-81196332.1
1490	-81196332.1
1500	-75699941.4
1500	-75699941.4
1504	-73572789.2
1506	-72524322
1530	-60709656.4
1536.5	-57747071.6
1545	-54020512.8
1560	-47841701.9
1560	-47841701.9
1560	-47841701.9
1565	-45892005.5
1565	-45892005.5
1570	-43996012.7
1570	-43996012.7
1570	-43996012.7
1580	-40362138
1580	-40362138
1580	-40362138
1580	-40362138
1582	-39660252.8
1590	-36934077.9
1590	-36934077.9
1595	-35295353.2
1600	-33705832.2
1601	-33393766.4
1610	-30671401
1610	-30671401
1610	-30671401
1619.5	-27962747.2
1620	-27824784.4

Table D-15. Near Upgradient Background TDS Data Set,
Coefficient of Skewness Analysis (cont.)

TDS	Normal (xi-avg)^3
1620	-27824784.4
1620	-27824784.4
1628	-25678685.5
1630	-25159982.2
1639.5	-22791361
1640	-22670994.6
1650	-20351821.4
1650	-20351821.4
1650	-20351821.4
1655	-19254040.3
1655	-19254040.3
1660	-18196462.7
1660	-18196462.7
1660	-18196462.7
1662.5	-17682516
1665	-17178338.8
1669	-16391742.3
1670	-16198918.6
1670	-16198918.6
1675	-15257451.9
1680	-14353188.9
1680	-14353188.9
1680	-14353188.9
1680	-14353188.9
1681	-14176734.8
1682.5	-13914774.4
1682.5	-13914774.4
1686	-13316126.1
1700	-11093173.1
1700	-11093173.1
1700	-11093173.1
1700	-11093173.1
1700	-11093173.1
1700	-11093173.1
1700.5	-11018730.6
1704	-10506936.9
1707	-10081079.3
1710	-9666886.97
1710	-9666886.97
1710	-9666886.97
1720	-8368415.32
1720	-8368415.32
1720	-8368415.32
1720	-8368415.32
1729	-7304113.23
1730	-7191758.17
1735	-6647235.04
1735	-6647235.04
1740	-6130915.53
1760	-4332673.74
1760	-4332673.74
1770	-3583274.6
1770	-3583274.6

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Normal (xi-avg)^3
1770	-3583274.6
1776	-3178090.07
1780	-2925689.96
1790	-2353919.82
1790	-2353919.82
1797	-2001527.35
1800	-1861964.18
1805	-1644041.8
1810	-1443823.05
1810	-1443823.05
1817	-1191830.88
1820	-1093496.41
1840	-572286.65
1860	-250334.893
1867.5	-171177.314
1870	-149080.767
1870	-149080.767
1886	-50752.3277
1890	-36016.0186
1900	-12205.3968
1915	-516.654517
1930	339.4593829
1940	4892.075095
1943	7971.032014
1957.5	40977.38333
1960	50553.80199
1960	50553.80199
1960	50553.80199
1970	103662.9132
1970	103662.9132
1970	103662.9132
1970	103662.9132
1975	140412.0307
2000	456103.2376
2000	456103.2376
2000	456103.2376
2000	456103.2376
2000	456103.2376
2000	456103.2376
2000	456103.2376
2003.5	521190.399
2006	571287.6409
2006	571287.6409
2010	657954.3428
2010	657954.3428
2010.5	669366.8924
2015	778074.4573
2016	803730.0451
2020	911990.9464
2023	999275.0997
2027	1124079.941
2029	1190201.491
2030	1224213.049

Table D-15. Near Upgradient Background TDS Data Set,
Coefficient of Skewness Analysis (cont.)

TDS	Normal (xi-avg)^3
2030	1224213.049
2040	1600620.649
2040	1600620.649
2048	1951992.289
2050	2047213.748
2050	2047213.748
2050	2047213.748
2050	2047213.748
2050	2047213.748
2055	2298704.86
2058	2459053.786
2060	2569992.346
2060	2569992.346
2060	2569992.346
2060	2569992.346
2062	2684218.325
2063	2742579.097
2065	2861826.207
2068	3047100.783
2070	3174956.442
2070	3174956.442
2070	3174956.442
2070	3174956.442
2072	3306339.521
2075.5	3544892.138
2080	3868106.036
2080	3868106.036
2082.5	4055875.544
2083	4094144.087
2083	4094144.087
2086	4328820.832
2089	4572298.273
2089.5	4613744.844
2090	4655441.13
2090	4655441.13
2090	4655441.13
2090	4655441.13
2090	4655441.13
2090	4655441.13
2092	4824738.408
2097	5265829.066
2100	5542961.721
2100	5542961.721
2101	5637454.983
2101	5637454.983
2104	5927365.897
2105	6026166.579
2106	6126059.115
2110	6536667.811
2110	6536667.811
2110	6536667.811
2110	6536667.811
2113.5	6910661.642

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Normal (xi-avg)^3
2114	6965226.187
2114.5	7020077.195
2118	7412118.242
2120	7642559.4
2120	7642559.4
2130	8866636.487
2130	8866636.487
2130	8866636.487
2130	8866636.487
2140	10214899.07
2140	10214899.07
2146	11085961.66
2150	11693347.16
2150	11693347.16
2170	15064799.82
2191	19243624.69
2191.5	19351542.36
2210	23633931.13
2241	32150100.3
2250	34958030.41
2253	35929104.51
2264	39643390.35
2360	83439607.07
2400	108514836.3
2430	130305205.9
2560	258445432.8
2580	283562096.3
2640	368564538.9
2670	416792264.4
2696	461846593
2710	487398495.4
2770	607593406.9
2810	697807057.9
2830	746082996.3
2870	849213099.2
2910	961434170.1
2930	1021073819
2930	1021073819
2950	1083130209
2950	1083130209
2960	1115079682
2970	1147651341
3000	1249159431
3000	1249159431
3000	1249159431
3010	1284279832
3010	1284279832
3020	1320052419
3020	1320052419
3040	1393578148
3050	1431343291
3050	1431343291
3052.5	1440889996

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Normal (xi-avg)^3
3054	1446638344
3060	1469784619
3060	1469784619
3070	1508908133
3109	1668120869
3110	1672344044
3110	1672344044
3115	1693566867
3128	1749584844
3130	1758311113
3160	1892708106
3161	1897302146
3190	2033784770
3200	2082322695
3230	2232557584
3240	2284196252
3280	2498712776
3330	2785222606
4250	12600147164

Table D-15. Near Upgradient Background TDS Data Set,
Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
6.860664	-0.29210244
6.863803	-0.28797534
6.883463	-0.26301422
6.946976	-0.19229386
6.959399	-0.18014337
6.96319	-0.1765396
6.966024	-0.17387734
6.975414	-0.16524868
6.993933	-0.14907682
7.047517	-0.10829449
7.056175	-0.10249975
7.081709	-0.0866216
7.098376	-0.07719687
7.098376	-0.07719687
7.106606	-0.07280625
7.106606	-0.07280625
7.106606	-0.07280625
7.113956	-0.06902892
7.124478	-0.06385214
7.138867	-0.05720146
7.140057	-0.05667321
7.140453	-0.05649798
7.145984	-0.05408972
7.146772	-0.05375243
7.146772	-0.05375243
7.154615	-0.05047031
7.163172	-0.04704494
7.164334	-0.04659242
7.17012	-0.04438083
7.177782	-0.04156109
7.177782	-0.04156109
7.177782	-0.04156109
7.177782	-0.04156109
7.181592	-0.04020486
7.181592	-0.04020486
7.185387	-0.03888345
7.185387	-0.03888345
7.185387	-0.03888345
7.185387	-0.03888345
7.185387	-0.03888345
7.189168	-0.03759613
7.189168	-0.03759613
7.192934	-0.03634224
7.195187	-0.03560566
7.200425	-0.03393201
7.20786	-0.03164749
7.20786	-0.03164749
7.222566	-0.02743539
7.226209	-0.0264532

Lognormal	
standard deviation =	0.271384452
mean =	7.524
count =	331
sum of (xi-avg)^3 =	1.597971101
1/n =	0.003021148
standard deviation cubed =	0.019987335
((n-1)/n)^(3/2) =	0.995471702
coef. of skewness =	0.2
acceptable range -1 to 1	Pass

Table D-15. Near Upgradient Background TDS Data Set,
Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
7.237059	-0.02366733
7.237059	-0.02366733
7.244228	-0.02193847
7.251345	-0.02030732
7.251345	-0.02030732
7.251345	-0.02030732
7.258412	-0.01876974
7.258412	-0.01876974
7.26543	-0.01732176
7.26543	-0.01732176
7.272398	-0.01595953
7.272398	-0.01595953
7.279319	-0.01467934
7.279319	-0.01467934
7.286192	-0.01347758
7.286876	-0.01336158
7.289611	-0.01290503
7.293018	-0.01235079
7.299797	-0.01129561
7.306531	-0.01030879
7.306531	-0.01030879
7.31322	-0.0093872
7.31322	-0.0093872
7.315884	-0.00903615
7.317212	-0.00886429
7.333023	-0.00698397
7.337262	-0.00652952
7.342779	-0.00596823
7.352441	-0.00506442
7.352441	-0.00506442
7.352441	-0.00506442
7.355641	-0.00478656
7.355641	-0.00478656
7.358831	-0.00451988
7.358831	-0.00451988
7.358831	-0.00451988
7.36518	-0.00401891
7.36518	-0.00401891
7.36518	-0.00401891
7.36518	-0.00401891
7.366445	-0.00392374
7.371489	-0.0035592
7.371489	-0.0035592
7.374629	-0.00334411
7.377759	-0.0031385
7.378384	-0.00309849
7.383989	-0.00275463
7.383989	-0.00275463
7.383989	-0.00275463
7.389873	-0.00242215
7.390181	-0.00240549
7.390181	-0.00240549
7.390181	-0.00240549

Table D-15. Near Upgradient Background TDS Data Set,
Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
7.395108	-0.00214981
7.396335	-0.00208904
7.402147	-0.00181689
7.402452	-0.00180331
7.408531	-0.00154639
7.408531	-0.00154639
7.408531	-0.00154639
7.411556	-0.00142815
7.411556	-0.00142815
7.414573	-0.00131643
7.414573	-0.00131643
7.414573	-0.00131643
7.416078	-0.00126294
7.41758	-0.001211
7.41998	-0.00113104
7.420579	-0.00111165
7.420579	-0.00111165
7.423568	-0.00101816
7.426549	-0.00093031
7.426549	-0.00093031
7.426549	-0.00093031
7.426549	-0.00093031
7.427144	-0.0009134
7.428036	-0.00088844
7.428036	-0.00088844
7.430114	-0.00083207
7.438384	-0.00063133
7.438384	-0.00063133
7.438384	-0.00063133
7.438384	-0.00063133
7.438384	-0.00063133
7.438384	-0.00063133
7.438678	-0.00062486
7.440734	-0.00058085
7.442493	-0.00054488
7.444249	-0.00051049
7.444249	-0.00051049
7.444249	-0.00051049
7.45008	-0.00040671
7.45008	-0.00040671
7.45008	-0.00040671
7.45008	-0.00040671
7.455298	-0.00032668
7.455877	-0.00031852
7.458763	-0.00027982
7.458763	-0.00027982
7.46164	-0.00024449
7.473069	-0.00013344
7.473069	-0.00013344
7.478735	-9.3794E-05
7.478735	-9.3794E-05
7.478735	-9.3794E-05
7.482119	-7.4359E-05

Table D-15. Near Upgradient Background TDS Data Set,
Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
7.484369	-6.3051E-05
7.489971	-3.9999E-05
7.489971	-3.9999E-05
7.493874	-2.7807E-05
7.495542	-2.3463E-05
7.498316	-1.7282E-05
7.501082	-1.2307E-05
7.501082	-1.2307E-05
7.504942	-7.1088E-06
7.506592	-5.4316E-06
7.517521	-2.9397E-07
7.528332	7.20835E-08
7.532356	5.48534E-07
7.533694	8.63813E-07
7.533694	8.63813E-07
7.542213	5.87436E-06
7.544332	8.19612E-06
7.549609	1.6463E-05
7.557473	3.69357E-05
7.565275	6.94533E-05
7.570443	9.9081E-05
7.571988	0.000109342
7.579423	0.000168686
7.5807	0.000180647
7.5807	0.000180647
7.5807	0.000180647
7.585789	0.000233959
7.585789	0.000233959
7.585789	0.000233959
7.585789	0.000233959
7.588324	0.000264037
7.600902	0.000451791
7.600902	0.000451791
7.600902	0.000451791
7.600902	0.000451791
7.600902	0.000451791
7.600902	0.000451791
7.600902	0.000451791
7.602651	0.000483384
7.603898	0.000506795
7.603898	0.000506795
7.60589	0.000545739
7.60589	0.000545739
7.606139	0.000550738
7.608374	0.000597043
7.608871	0.000607659
7.610853	0.000651327
7.612337	0.000685356
7.614312	0.00073246
7.615298	0.000756764
7.615791	0.000769106
7.615791	0.000769106
7.620705	0.000899613

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
7.620705	0.000899613
7.624619	0.00101353
7.625595	0.001043365
7.625595	0.001043365
7.625595	0.001043365
7.625595	0.001043365
7.625595	0.001043365
7.628031	0.001120364
7.62949	0.001168239
7.630461	0.001200861
7.630461	0.001200861
7.630461	0.001200861
7.630461	0.001200861
7.631432	0.001234053
7.631917	0.001250863
7.632886	0.001284916
7.634337	0.00133708
7.635304	0.001372586
7.635304	0.001372586
7.635304	0.001372586
7.635304	0.001372586
7.63627	0.00140868
7.637957	0.00147327
7.640123	0.001559007
7.640123	0.001559007
7.641324	0.001607961
7.641564	0.001617867
7.641564	0.001617867
7.643004	0.001678102
7.644441	0.001739724
7.64468	0.00175013
7.644919	0.001760575
7.644919	0.001760575
7.644919	0.001760575
7.644919	0.001760575
7.644919	0.001760575
7.644919	0.001760575
7.645876	0.001802745
7.648263	0.001910919
7.649693	0.001977726
7.649693	0.001977726
7.650169	0.002000315
7.650169	0.002000315
7.651596	0.002069045
7.652071	0.002092278
7.652546	0.002115673
7.654443	0.002210882
7.654443	0.002210882
7.654443	0.002210882
7.654443	0.002210882
7.656101	0.002296344
7.656337	0.002308718
7.656574	0.002321133

Table D-15. Near Upgradient Background TDS Data Set,
Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
7.658228	0.002409205
7.659171	0.00246045
7.659171	0.00246045
7.663877	0.002726823
7.663877	0.002726823
7.663877	0.002726823
7.663877	0.002726823
7.668561	0.003010381
7.668561	0.003010381
7.671361	0.003188917
7.673223	0.003311489
7.673223	0.003311489
7.682482	0.003967759
7.692113	0.004736837
7.692342	0.00475617
7.700748	0.005505647
7.714677	0.006914107
7.718685	0.007359743
7.720018	0.007512026
7.724888	0.008086524
7.766417	0.014215912
7.783224	0.017384853
7.795647	0.02000769
7.847763	0.033884067
7.855545	0.036387983
7.878534	0.044498927
7.889834	0.048892896
7.899524	0.052884063
7.904704	0.05510362
7.926603	0.065174767
7.94094	0.072391676
7.948032	0.07615062
7.962067	0.083968589
7.975908	0.092185144
7.982758	0.096442228
7.982758	0.096442228
7.98956	0.100798118
7.98956	0.100798118
7.992945	0.103013014
7.996317	0.105252487
8.006368	0.112117929
8.006368	0.112117929
8.006368	0.112117929
8.009695	0.114455264
8.009695	0.114455264
8.013012	0.116816947
8.013012	0.116816947
8.019613	0.12161316
8.022897	0.124047588
8.022897	0.124047588
8.023716	0.12465997
8.024207	0.125028123
8.02617	0.126506162

Table D-15. Near Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (cont.)

TDS	Lognormal (xi-avg)^3
8.02617	0.126506162
8.029433	0.128988829
8.042056	0.138900422
8.042378	0.139159344
8.042378	0.139159344
8.043984	0.140457527
8.048149	0.143860617
8.048788	0.14438773
8.058327	0.152407922
8.058644	0.152678916
8.067776	0.160639822
8.070906	0.163430551
8.080237	0.171942154
8.083329	0.174825616
8.095599	0.186589057
8.110728	0.201805027
8.354674	0.572829809

Table D-16. TDS Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
954	1	0.003012	-2.74646	-2620.118757	7.543019
957	2	0.006024	-2.51071	-2402.753962	6.303688
976	3	0.009036	-2.36414	-2307.401155	5.58916
1040	4	0.012048	-2.25558	-2345.80657	5.087656
1053	5	0.01506	-2.16851	-2283.439153	4.702428
1057	6	0.018072	-2.09529	-2214.725646	4.390257
1060	7	0.021084	-2.03185	-2153.758396	4.128404
1070	8	0.024096	-1.97566	-2113.955088	3.903228
1090	9	0.027108	-1.9251	-2098.359164	3.706011
1150	10	0.03012	-1.87903	-2160.878921	3.530736
1160	11	0.033133	-1.83662	-2130.484427	3.37319
1190	12	0.036145	-1.79729	-2138.773743	3.230247
1210	13	0.039157	-1.76055	-2130.270786	3.099552
1210	14	0.042169	-1.72606	-2088.529254	2.979274
1220	15	0.045181	-1.69349	-2066.061188	2.867918
1220	16	0.048193	-1.66263	-2028.413019	2.764351
1220	17	0.051205	-1.63328	-1992.60121	2.667603
1229	18	0.054217	-1.60527	-1972.879031	2.576898
1242	19	0.057229	-1.57847	-1960.458476	2.491564
1260	20	0.060241	-1.55275	-1956.468805	2.411042
1261.5	21	0.063253	-1.52803	-1927.607834	2.334871
1262	22	0.066265	-1.5042	-1898.299952	2.262617
1269	23	0.069277	-1.4812	-1879.640927	2.193949
1270	24	0.072289	-1.45895	-1852.8694	2.128542
1270	25	0.075301	-1.43741	-1825.50607	2.066137
1280	26	0.078313	-1.41651	-1813.133713	2.006503
1291	27	0.081325	-1.39621	-1802.508132	1.949405
1292.5	28	0.084337	-1.37647	-1779.093623	1.894683
1300	29	0.087349	-1.35726	-1764.440185	1.842159
1310	30	0.090361	-1.33853	-1753.478114	1.79167
1310	31	0.093373	-1.32026	-1729.545102	1.743096
1310	32	0.096386	-1.30243	-1706.178023	1.696313
1310	33	0.099398	-1.28499	-1683.341134	1.651208
1315	34	0.10241	-1.26794	-1667.341371	1.607672
1315	35	0.105422	-1.25125	-1645.395037	1.565629
1320	36	0.108434	-1.2349	-1630.068709	1.524979
1320	37	0.111446	-1.21888	-1608.915318	1.485657
1320	38	0.114458	-1.20316	-1588.167106	1.447587
1320	39	0.11747	-1.18773	-1567.806066	1.410707
1320	40	0.120482	-1.17258	-1547.808188	1.374948
1325	41	0.123494	-1.1577	-1533.946943	1.34026
1325	42	0.126506	-1.14306	-1514.560211	1.306596
1330	43	0.129518	-1.12867	-1501.136194	1.273905
1333	44	0.13253	-1.11451	-1485.642795	1.242134
1340	45	0.135542	-1.10057	-1474.761348	1.21125
1350	46	0.138554	-1.08684	-1467.230049	1.181215
1350	47	0.141566	-1.07331	-1448.966259	1.151991
1370	48	0.144578	-1.05997	-1452.162837	1.123542
1375	49	0.14759	-1.04682	-1439.3828	1.09584
1390	50	0.150602	-1.03385	-1437.057699	1.068855
1390	51	0.153614	-1.02105	-1419.264117	1.04255
1400	52	0.156627	-1.00842	-1411.788617	1.016912
1410	53	0.159639	-0.99594	-1404.28167	0.991905
1410	54	0.162651	-0.98362	-1386.908525	0.967514
1410	55	0.165663	-0.97145	-1369.740562	0.94371
1420	56	0.168675	-0.95941	-1362.368721	0.920476
1420	57	0.171687	-0.94752	-1345.479359	0.897795
1430	58	0.174699	-0.93576	-1338.134848	0.875644
1430	59	0.177711	-0.92412	-1321.497211	0.854005

TDS - normal
29015872326 = (sum of Mi*Xi)^2
330 = count -1
299091.9661 = standard deviation ^2
321.0893058 = sum of Mi^2

0.92 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1440	60	0.180723	-0.912614	-1314.164547	0.832865
1440	61	0.183735	-0.901223	-1297.7609	0.812203
1450	62	0.186747	-0.889947	-1290.423711	0.792006
1450	63	0.189759	-0.878784	-1274.237491	0.772262
1460	64	0.192771	-0.867731	-1266.886829	0.752957
1461	65	0.195783	-0.85678	-1251.756148	0.734073
1465	66	0.198795	-0.845932	-1239.290953	0.715602
1470	67	0.201807	-0.835182	-1227.71778	0.697529
1480	68	0.204819	-0.82453	-1220.303966	0.679849
1490	69	0.207831	-0.813968	-1212.812617	0.662544
1490	70	0.210843	-0.803498	-1197.211486	0.645608
1500	71	0.213855	-0.793116	-1189.67364	0.629033
1500	72	0.216867	-0.782816	-1174.223598	0.6128
1504	73	0.21988	-0.7726	-1161.990149	0.596911
1506	74	0.222892	-0.762464	-1148.270053	0.581351
1530	75	0.225904	-0.752405	-1151.17889	0.566113
1536.5	76	0.228916	-0.742423	-1140.73263	0.551192
1545	77	0.231928	-0.732514	-1131.733904	0.536577
1560	78	0.23494	-0.722675	-1127.373616	0.52226
1560	79	0.237952	-0.712906	-1112.133805	0.508235
1560	80	0.240964	-0.703205	-1097.000404	0.494498
1565	81	0.243976	-0.693569	-1085.43594	0.481038
1565	82	0.246988	-0.683999	-1070.458643	0.467855
1570	83	0.25	-0.67449	-1058.949874	0.454937
1570	84	0.253012	-0.665041	-1044.113924	0.442279
1570	85	0.256024	-0.655652	-1029.374357	0.42988
1580	86	0.259036	-0.646319	-1021.183652	0.417728
1580	87	0.262048	-0.637044	-1006.529828	0.405825
1580	88	0.26506	-0.627822	-991.9586319	0.39416
1580	89	0.268072	-0.618654	-977.4736554	0.382733
1582	90	0.271084	-0.609537	-964.2867872	0.371535
1590	91	0.274096	-0.600471	-954.7491118	0.360566
1590	92	0.277108	-0.591453	-940.4110642	0.349817
1595	93	0.28012	-0.582484	-929.0613548	0.339287
1600	94	0.283133	-0.573561	-917.698344	0.328973
1601	95	0.286145	-0.564683	-904.0567193	0.318866
1610	96	0.289157	-0.55585	-894.91881	0.308969
1610	97	0.292169	-0.54706	-880.7664813	0.299275
1610	98	0.295181	-0.538312	-866.6818758	0.28978
1619.5	99	0.298193	-0.529606	-857.6962466	0.280482
1620	100	0.301205	-0.520938	-843.9197245	0.271377
1620	101	0.304217	-0.51231	-829.94286	0.262462
1620	102	0.307229	-0.50372	-816.0267726	0.253734
1628	103	0.310241	-0.495168	-806.1328026	0.245191
1630	104	0.313253	-0.48665	-793.2397466	0.236828
1639.5	105	0.316265	-0.478169	-783.9582611	0.228646
1640	106	0.319277	-0.469721	-770.3425126	0.220638
1650	107	0.322289	-0.461307	-761.1566843	0.212804
1650	108	0.325301	-0.452926	-747.3280448	0.205142
1650	109	0.328313	-0.444576	-733.5500527	0.197648
1655	110	0.331325	-0.436257	-722.0058706	0.19032
1655	111	0.334337	-0.427967	-708.2858474	0.183156
1660	112	0.337349	-0.419708	-696.7151648	0.176155
1660	113	0.340361	-0.411477	-683.0518259	0.169313
1660	114	0.343373	-0.403273	-669.4337799	0.162629
1662.5	115	0.346386	-0.395098	-656.8506592	0.156103
1665	116	0.349398	-0.386947	-644.266413	0.149728
1669	117	0.35241	-0.378823	-632.2551417	0.143507

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1670	118	0.355422	-0.370724	-619.1085504	0.137436
1670	119	0.358434	-0.362649	-605.6230063	0.131514
1675	120	0.361446	-0.354597	-593.9503183	0.125739
1680	121	0.364458	-0.346569	-582.235316	0.12011
1680	122	0.36747	-0.338562	-568.7836165	0.114624
1680	123	0.370482	-0.330577	-555.3701158	0.109281
1680	124	0.373494	-0.322614	-541.990994	0.10408
1681	125	0.376506	-0.31467	-528.9609214	0.099017
1682.5	126	0.379518	-0.306748	-516.1027559	0.094094
1682.5	127	0.38253	-0.298843	-502.8031893	0.089307
1686	128	0.385542	-0.290956	-490.5525748	0.084656
1700	129	0.388554	-0.283089	-481.2518455	0.08014
1700	130	0.391566	-0.275239	-467.906716	0.075757
1700	131	0.394578	-0.267406	-454.5905767	0.071506
1700	132	0.39759	-0.259589	-441.3014949	0.067387
1700	133	0.400602	-0.251788	-428.0394705	0.063397
1700	134	0.403614	-0.244003	-414.8045036	0.059537
1700.5	135	0.406627	-0.236232	-401.7127776	0.055806
1704	136	0.409639	-0.228475	-389.3219127	0.052201
1707	137	0.412651	-0.220732	-376.7896783	0.048723
1710	138	0.415663	-0.213003	-364.2343131	0.04537
1710	139	0.418675	-0.205285	-351.0381362	0.042142
1710	140	0.421687	-0.197581	-337.8633437	0.039038
1720	141	0.424699	-0.189887	-326.6049134	0.036057
1720	142	0.427711	-0.182206	-313.3941391	0.033199
1720	143	0.430723	-0.174534	-300.1990081	0.030462
1720	144	0.433735	-0.166873	-287.0214757	0.027847
1729	145	0.436747	-0.159222	-275.2945386	0.025352
1730	146	0.439759	-0.15158	-262.2330499	0.022976
1735	147	0.442771	-0.143947	-249.7478079	0.020721
1735	148	0.445783	-0.136322	-236.5184741	0.018584
1740	149	0.448795	-0.128706	-223.9484502	0.016565
1760	150	0.451807	-0.121097	-213.1306246	0.014664
1760	151	0.454819	-0.113495	-199.7506843	0.012881
1770	152	0.457831	-0.105899	-187.4417421	0.011215
1770	153	0.460843	-0.09831	-174.0079142	0.009665
1770	154	0.463855	-0.090726	-160.5841476	0.008231
1776	155	0.466867	-0.083146	-147.667306	0.006913
1780	156	0.46988	-0.075572	-134.5184955	0.005711
1790	157	0.472892	-0.068003	-121.7252247	0.004624
1790	158	0.475904	-0.060437	-108.182337	0.003653
1797	159	0.478916	-0.052876	-95.01771956	0.002796
1800	160	0.481928	-0.045316	-81.56803233	0.002054
1805	161	0.48494	-0.03776	-68.15670304	0.001426
1810	162	0.487952	-0.030204	-54.66981747	0.000912
1810	163	0.490964	-0.022652	-41.00030537	0.000513
1817	164	0.493976	-0.015101	-27.43855816	0.000228
1820	165	0.496988	-0.00755	-13.74089607	5.7E-05
1840	166	0.5	0	0	0
1860	167	0.503012	0.00755	14.04289378	5.7E-05
1867.5	168	0.506024	0.015101	28.20115981	0.000228
1870	169	0.509036	0.022652	42.35943152	0.000513
1870	170	0.512048	0.030204	56.48207662	0.000912
1886	171	0.51506	0.03776	71.21525869	0.001426
1890	172	0.518072	0.045316	85.64643394	0.002054
1900	173	0.521084	0.052876	100.4639216	0.002796
1915	174	0.524096	0.060437	115.7369695	0.003653
1930	175	0.527108	0.068003	131.2456334	0.004624

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1940	176	0.53012	0.075572	146.6100457	0.005711
1943	177	0.533133	0.083146	161.552689	0.006913
1957.5	178	0.536145	0.090726	177.5951802	0.008231
1960	179	0.539157	0.09831	192.6867299	0.009665
1960	180	0.542169	0.105899	207.5626071	0.011215
1960	181	0.545181	0.113495	222.4496257	0.012881
1970	182	0.548193	0.121097	238.5609832	0.014664
1970	183	0.551205	0.128706	253.5508315	0.016565
1970	184	0.554217	0.136322	268.5541176	0.018584
1970	185	0.557229	0.143947	283.5753207	0.020721
1975	186	0.560241	0.15158	299.3701003	0.022976
2000	187	0.563253	0.159222	318.4436537	0.025352
2000	188	0.566265	0.166873	333.745902	0.027847
2000	189	0.569277	0.174534	349.068614	0.030462
2000	190	0.572289	0.182206	364.4117896	0.033199
2000	191	0.575301	0.189887	379.7731551	0.036057
2000	192	0.578313	0.197581	395.1618055	0.039038
2000	193	0.581325	0.205285	410.5709195	0.042142
2003.5	194	0.584337	0.213003	426.7505534	0.04537
2006	195	0.587349	0.220732	442.7885733	0.048723
2006	196	0.590361	0.228475	458.3214536	0.052201
2010	197	0.593373	0.236232	474.8266292	0.055806
2010	198	0.596386	0.244003	490.4453249	0.059537
2010.5	199	0.599398	0.251788	506.2196209	0.063397
2015	200	0.60241	0.259589	523.072066	0.067387
2016	201	0.605422	0.267406	539.0909428	0.071506
2020	202	0.608434	0.275239	555.9832744	0.075757
2023	203	0.611446	0.283089	572.6896961	0.08014
2027	204	0.614458	0.290956	589.7687242	0.084656
2029	205	0.61747	0.298843	606.3522562	0.089307
2030	206	0.620482	0.306748	622.6975302	0.094094
2030	207	0.623494	0.31467	638.7808867	0.099017
2040	208	0.626506	0.322614	658.1319212	0.10408
2040	209	0.629518	0.330577	674.3779977	0.109281
2048	210	0.63253	0.338562	693.3743134	0.114624
2050	211	0.635542	0.346569	710.4657129	0.12011
2050	212	0.638554	0.354597	726.9242701	0.125739
2050	213	0.641566	0.362649	743.4294389	0.131514
2050	214	0.644578	0.370724	759.9835499	0.137436
2050	215	0.64759	0.378823	776.586603	0.143507
2055	216	0.650602	0.386947	795.1756629	0.149728
2058	217	0.653614	0.395098	813.1119739	0.156103
2060	218	0.656627	0.403273	830.7431244	0.162629
2060	219	0.659639	0.411477	847.6426274	0.169313
2060	220	0.662651	0.419708	864.5983371	0.176155
2060	221	0.665663	0.427967	881.6125955	0.183156
2062	222	0.668675	0.436257	899.5626013	0.19032
2063	223	0.671687	0.444576	917.1598538	0.197648
2065	224	0.674699	0.452926	935.2923712	0.205142
2068	225	0.677711	0.461307	953.9830444	0.212804
2070	226	0.680723	0.469721	972.3225617	0.220638
2070	227	0.683735	0.478169	989.8100643	0.228646
2070	228	0.686747	0.48665	1007.365813	0.236828
2070	229	0.689759	0.495168	1024.996868	0.245191
2072	230	0.692771	0.50372	1043.708317	0.253734
2075.5	231	0.695783	0.51231	1063.300251	0.262462
2080	232	0.698795	0.520938	1083.551251	0.271377
2080	233	0.701807	0.529606	1101.579619	0.280482

Table D-16. TDS Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

TDS	Count	*i*/(n+1)	Mi	Mi * Xi	Mi^2
2082.5	234	0.704819	0.538312	1121.034165	0.28978
2083	235	0.707831	0.54706	1139.525826	0.299275
2083	236	0.710843	0.55585	1157.835951	0.308969
2086	237	0.713855	0.564683	1177.927743	0.318866
2089	238	0.716867	0.573561	1198.1699	0.328973
2089.5	239	0.71988	0.582484	1217.099499	0.339287
2090	240	0.722892	0.591453	1236.137814	0.349817
2090	241	0.725904	0.600471	1254.984682	0.360566
2090	242	0.728916	0.609537	1273.931343	0.371535
2090	243	0.731928	0.618654	1292.987304	0.382733
2090	244	0.73494	0.627822	1312.14781	0.39416
2090	245	0.737952	0.637044	1331.422368	0.405825
2092	246	0.740964	0.646319	1352.098861	0.417728
2097	247	0.743976	0.655652	1374.903202	0.42988
2100	248	0.746988	0.665041	1396.585503	0.442279
2100	249	0.75	0.67449	1416.429768	0.454937
2101	250	0.753012	0.683999	1437.082178	0.467855
2101	251	0.756024	0.693569	1457.18908	0.481038
2104	252	0.759036	0.703205	1479.544135	0.494498
2105	253	0.762048	0.712906	1500.66773	0.508235
2106	254	0.76506	0.722675	1521.954382	0.52226
2110	255	0.768072	0.732514	1545.604232	0.536577
2110	256	0.771084	0.742423	1566.512105	0.551192
2110	257	0.774096	0.752405	1587.573502	0.566113
2110	258	0.777108	0.762464	1608.798016	0.581351
2113.5	259	0.78012	0.7726	1632.889747	0.596911
2114	260	0.783133	0.782816	1654.872458	0.6128
2114.5	261	0.786145	0.793116	1677.043274	0.629033
2118	262	0.789157	0.803498	1701.808005	0.645608
2120	263	0.792169	0.813968	1725.612583	0.662544
2120	264	0.795181	0.82453	1748.002978	0.679849
2130	265	0.798193	0.835182	1778.938008	0.697529
2130	266	0.801205	0.845932	1801.835992	0.715602
2130	267	0.804217	0.85678	1824.942228	0.734073
2130	268	0.807229	0.867731	1848.266402	0.752957
2140	269	0.810241	0.878784	1880.598779	0.772262
2140	270	0.813253	0.889947	1904.487408	0.792006
2146	271	0.816265	0.901223	1934.024231	0.812203
2150	272	0.819277	0.912614	1962.120677	0.832865
2150	273	0.822289	0.924124	1986.866437	0.854005
2170	274	0.825301	0.935759	2030.596238	0.875644
2191	275	0.828313	0.947521	2076.017799	0.897795
2191.5	276	0.831325	0.959415	2102.557079	0.920476
2210	277	0.834337	0.971447	2146.898328	0.94371
2241	278	0.837349	0.983623	2204.299294	0.967514
2250	279	0.840361	0.995944	2240.875006	0.991905
2253	280	0.843373	1.00842	2271.971252	1.016912
2264	281	0.846386	1.021053	2311.664721	1.04255
2360	282	0.849398	1.033854	2439.896525	1.068855
2400	283	0.85241	1.046824	2512.37725	1.09584
2430	284	0.855422	1.059973	2575.734084	1.123542
2560	285	0.858434	1.073308	2747.66935	1.151991
2580	286	0.861446	1.086837	2804.03965	1.181215
2640	287	0.864458	1.100568	2905.499969	1.21125
2670	288	0.86747	1.114511	2975.743632	1.242134
2696	289	0.870482	1.128674	3042.904646	1.273905
2710	290	0.873494	1.143064	3097.70428	1.306596
2770	291	0.876506	1.157696	3206.817382	1.34026

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2810	292	0.879518	1.172582	3294.955309	1.374948
2830	293	0.88253	1.187732	3361.281188	1.410707
2870	294	0.885542	1.203157	3453.060299	1.447587
2910	295	0.888554	1.218875	3546.926951	1.485657
2930	296	0.891566	1.234901	3618.258575	1.524979
2930	297	0.894578	1.251251	3666.165367	1.565629
2950	298	0.89759	1.26794	3740.423608	1.607672
2950	299	0.900602	1.284993	3790.730034	1.651208
2960	300	0.903614	1.302426	3855.180876	1.696313
2970	301	0.906627	1.320263	3921.182406	1.743096
3000	302	0.909639	1.338533	4015.598734	1.79167
3000	303	0.912651	1.357262	4071.785042	1.842159
3000	304	0.915663	1.376475	4129.424269	1.894683
3010	305	0.918675	1.396211	4202.594482	1.949405
3010	306	0.921687	1.416511	4263.697247	2.006503
3020	307	0.924699	1.437406	4340.967189	2.066137
3020	308	0.927711	1.458952	4406.035896	2.128542
3040	309	0.930723	1.481199	4502.843512	2.193949
3050	310	0.933735	1.5042	4587.808917	2.262617
3050	311	0.936747	1.528028	4660.486638	2.334871
3052.5	312	0.939759	1.552753	4739.778592	2.411042
3054	313	0.942771	1.578469	4820.644272	2.491564
3060	314	0.945783	1.605272	4912.131681	2.576898
3060	315	0.948795	1.63328	4997.835822	2.667603
3070	316	0.951807	1.662634	5104.285219	2.764351
3109	317	0.954819	1.693493	5265.069044	2.867918
3110	318	0.957831	1.726057	5368.038001	2.979274
3110	319	0.960843	1.760554	5475.324087	3.099552
3115	320	0.963855	1.797289	5598.554799	3.230247
3128	321	0.966867	1.836625	5744.961454	3.37319
3130	322	0.96988	1.879025	5881.348716	3.530736
3160	323	0.972892	1.9251	6083.316475	3.706011
3161	324	0.975904	1.975659	6245.057975	3.903228
3190	325	0.978916	2.031848	6481.593664	4.128404
3200	326	0.981928	2.095294	6704.940461	4.390257
3230	327	0.98494	2.168508	7004.281542	4.702428
3240	328	0.987952	2.255583	7308.089698	5.087656
3280	329	0.990964	2.364141	7754.380931	5.58916
3330	330	0.993976	2.510715	8360.679931	6.303688
4250	331	0.996988	2.746456	11672.43681	7.543019

Table D-16. TDS Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
6.8606637	1	0.003012	-2.74646	-18.84250899	7.543019
6.8638034	2	0.006024	-2.51071	-17.23305203	6.303688
6.8834626	3	0.009036	-2.36414	-16.27347287	5.58916
6.946976	4	0.012048	-2.25558	-15.66948262	5.087656
6.9593985	5	0.01506	-2.16851	-15.09151286	4.702428
6.96319	6	0.018072	-2.09529	-14.58992946	4.390257
6.9660242	7	0.021084	-2.03185	-14.15389913	4.128404
6.9754139	8	0.024096	-1.97566	-13.78103903	3.903228
6.993933	9	0.027108	-1.9251	-13.46402142	3.706011
7.0475172	10	0.03012	-1.87903	-13.2424621	3.530736
7.0561753	11	0.033133	-1.83662	-12.95954444	3.37319
7.0817086	12	0.036145	-1.79729	-12.72787595	3.230247
7.0983756	13	0.039157	-1.76055	-12.49707624	3.099552
7.0983756	14	0.042169	-1.72606	-12.25220263	2.979274
7.1066061	15	0.045181	-1.69349	-12.03498616	2.867918
7.1066061	16	0.048193	-1.66263	-11.8156823	2.764351
7.1066061	17	0.051205	-1.63328	-11.6070754	2.667603
7.1139561	18	0.054217	-1.60527	-11.41983307	2.576898
7.1244783	19	0.057229	-1.57847	-11.24576795	2.491564
7.138867	20	0.060241	-1.55275	-11.08489729	2.411042
7.1400568	21	0.063253	-1.52803	-10.91020956	2.334871
7.140453	22	0.066265	-1.5042	-10.74066693	2.262617
7.1459845	23	0.069277	-1.4812	-10.58462164	2.193949
7.1467722	24	0.072289	-1.45895	-10.42679959	2.128542
7.1467722	25	0.075301	-1.43741	-10.27281574	2.066137
7.1546154	26	0.078313	-1.41651	-10.1345893	2.006503
7.1631724	27	0.081325	-1.39621	-10.00129859	1.949405
7.1643336	28	0.084337	-1.37647	-9.861524356	1.894683
7.1701195	29	0.087349	-1.35726	-9.731728503	1.842159
7.1777824	30	0.090361	-1.33853	-9.607697993	1.79167
7.1777824	31	0.093373	-1.32026	-9.476563678	1.743096
7.1777824	32	0.096386	-1.30243	-9.348530237	1.696313
7.1777824	33	0.099398	-1.28499	-9.223401824	1.651208
7.1815919	34	0.10241	-1.26794	-9.105829171	1.607672
7.1815919	35	0.105422	-1.25125	-8.985973947	1.565629
7.185387	36	0.108434	-1.2349	-8.873238287	1.524979
7.185387	37	0.111446	-1.21888	-8.758090328	1.485657
7.185387	38	0.114458	-1.20316	-8.645147957	1.447587
7.185387	39	0.11747	-1.18773	-8.534313145	1.410707
7.185387	40	0.120482	-1.17258	-8.425455193	1.374948
7.1891677	41	0.123494	-1.1577	-8.322869339	1.34026
7.1891677	42	0.126506	-1.14306	-8.217681059	1.306596
7.1929342	43	0.129518	-1.12867	-8.118476616	1.273905
7.1951873	44	0.13253	-1.11451	-8.019113427	1.242134
7.2004249	45	0.135542	-1.10057	-7.924558447	1.21125
7.2078599	46	0.138554	-1.08684	-7.83376933	1.181215
7.2078599	47	0.141566	-1.07331	-7.736256113	1.151991
7.222566	48	0.144578	-1.05997	-7.65572406	1.123542
7.226209	49	0.14759	-1.04682	-7.564567968	1.09584
7.237059	50	0.150602	-1.03385	-7.48206575	1.068855
7.237059	51	0.153614	-1.02105	-7.389423159	1.04255
7.2442275	52	0.156627	-1.00842	-7.305227102	1.016912
7.251345	53	0.159639	-0.99594	-7.221936769	0.991905
7.251345	54	0.162651	-0.98362	-7.132590196	0.967514
7.251345	55	0.165663	-0.97145	-7.044298832	0.94371
7.2584122	56	0.168675	-0.95941	-6.963826534	0.920476
7.2584122	57	0.171687	-0.94752	-6.877495582	0.897795
7.2654297	58	0.174699	-0.93576	-6.798688601	0.875644

TDS - lognormal
7594.5405 = (sum of Mi*Xi)^2
330 = count -1
0.073649521 = standard deviation ^2
321.0893058 = sum of Mi^2

0.973 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	*i*/(n+1)	Mi	Mi * Xi	Mi^2
7.26542972	59	0.177711	-0.924124	-6.714157426	0.854005
7.27239839	60	0.180723	-0.912614	-6.63689454	0.832865
7.27239839	61	0.183735	-0.901223	-6.554051587	0.812203
7.27931884	62	0.186747	-0.889947	-6.478210776	0.792006
7.27931884	63	0.189759	-0.878784	-6.396952391	0.772262
7.28619171	64	0.192771	-0.867731	-6.322452274	0.752957
7.28687641	65	0.195783	-0.85678	-6.243252806	0.734073
7.28961052	66	0.198795	-0.845932	-6.166517656	0.715602
7.29301768	67	0.201807	-0.835182	-6.090998284	0.697529
7.29979737	68	0.204819	-0.82453	-6.018899782	0.679849
7.3065314	69	0.207831	-0.813968	-5.947284207	0.662544
7.3065314	70	0.210843	-0.803498	-5.870780748	0.645608
7.31322039	71	0.213855	-0.793116	-5.800230343	0.629033
7.31322039	72	0.216867	-0.782816	-5.724903972	0.6128
7.3158835	73	0.21988	-0.7726	-5.652250374	0.596911
7.31721241	74	0.222892	-0.762464	-5.57910749	0.581351
7.33302301	75	0.225904	-0.752405	-5.517399538	0.566113
7.33726238	76	0.228916	-0.742423	-5.447350873	0.551192
7.34277919	77	0.231928	-0.732514	-5.378687483	0.536577
7.3524411	78	0.23494	-0.722675	-5.313428277	0.52226
7.3524411	79	0.237952	-0.712906	-5.241601471	0.508235
7.3524411	80	0.240964	-0.703205	-5.170276191	0.494498
7.3556411	81	0.243976	-0.693569	-5.101646784	0.481038
7.3556411	82	0.246988	-0.683999	-5.031252136	0.467855
7.3588309	83	0.25	-0.67449	-4.963460544	0.454937
7.3588309	84	0.253012	-0.665041	-4.893922168	0.442279
7.3588309	85	0.256024	-0.655652	-4.824835557	0.42988
7.36518013	86	0.259036	-0.646319	-4.760254141	0.417728
7.36518013	87	0.262048	-0.637044	-4.691945246	0.405825
7.36518013	88	0.26506	-0.627822	-4.62402152	0.39416
7.36518013	89	0.268072	-0.618654	-4.556499709	0.382733
7.36644515	90	0.271084	-0.609537	-4.490117399	0.371535
7.3714893	91	0.274096	-0.600471	-4.426366577	0.360566
7.3714893	92	0.277108	-0.591453	-4.35989314	0.349817
7.37462902	93	0.28012	-0.582484	-4.295600517	0.339287
7.37775891	94	0.283133	-0.573561	-4.231598208	0.328973
7.37838371	95	0.286145	-0.564683	-4.16644433	0.318866
7.38398946	96	0.289157	-0.55585	-4.104391962	0.308969
7.38398946	97	0.292169	-0.54706	-4.039484728	0.299275
7.38398946	98	0.295181	-0.538312	-3.974888096	0.28978
7.38987274	99	0.298193	-0.529606	-3.913717883	0.280482
7.39018143	100	0.301205	-0.520938	-3.849827083	0.271377
7.39018143	101	0.304217	-0.51231	-3.786066858	0.262462
7.39018143	102	0.307229	-0.50372	-3.722583889	0.253734
7.39510755	103	0.310241	-0.495168	-3.661817428	0.245191
7.39633529	104	0.313253	-0.48665	-3.59942769	0.236828
7.4021466	105	0.316265	-0.478169	-3.539477874	0.228646
7.40245152	106	0.319277	-0.469721	-3.477087259	0.220638
7.40853057	107	0.322289	-0.461307	-3.417607613	0.212804
7.40853057	108	0.325301	-0.452926	-3.355516766	0.205142
7.40853057	109	0.328313	-0.444576	-3.293653326	0.197648
7.41155629	110	0.331325	-0.436257	-3.23334571	0.19032
7.41155629	111	0.334337	-0.427967	-3.171903581	0.183156
7.41457288	112	0.337349	-0.419708	-3.111955041	0.176155
7.41457288	113	0.340361	-0.411477	-3.050926232	0.169313
7.41457288	114	0.343373	-0.403273	-2.990099729	0.162629
7.41607777	115	0.346386	-0.395098	-2.93007854	0.156103

Table D-16. TDS Near Upgradient Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.4175804	116	0.349398	-0.386947	-2.87020896	0.149728
7.41997992	117	0.35241	-0.378823	-2.810857075	0.143507
7.42057891	118	0.355422	-0.370724	-2.750984341	0.137436
7.42057891	119	0.358434	-0.362649	-2.691061859	0.131514
7.42356844	120	0.361446	-0.354597	-2.632376621	0.125739
7.42654907	121	0.364458	-0.346569	-2.573809015	0.12011
7.42654907	122	0.36747	-0.338562	-2.514344904	0.114624
7.42654907	123	0.370482	-0.330577	-2.455049654	0.109281
7.42654907	124	0.373494	-0.322614	-2.395906377	0.10408
7.42714413	125	0.376506	-0.31467	-2.337102323	0.099017
7.42803606	126	0.379518	-0.306748	-2.278531877	0.094094
7.42803606	127	0.38253	-0.298843	-2.219815882	0.089307
7.43011414	128	0.385542	-0.290956	-2.161839633	0.084656
7.43838353	129	0.388554	-0.283089	-2.105726942	0.08014
7.43838353	130	0.391566	-0.275239	-2.047335065	0.075757
7.43838353	131	0.394578	-0.267406	-1.989070035	0.071506
7.43838353	132	0.39759	-0.259589	-1.930923395	0.067387
7.43838353	133	0.400602	-0.251788	-1.872895146	0.063397
7.43838353	134	0.403614	-0.244003	-1.814985287	0.059537
7.4386776	135	0.406627	-0.236232	-1.757254832	0.055806
7.44073371	136	0.409639	-0.228475	-1.700023873	0.052201
7.44249272	137	0.412651	-0.220732	-1.642796976	0.048723
7.44424865	138	0.415663	-0.213003	-1.585643739	0.04537
7.44424865	139	0.418675	-0.205285	-1.528196006	0.042142
7.44424865	140	0.421687	-0.197581	-1.470841368	0.039038
7.45007957	141	0.424699	-0.189887	-1.414670112	0.036057
7.45007957	142	0.427711	-0.182206	-1.357448414	0.033199
7.45007957	143	0.430723	-0.174534	-1.300294475	0.030462
7.45007957	144	0.433735	-0.166873	-1.243216763	0.027847
7.45529849	145	0.436747	-0.159222	-1.187046244	0.025352
7.45587669	146	0.439759	-0.15158	-1.130160279	0.022976
7.45876269	147	0.442771	-0.143947	-1.073665494	0.020721
7.45876269	148	0.445783	-0.136322	-1.016792606	0.018584
7.46164039	149	0.448795	-0.128706	-0.960357932	0.016565
7.47306909	150	0.451807	-0.121097	-0.904965842	0.014664
7.47306909	151	0.454819	-0.113495	-0.848153786	0.012881
7.47873483	152	0.457831	-0.105899	-0.791992703	0.011215
7.47873483	153	0.460843	-0.09831	-0.735231101	0.009665
7.47873483	154	0.463855	-0.090726	-0.67851201	0.008231
7.48211892	155	0.466867	-0.083146	-0.622108302	0.006913
7.48436864	156	0.46988	-0.075572	-0.565610118	0.005711
7.4899709	157	0.472892	-0.068003	-0.509339883	0.004624
7.4899709	158	0.475904	-0.060437	-0.452671819	0.003653
7.49387389	159	0.478916	-0.052876	-0.396244189	0.002796
7.49554194	160	0.481928	-0.045316	-0.339664782	0.002054
7.49831587	161	0.48494	-0.03776	-0.283136004	0.001426
7.50108212	162	0.487952	-0.030204	-0.226565078	0.000912
7.50108212	163	0.490964	-0.022652	-0.169915281	0.000513
7.50494207	164	0.493976	-0.015101	-0.1133323	0.000228
7.50659178	165	0.496988	-0.00755	-0.056674339	5.7E-05
7.51752085	166	0.5	0	0	0
7.52833177	167	0.503012	0.00755	0.056838475	5.7E-05
7.53235592	168	0.506024	0.015101	0.113746277	0.000228
7.53369371	169	0.509036	0.022652	0.170654001	0.000513
7.53369371	170	0.512048	0.030204	0.227550088	0.000912
7.54221346	171	0.51506	0.03776	0.284793575	0.001426
7.54433211	172	0.518072	0.045316	0.341875736	0.002054

Table D-16. TDS Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.54960917	173	0.521084	0.052876	0.399191233	0.002796
7.5574729	174	0.524096	0.060437	0.456751442	0.003653
7.56527528	175	0.527108	0.068003	0.514460801	0.004624
7.57044325	176	0.53012	0.075572	0.572114965	0.005711
7.57198845	177	0.533133	0.083146	0.629580594	0.006913
7.57942343	178	0.536145	0.090726	0.687647034	0.008231
7.58069975	179	0.539157	0.09831	0.745255227	0.009665
7.58069975	180	0.542169	0.105899	0.802790716	0.011215
7.58069975	181	0.545181	0.113495	0.860369297	0.012881
7.58578882	182	0.548193	0.121097	0.918615858	0.014664
7.58578882	183	0.551205	0.128706	0.97633658	0.016565
7.58578882	184	0.554217	0.136322	1.034109047	0.018584
7.58578882	185	0.557229	0.143947	1.091950507	0.020721
7.58832368	186	0.560241	0.15158	1.150236567	0.022976
7.60090246	187	0.563253	0.159222	1.210229575	0.025352
7.60090246	188	0.566265	0.166873	1.268385024	0.027847
7.60090246	189	0.569277	0.174534	1.326618243	0.030462
7.60090246	190	0.572289	0.182206	1.384929234	0.033199
7.60090246	191	0.575301	0.189887	1.443309355	0.036057
7.60090246	192	0.578313	0.197581	1.50179317	0.039038
7.60090246	193	0.581325	0.205285	1.560354756	0.042142
7.60265093	194	0.584337	0.213003	1.619383824	0.04537
7.60389797	195	0.587349	0.220732	1.678424294	0.048723
7.60389797	196	0.590361	0.228475	1.737302876	0.052201
7.60589	197	0.593373	0.236232	1.796755777	0.055806
7.60589	198	0.596386	0.244003	1.85585731	0.059537
7.60613873	199	0.599398	0.251788	1.915133878	0.063397
7.60837447	200	0.60241	0.259589	1.975051194	0.067387
7.60887063	201	0.605422	0.267406	2.034659346	0.071506
7.61085279	202	0.608434	0.275239	2.094805374	0.075757
7.61233684	203	0.611446	0.283089	2.154971265	0.08014
7.61431215	204	0.614458	0.290956	2.215433232	0.084656
7.61529834	205	0.61747	0.298843	2.275777886	0.089307
7.61579107	206	0.620482	0.306748	2.336125266	0.094094
7.61579107	207	0.623494	0.31467	2.396463928	0.099017
7.62070509	208	0.626506	0.322614	2.458543765	0.10408
7.62070509	209	0.629518	0.330577	2.519233254	0.109281
7.62461899	210	0.63253	0.338562	2.581403786	0.114624
7.62559507	211	0.635542	0.346569	2.642792117	0.12011
7.62559507	212	0.638554	0.354597	2.704014699	0.125739
7.62559507	213	0.641566	0.362649	2.765410666	0.131514
7.62559507	214	0.644578	0.370724	2.826988689	0.137436
7.62559507	215	0.64759	0.378823	2.888748767	0.143507
7.62803113	216	0.650602	0.386947	2.951642194	0.149728
7.62948992	217	0.653614	0.395098	3.014397282	0.156103
7.63046126	218	0.656627	0.403273	3.077161762	0.162629
7.63046126	219	0.659639	0.411477	3.139759336	0.169313
7.63046126	220	0.662651	0.419708	3.202565106	0.176155
7.63046126	221	0.665663	0.427967	3.265587747	0.183156
7.63143166	222	0.668675	0.436257	3.329267953	0.19032
7.63191651	223	0.671687	0.444576	3.392965309	0.197648
7.63288551	224	0.674699	0.452926	3.45713297	0.205142
7.63433724	225	0.677711	0.461307	3.521773829	0.212804
7.63530389	226	0.680723	0.469721	3.586462915	0.220638
7.63530389	227	0.683735	0.478169	3.650966488	0.228646
7.63530389	228	0.686747	0.48665	3.715721791	0.236828
7.63530389	229	0.689759	0.495168	3.780754865	0.245191

Table D-16. TDS Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.6362696	230	0.692771	0.50372	3.846543481	0.253734
7.63795737	231	0.695783	0.51231	3.913005051	0.262462
7.64012317	232	0.698795	0.520938	3.980031261	0.271377
7.64012317	233	0.701807	0.529606	4.04625191	0.280482
7.64132437	234	0.704819	0.538312	4.113414498	0.28978
7.64156444	235	0.707831	0.54706	4.18039368	0.299275
7.64156444	236	0.710843	0.55585	4.247565066	0.308969
7.64300364	237	0.713855	0.564683	4.315870576	0.318866
7.64444076	238	0.716867	0.573561	4.384556642	0.328973
7.64468008	239	0.71988	0.582484	4.452900836	0.339287
7.64491934	240	0.722892	0.591453	4.5216143	0.349817
7.64491934	241	0.725904	0.600471	4.59055343	0.360566
7.64491934	242	0.728916	0.609537	4.659857594	0.371535
7.64491934	243	0.731928	0.618654	4.729561555	0.382733
7.64491934	244	0.73494	0.627822	4.799647933	0.39416
7.64491934	245	0.737952	0.637044	4.870151491	0.405825
7.64587583	246	0.740964	0.646319	4.941673039	0.417728
7.64826303	247	0.743976	0.655652	5.014602446	0.42988
7.64969262	248	0.746988	0.665041	5.087357058	0.442279
7.64969262	249	0.75	0.67449	5.159643976	0.454937
7.6501687	250	0.753012	0.683999	5.232708758	0.467855
7.6501687	251	0.756024	0.693569	5.305922081	0.481038
7.65159557	252	0.759036	0.703205	5.380643229	0.494498
7.65207075	253	0.762048	0.712906	5.455209329	0.508235
7.65254569	254	0.76506	0.722675	5.530306482	0.52226
7.65444323	255	0.768072	0.732514	5.606985708	0.536577
7.65444323	256	0.771084	0.742423	5.682833163	0.551192
7.65444323	257	0.774096	0.752405	5.759237553	0.566113
7.65444323	258	0.777108	0.762464	5.836233684	0.581351
7.65610062	259	0.78012	0.7726	5.91510206	0.596911
7.65633717	260	0.783133	0.782816	5.993501185	0.6128
7.65657366	261	0.786145	0.793116	6.072549233	0.629033
7.65822753	262	0.789157	0.803498	6.153367757	0.645608
7.65917137	263	0.792169	0.813968	6.234321928	0.662544
7.65917137	264	0.795181	0.82453	6.315214322	0.679849
7.66387726	265	0.798193	0.835182	6.400733589	0.697529
7.66387726	266	0.801205	0.845932	6.483122012	0.715602
7.66387726	267	0.804217	0.85678	6.566259738	0.734073
7.66387726	268	0.807229	0.867731	6.650181617	0.752957
7.66856111	269	0.810241	0.878784	6.739012457	0.772262
7.66856111	270	0.813253	0.889947	6.824615919	0.792006
7.67136092	271	0.816265	0.901223	6.913605735	0.812203
7.67322312	272	0.819277	0.912614	7.002692906	0.832865
7.67322312	273	0.822289	0.924124	7.091009061	0.854005
7.68248245	274	0.825301	0.935759	7.188949288	0.875644
7.69211334	275	0.828313	0.947521	7.288436426	0.897795
7.69234152	276	0.831325	0.959415	7.380144702	0.920476
7.70074779	277	0.834337	0.971447	7.480869938	0.94371
7.71467747	278	0.837349	0.983623	7.588334721	0.967514
7.7186855	279	0.840361	0.995944	7.687381956	0.991905
7.72001794	280	0.843373	1.00842	7.785023892	1.016912
7.72488844	281	0.846386	1.021053	7.887523002	1.04255
7.7664169	282	0.849398	1.033854	8.029344747	1.068855
7.78322402	283	0.85241	1.046824	8.147664563	1.09584
7.79564654	284	0.855422	1.059973	8.263173863	1.123542
7.84776254	285	0.858434	1.073308	8.423068982	1.151991
7.85554468	286	0.861446	1.086837	8.53769719	1.181215

Table D-16. TDS Near Upgradient Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.8785342	287	0.864458	1.100568	8.670863962	1.21125
7.88983375	288	0.86747	1.114511	8.793304324	1.242134
7.89952447	289	0.870482	1.128674	8.915986541	1.273905
7.90470391	290	0.873494	1.143064	9.035584924	1.306596
7.9266026	291	0.876506	1.157696	9.176594584	1.34026
7.94093976	292	0.879518	1.172582	9.311402714	1.374948
7.94803199	293	0.88253	1.187732	9.440130886	1.410707
7.96206731	294	0.885542	1.203157	9.579616209	1.447587
7.97590836	295	0.888554	1.218875	9.721637223	1.485657
7.9827577	296	0.891566	1.234901	9.857911776	1.524979
7.9827577	297	0.894578	1.251251	9.988433385	1.565629
7.98956045	298	0.89759	1.26794	10.13028492	1.607672
7.98956045	299	0.900602	1.284993	10.2665311	1.651208
7.99294455	300	0.903614	1.302426	10.41021857	1.696313
7.99631723	301	0.906627	1.320263	10.55724527	1.743096
8.00636757	302	0.909639	1.338533	10.71678649	1.79167
8.00636757	303	0.912651	1.357262	10.8667359	1.842159
8.00636757	304	0.915663	1.376475	11.02056285	1.894683
8.00969536	305	0.918675	1.396211	11.18322309	1.949405
8.00969536	306	0.921687	1.416511	11.34581928	2.006503
8.01301211	307	0.924699	1.437406	11.51795452	2.066137
8.01301211	308	0.927711	1.458952	11.69060232	2.128542
8.01961279	309	0.930723	1.481199	11.87863863	2.193949
8.02289687	310	0.933735	1.5042	12.06803862	2.262617
8.02289687	311	0.936747	1.528028	12.25921432	2.334871
8.02371621	312	0.939759	1.552753	12.45884957	2.411042
8.02420749	313	0.942771	1.578469	12.66596262	2.491564
8.02617019	314	0.945783	1.605272	12.8841846	2.576898
8.02617019	315	0.948795	1.63328	13.10898069	2.667603
8.02943284	316	0.951807	1.662634	13.35000501	2.764351
8.04205641	317	0.954819	1.693493	13.61916444	2.867918
8.04237801	318	0.957831	1.726057	13.88160474	2.979274
8.04237801	319	0.960843	1.760554	14.15904373	3.099552
8.04398443	320	0.963855	1.797289	14.45736361	3.230247
8.0481491	321	0.966867	1.836625	14.78142787	3.37319
8.04878828	322	0.96988	1.879025	15.1238756	3.530736
8.05832731	323	0.972892	1.9251	15.51308711	3.706011
8.05864371	324	0.975904	1.975659	15.92113166	3.903228
8.0677762	325	0.978916	2.031848	16.39249125	4.128404
8.07090609	326	0.981928	2.095294	16.91092025	4.390257
8.08023742	327	0.98494	2.168508	17.52206124	4.702428
8.08332861	328	0.987952	2.255583	18.23262053	5.087656
8.0955987	329	0.990964	2.364141	19.13913299	5.58916
8.11072758	330	0.993976	2.510715	20.36372292	6.303688
8.35467426	331	0.996988	2.746456	22.94574292	7.543019

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
954	6.860663671	1	0.00209	-2.8640	-2732.22	8.202281	-19.64868304
957	6.863803391	2	0.00508	-2.5705	-2459.99	6.607589	-17.64356493
976	6.883462586	3	0.00810	-2.4046	-2346.88	5.782076	-16.5519387
1040	6.946975992	4	0.01111	-2.2865	-2377.93	5.227944	-15.88404998
1053	6.959398512	5	0.01413	-2.1936	-2309.89	4.812006	-15.26633465
1057	6.963189986	6	0.01715	-2.1166	-2237.2	4.479817	-14.73799464
1060	6.966024187	7	0.02017	-2.0503	-2173.34	4.20381	-14.2825744
1070	6.975413927	8	0.02318	-1.9920	-2131.46	3.968147	-13.89516943
1090	6.993932975	9	0.02620	-1.9398	-2114.38	3.762815	-13.56681429
1150	7.047517221	10	0.02922	-1.8924	-2176.24	3.581106	-13.33658824
1160	7.056175284	11	0.03224	-1.8489	-2144.7	3.41834	-13.0459889
1190	7.081708586	12	0.03526	-1.8086	-2152.25	3.271078	-12.80806362
1210	7.098375639	13	0.03827	-1.7711	-2143.01	3.136731	-12.57180369
1210	7.098375639	14	0.04129	-1.7359	-2100.43	3.013326	-12.32202356
1220	7.106606138	15	0.04431	-1.7027	-2077.33	2.899285	-12.1006222
1220	7.106606138	16	0.04733	-1.6713	-2039.04	2.793384	-11.87756955
1220	7.106606138	17	0.05034	-1.6415	-2002.65	2.694587	-11.66563399
1229	7.11395611	18	0.05336	-1.6131	-1982.49	2.602056	-11.47544362
1242	7.124478262	19	0.05638	-1.5859	-1969.69	2.515092	-11.2987393
1260	7.138867	20	0.05940	-1.5598	-1965.41	2.433123	-11.13554083
1261.5	7.140056768	21	0.06242	-1.5348	-1936.16	2.355624	-10.9585887
1262	7.140453043	22	0.06543	-1.5107	-1906.49	2.282181	-10.78700308
1269	7.145984468	23	0.06845	-1.4874	-1887.54	2.21243	-10.62910891
1270	7.146772179	24	0.07147	-1.4649	-1860.46	2.146026	-10.46953677
1270	7.146772179	25	0.07449	-1.4432	-1832.82	2.082721	-10.31396043
1280	7.154615357	26	0.07751	-1.4221	-1820.23	2.022238	-10.17424998
1291	7.163172391	27	0.08052	-1.4016	-1809.42	1.964379	-10.03963859
1292.5	7.164333606	28	0.08354	-1.3816	-1785.77	1.908931	-9.898534801
1300	7.170119543	29	0.08656	-1.3623	-1770.93	1.855738	-9.767529813
1310	7.177782416	30	0.08958	-1.3434	-1759.81	1.804641	-9.642411458
1310	7.177782416	31	0.09259	-1.3249	-1735.68	1.755485	-9.510183677

Normal

171709.983	=sum X(i)*M(i)
326.214	=sum M(i)^2
546.89	= standard deviation
18.0614	= square root of sum Mi^2
0.957	= Filliben's Statistic

Lognormal

87.828	=sum X(i)*M(i)
326.214	=sum M(i)^2
0.27	= standard deviation
18.0614	= square root of sum Mi^2
0.986	= Filliben's Statistic

.987+ is acceptable value

Normal - Fail
Lognormal - Fail

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis (continued)

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1310	7.177782416	32	0.09561	-1.3070	-1712.126	1.708162	-9.381122051
1310	7.177782416	33	0.09863	-1.2894	-1689.114	1.662552	-9.255030736
1315	7.181591945	34	0.10165	-1.2722	-1672.968	1.618542	-9.136560442
1315	7.181591945	35	0.10467	-1.2554	-1650.861	1.576048	-9.01582345
1320	7.185387016	36	0.10768	-1.2389	-1635.405	1.53498	-8.902286679
1320	7.185387016	37	0.11070	-1.2228	-1614.105	1.495256	-8.786338175
1320	7.185387016	38	0.11372	-1.2070	-1593.221	1.456815	-8.672660607
1320	7.185387016	39	0.11674	-1.1915	-1572.725	1.419573	-8.5610906
1320	7.185387016	40	0.11975	-1.1762	-1552.601	1.383477	-8.451546466
1325	7.189167738	41	0.12277	-1.1612	-1538.641	1.348474	-8.348336835
1325	7.189167738	42	0.12579	-1.1465	-1519.137	1.314504	-8.242511051
1330	7.192934221	43	0.12881	-1.1320	-1505.618	1.281523	-8.142714487
1333	7.19518732	44	0.13183	-1.1178	-1490.028	1.249479	-8.042786292
1340	7.200424893	45	0.13484	-1.1038	-1479.07	1.218337	-7.947708272
1350	7.207859871	46	0.13786	-1.0900	-1471.469	1.18805	-7.85640223
1350	7.207859871	47	0.14088	-1.0764	-1453.11	1.158589	-7.758380961
1370	7.222566019	48	0.14390	-1.0630	-1456.272	1.129909	-7.67738496
1375	7.22620901	49	0.14692	-1.0498	-1443.416	1.10199	-7.585763309
1390	7.237059026	50	0.14993	-1.0367	-1441.043	1.074792	-7.502815716
1390	7.237059026	51	0.15295	-1.0239	-1423.164	1.048287	-7.409728836
1400	7.244227516	52	0.15597	-1.0112	-1415.634	1.022459	-7.325124634
1410	7.251344983	53	0.15899	-0.9986	-1408.071	0.997266	-7.241425171
1410	7.251344983	54	0.16200	-0.9863	-1390.618	0.972697	-7.151666406
1410	7.251344983	55	0.16502	-0.9740	-1373.376	0.948726	-7.062995827
1420	7.258412151	56	0.16804	-0.9619	-1365.956	0.92533	-6.982162165
1420	7.258412151	57	0.17106	-0.9500	-1348.992	0.90249	-6.895451628
1430	7.265429723	58	0.17408	-0.9382	-1341.601	0.880186	-6.816298574
1430	7.265429723	59	0.17709	-0.9265	-1324.895	0.858402	-6.731420486
1440	7.272398393	60	0.18011	-0.9149	-1317.517	0.83712	-6.653826912
1440	7.272398393	61	0.18313	-0.9035	-1301.048	0.816323	-6.570653249
1450	7.279318835	62	0.18615	-0.8922	-1293.668	0.795994	-6.494497211
1450	7.279318835	63	0.18916	-0.8810	-1277.421	0.776125	-6.412932627
1460	7.286191715	64	0.19218	-0.8699	-1270.027	0.756694	-6.338124544
1461	7.286876412	65	0.19520	-0.8589	-1254.839	0.737693	-6.258628317
1465	7.289610521	66	0.19822	-0.8480	-1242.326	0.71911	-6.181617167
1470	7.29301768	67	0.20124	-0.8372	-1230.706	0.700929	-6.105822951
1480	7.299797367	68	0.20425	-0.8265	-1223.255	0.683142	-6.033456068
1490	7.306531399	69	0.20727	-0.8159	-1215.73	0.665735	-5.961588112
1490	7.306531399	70	0.21029	-0.8054	-1200.073	0.648698	-5.884810536
1500	7.313220387	71	0.21331	-0.7950	-1192.498	0.632022	-5.813998607
1500	7.313220387	72	0.21632	-0.7847	-1176.996	0.615698	-5.738422811
1504	7.315883505	73	0.21934	-0.7744	-1164.719	0.599717	-5.66552462
1506	7.317212408	74	0.22236	-0.7642	-1150.953	0.58407	-5.592142904
1530	7.333023014	75	0.22538	-0.7542	-1153.854	0.568747	-5.530221355
1536.5	7.337262382	76	0.22840	-0.7441	-1143.37	0.553744	-5.45994654
1545	7.342779189	77	0.23141	-0.7342	-1134.337	0.539048	-5.391058883
1560	7.3524411	78	0.23443	-0.7243	-1129.952	0.524652	-5.325581911
1560	7.3524411	79	0.23745	-0.7145	-1114.668	0.510554	-5.253546136
1560	7.3524411	80	0.24047	-0.7048	-1099.487	0.496742	-5.18199517
1565	7.355641103	81	0.24349	-0.6951	-1087.888	0.483214	-5.113170165
1565	7.355641103	82	0.24650	-0.6855	-1072.862	0.469958	-5.042549733
1570	7.358830898	83	0.24952	-0.6760	-1061.317	0.456973	-4.97455389
1570	7.358830898	84	0.25254	-0.6665	-1046.438	0.44425	-4.904814729
1570	7.358830898	85	0.25556	-0.6571	-1031.655	0.431787	-4.835527334

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis (continued)

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1580	7.365180126	86	0.25857	-0.6477	-1023.44	0.419576	-4.770770931
1580	7.365180126	87	0.26159	-0.6384	-1008.743	0.407612	-4.702261078
1580	7.365180126	88	0.26461	-0.6292	-994.1321	0.39589	-4.634153141
1580	7.365180126	89	0.26763	-0.6200	-979.604	0.384403	-4.566430372
1582	7.366445148	90	0.27065	-0.6109	-966.3839	0.373153	-4.499882274
1590	7.371489295	91	0.27366	-0.6018	-956.8134	0.362126	-4.435937008
1590	7.371489295	92	0.27668	-0.5927	-942.4392	0.351328	-4.369295964
1595	7.374629015	93	0.27970	-0.5837	-931.0578	0.340747	-4.304831281
1600	7.377758908	94	0.28272	-0.5748	-919.6629	0.330383	-4.240656752
1601	7.378383713	95	0.28573	-0.5659	-905.9861	0.320229	-4.175335877
1610	7.383989458	96	0.28875	-0.5570	-896.8224	0.310285	-4.113122371
1610	7.383989458	97	0.29177	-0.5482	-882.6353	0.300546	-4.04805564
1610	7.383989458	98	0.29479	-0.5394	-868.5141	0.291006	-3.983291114
1619.5	7.389872739	99	0.29781	-0.5307	-859.5024	0.281665	-3.92195957
1620	7.390181428	100	0.30082	-0.5220	-845.6915	0.272517	-3.857909484
1620	7.390181428	101	0.30384	-0.5134	-831.6796	0.263562	-3.793989627
1620	7.390181428	102	0.30686	-0.5048	-817.7304	0.254795	-3.730355427
1628	7.395107547	103	0.30988	-0.4962	-807.8096	0.246212	-3.669434409
1630	7.396335294	104	0.31290	-0.4877	-794.8871	0.237813	-3.606902988
1639.5	7.402146596	105	0.31591	-0.4792	-785.5799	0.229593	-3.546799155
1640	7.402451521	106	0.31893	-0.4707	-771.9329	0.22155	-3.484265777
1650	7.408530567	107	0.32195	-0.4623	-762.7249	0.213682	-3.424648844
1650	7.408530567	108	0.32497	-0.4539	-748.8625	0.205985	-3.36240639
1650	7.408530567	109	0.32798	-0.4455	-735.0526	0.198458	-3.300399768
1655	7.411556288	110	0.33100	-0.4371	-723.481	0.191099	-3.239951666
1655	7.411556288	111	0.33402	-0.4288	-709.7309	0.183904	-3.178374721
1660	7.414572881	112	0.33704	-0.4206	-698.1325	0.176872	-3.118285515
1660	7.414572881	113	0.34006	-0.4123	-684.437	0.170001	-3.057113407
1660	7.414572881	114	0.34307	-0.4041	-670.7888	0.163288	-2.996152033
1662.5	7.416077773	115	0.34609	-0.3959	-658.1756	0.156733	-2.935988745
1665	7.417580402	116	0.34911	-0.3877	-645.5649	0.150332	-2.87599387
1669	7.419979924	117	0.35213	-0.3796	-633.5264	0.144084	-2.816508887
1670	7.420578905	118	0.35514	-0.3715	-620.3502	0.137988	-2.75650163
1670	7.420578905	119	0.35816	-0.3634	-606.8362	0.132041	-2.696452605
1675	7.423568444	120	0.36118	-0.3553	-595.1367	0.126242	-2.637634504
1680	7.426549072	121	0.36420	-0.3473	-583.3966	0.120589	-2.578942365
1680	7.426549072	122	0.36722	-0.3392	-569.9181	0.115082	-2.519360052
1680	7.426549072	123	0.37023	-0.3312	-556.4741	0.109716	-2.459929713
1680	7.426549072	124	0.37325	-0.3233	-543.0663	0.104493	-2.400659791
1681	7.427144133	125	0.37627	-0.3153	-530.0101	0.099411	-2.341737906
1682.5	7.428036062	126	0.37929	-0.3074	-517.1223	0.094466	-2.283032901
1682.5	7.428036062	127	0.38231	-0.2994	-503.7959	0.08966	-2.224198681
1686	7.430114139	128	0.38532	-0.2915	-491.5205	0.08499	-2.166105399
1700	7.43838353	129	0.38834	-0.2836	-482.1989	0.080455	-2.109870609
1700	7.43838353	130	0.39136	-0.2758	-468.8267	0.076055	-2.051360341
1700	7.43838353	131	0.39438	-0.2679	-455.4815	0.071787	-1.992968464
1700	7.43838353	132	0.39739	-0.2601	-442.1673	0.067651	-1.93471189
1700	7.43838353	133	0.40041	-0.2523	-428.8783	0.063646	-1.876565251
1700	7.43838353	134	0.40343	-0.2445	-415.6143	0.05977	-1.818528545
1700.5	7.438677604	135	0.40645	-0.2367	-402.4957	0.056023	-1.760679835
1704	7.440733707	136	0.40947	-0.2289	-390.0794	0.052404	-1.703331394
1707	7.442492723	137	0.41248	-0.2212	-377.5232	0.048913	-1.645995285
1710	7.444248649	138	0.41550	-0.2134	-364.9419	0.045547	-1.588724319
1710	7.444248649	139	0.41852	-0.2057	-351.7205	0.042306	-1.531166565

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis (continued)

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1710	7.444248649	140	0.42154	-0.1980	-338.5185	0.03919	-1.473693444
1720	7.45007957	141	0.42455	-0.1903	-327.2385	0.036197	-1.417414314
1720	7.45007957	142	0.42757	-0.1826	-314.0003	0.033328	-1.36007404
1720	7.45007957	143	0.43059	-0.1749	-300.7798	0.03058	-1.302809994
1720	7.45007957	144	0.43361	-0.1672	-287.5768	0.027954	-1.245622175
1729	7.455298486	145	0.43663	-0.1595	-275.8272	0.02545	-1.189343157
1730	7.455876687	146	0.43964	-0.1519	-262.7405	0.023065	-1.132347178
1735	7.458762692	147	0.44266	-0.1442	-250.2311	0.020801	-1.075743004
1735	7.458762692	148	0.44568	-0.1366	-236.9761	0.018656	-1.01875988
1740	7.461640392	149	0.44870	-0.1290	-224.3797	0.016629	-0.962207205
1760	7.473069088	150	0.45171	-0.1213	-213.5408	0.014721	-0.906707501
1760	7.473069088	151	0.45473	-0.1137	-200.1349	0.012931	-0.849784998
1770	7.478734826	152	0.45775	-0.1061	-187.7999	0.011258	-0.793506119
1770	7.478734826	153	0.46077	-0.0985	-174.3419	0.009702	-0.736642488
1770	7.478734826	154	0.46379	-0.0909	-160.892	0.008263	-0.679812867
1776	7.482118924	155	0.46680	-0.0833	-147.952	0.00694	-0.623307674
1780	7.484368643	156	0.46982	-0.0757	-134.7775	0.005733	-0.566699237
1790	7.489970899	157	0.47284	-0.0681	-121.9592	0.004642	-0.510319121
1790	7.489970899	158	0.47586	-0.0606	-108.3899	0.003667	-0.45354036
1797	7.493873887	159	0.47888	-0.0530	-95.1975	0.002806	-0.396993909
1800	7.495541944	160	0.48189	-0.0454	-81.7256	0.002061	-0.340320933
1805	7.498315871	161	0.48491	-0.0378	-68.28598	0.001431	-0.283673054
1810	7.501082124	162	0.48793	-0.0303	-54.77682	0.000916	-0.22700852
1810	7.501082124	163	0.49095	-0.0227	-41.0785	0.000515	-0.170239335
1817	7.504942068	164	0.49396	-0.0151	-27.4902	0.000229	-0.113545603
1820	7.50659178	165	0.49698	-0.0076	-13.76779	5.72E-05	-0.056785281
1840	7.517520851	166	0.50000	0.0000	0	0	0
1860	7.528331767	167	0.50302	0.0076	14.07038	5.72E-05	0.056949738
1867.5	7.532355917	168	0.50604	0.0151	28.25424	0.000229	0.11396036
1870	7.53369371	169	0.50905	0.0227	42.44022	0.000515	0.170979465
1870	7.53369371	170	0.51207	0.0303	56.59263	0.000916	0.227995459
1886	7.542213463	171	0.51509	0.0378	71.35034	0.001431	0.285333769
1890	7.544332108	172	0.51811	0.0454	85.81188	0.002061	0.342536159
1900	7.549609165	173	0.52112	0.0530	100.654	0.002806	0.39994653
1915	7.557472902	174	0.52414	0.0606	115.959	0.003667	0.457627811
1930	7.565275282	175	0.52716	0.0681	131.498	0.004642	0.515449884
1940	7.570443252	176	0.53018	0.0757	146.8924	0.005733	0.573216609
1943	7.571988449	177	0.53320	0.0833	161.8641	0.00694	0.630794372
1957.5	7.579423428	178	0.53621	0.0909	177.9357	0.008263	0.688965406
1960	7.580699752	179	0.53923	0.0985	193.0566	0.009702	0.746685858
1960	7.580699752	180	0.54225	0.1061	207.9592	0.011258	0.804324766
1960	7.580699752	181	0.54527	0.1137	222.8775	0.012931	0.862024002
1970	7.585788822	182	0.54829	0.1213	239.0201	0.014721	0.920383787
1970	7.585788822	183	0.55130	0.1290	254.0391	0.016629	0.978216622
1970	7.585788822	184	0.55432	0.1366	269.0737	0.018656	1.036109825
1970	7.585788822	185	0.55734	0.1442	284.124	0.020801	1.094063397
1975	7.588323677	186	0.56036	0.1519	299.9494	0.023065	1.152462314
2000	7.60090246	187	0.56337	0.1595	319.0598	0.02545	1.212571347
2000	7.60090246	188	0.56639	0.1672	334.3916	0.027954	1.270839132
2000	7.60090246	189	0.56941	0.1749	349.7439	0.03058	1.329184687
2000	7.60090246	190	0.57243	0.1826	365.1166	0.033328	1.387608014
2000	7.60090246	191	0.57545	0.1903	380.5098	0.036197	1.446109112
2000	7.60090246	192	0.57846	0.1980	395.9281	0.03919	1.504705263
2000	7.60090246	193	0.58148	0.2057	411.369	0.042306	1.563387826

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis (continued)

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
2003.5	7.60265093	194	0.58450	0.2134	427.5796	0.045547	1.622529954
2006	7.603897969	195	0.58752	0.2212	443.6506	0.048913	1.681691964
2006	7.603897969	196	0.59053	0.2289	459.2132	0.052404	1.740682927
2010	7.605890001	197	0.59355	0.2367	475.7521	0.056023	1.80025777
2010	7.605890001	198	0.59657	0.2445	491.4028	0.05977	1.859480359
2010.5	7.606138726	199	0.59959	0.2523	507.2116	0.063646	1.918886754
2015	7.608374474	200	0.60261	0.2601	524.0983	0.067651	1.978926268
2016	7.608870629	201	0.60562	0.2679	540.1475	0.071787	2.038647127
2020	7.61085279	202	0.60864	0.2758	557.0764	0.076055	2.098923982
2023	7.612336837	203	0.61166	0.2836	573.8166	0.080455	2.159211836
2027	7.614312146	204	0.61468	0.2915	590.9325	0.08499	2.219804749
2029	7.61529834	205	0.61769	0.2994	607.5494	0.08966	2.280271176
2030	7.615791072	206	0.62071	0.3074	623.9276	0.094466	2.340740061
2030	7.615791072	207	0.62373	0.3153	640.0479	0.099411	2.401217253
2040	7.620705087	208	0.62675	0.3233	659.4376	0.104493	2.46342145
2040	7.620705087	209	0.62977	0.3312	675.7185	0.109716	2.524240895
2048	7.624618986	210	0.63278	0.3392	694.7573	0.115082	2.58655269
2050	7.625595072	211	0.63580	0.3473	711.8827	0.120589	2.64806305
2050	7.625595072	212	0.63882	0.3553	728.3762	0.126242	2.709415671
2050	7.625595072	213	0.64184	0.3634	744.9187	0.132041	2.770950348
2050	7.625595072	214	0.64486	0.3715	761.5077	0.137988	2.83265841
2050	7.625595072	215	0.64787	0.3796	778.1481	0.144084	2.894557197
2055	7.628031127	216	0.65089	0.3877	796.7783	0.150332	2.957591232
2058	7.629489916	217	0.65391	0.3959	814.7521	0.156733	3.020477564
2060	7.630461262	218	0.65693	0.4041	832.4246	0.163288	3.08339029
2060	7.630461262	219	0.65994	0.4123	849.3616	0.170001	3.146126661
2060	7.630461262	220	0.66296	0.4206	866.3571	0.176872	3.209079903
2060	7.630461262	221	0.66598	0.4288	883.4112	0.183904	3.272250016
2062	7.631431665	222	0.66900	0.4371	901.4005	0.191099	3.336069885
2063	7.631916513	223	0.67202	0.4455	919.0385	0.198458	3.399915173
2065	7.632885505	224	0.67503	0.4539	937.2127	0.205985	3.464231236
2068	7.634337236	225	0.67805	0.4623	955.9485	0.213682	3.529029671
2070	7.635303886	226	0.68107	0.4707	974.3299	0.22155	3.593867241
2070	7.635303886	227	0.68409	0.4792	991.8575	0.229593	3.65851838
2070	7.635303886	228	0.68710	0.4877	1009.458	0.237813	3.72343861
2070	7.635303886	229	0.69012	0.4962	1027.129	0.246212	3.788619249
2072	7.636269603	230	0.69314	0.5048	1045.887	0.254795	3.854573807
2075.5	7.637957367	231	0.69616	0.5134	1065.525	0.263562	3.921193452
2080	7.640123173	232	0.69918	0.5220	1085.826	0.272517	3.988387015
2080	7.640123173	233	0.70219	0.5307	1103.899	0.281665	4.054772694
2082.5	7.641324374	234	0.70521	0.5394	1123.404	0.291006	4.122110365
2083	7.641564441	235	0.70823	0.5482	1141.944	0.300546	4.189263569
2083	7.641564441	236	0.71125	0.5570	1160.299	0.310285	4.256600017
2086	7.643003636	237	0.71427	0.5659	1180.442	0.320229	4.32508101
2089	7.644440762	238	0.71728	0.5748	1200.735	0.330383	4.393942623
2089.5	7.644680082	239	0.72030	0.5837	1219.715	0.340747	4.462469622
2090	7.644919345	240	0.72332	0.5927	1238.804	0.351328	4.531365902
2090	7.644919345	241	0.72634	0.6018	1257.698	0.362126	4.600478857
2090	7.644919345	242	0.72935	0.6109	1276.702	0.373153	4.669991611
2090	7.644919345	243	0.73237	0.6200	1295.805	0.384403	4.739869398
2090	7.644919345	244	0.73539	0.6292	1315.023	0.39589	4.810164366
2090	7.644919345	245	0.73841	0.6384	1334.35	0.407612	4.880859132
2092	7.645875825	246	0.74143	0.6477	1355.086	0.419576	4.952590636
2097	7.648263031	247	0.74444	0.6571	1377.95	0.431787	5.025714744

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis (continued)

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
2100	7.649692624	248	0.74746	0.6665	1399.694	0.44425	5.098680153
2100	7.649692624	249	0.75048	0.6760	1419.595	0.456973	5.171175792
2101	7.650168701	250	0.75350	0.6855	1440.309	0.469958	5.244458722
2101	7.650168701	251	0.75651	0.6951	1460.481	0.483214	5.317906871
2104	7.651595574	252	0.75953	0.7048	1482.898	0.496742	5.392839026
2105	7.652070746	253	0.76255	0.7145	1504.087	0.510554	5.467640768
2106	7.652545693	254	0.76557	0.7243	1525.436	0.524652	5.542956191
2110	7.654443226	255	0.76859	0.7342	1549.159	0.539048	5.619882212
2110	7.654443226	256	0.77160	0.7441	1570.134	0.553744	5.695973326
2110	7.654443226	257	0.77462	0.7542	1591.263	0.568747	5.772621374
2110	7.654443226	258	0.77764	0.7642	1612.557	0.58407	5.849869866
2113.5	7.65610062	259	0.78066	0.7744	1636.725	0.599717	5.92899361
2114	7.656337166	260	0.78368	0.7847	1658.78	0.615698	6.007654292
2114.5	7.656573657	261	0.78669	0.7950	1681.024	0.632022	6.086963912
2118	7.658227526	262	0.78971	0.8054	1705.875	0.648698	6.168072861
2120	7.659171368	263	0.79273	0.8159	1729.763	0.665735	6.249316191
2120	7.659171368	264	0.79575	0.8265	1752.23	0.683142	6.330487223
2130	7.663877259	265	0.79876	0.8372	1783.268	0.700929	6.416312111
2130	7.663877259	266	0.80178	0.8480	1806.248	0.71911	6.49899677
2130	7.663877259	267	0.80480	0.8589	1829.437	0.737693	6.582430731
2130	7.663877259	268	0.80782	0.8699	1852.848	0.756694	6.666666272
2140	7.668561108	269	0.81084	0.8810	1885.297	0.776125	6.755847195
2140	7.668561108	270	0.81385	0.8922	1909.275	0.795994	6.841773228
2146	7.671360923	271	0.81687	0.9035	1938.923	0.816323	6.931118161
2150	7.673223121	272	0.81989	0.9149	1967.127	0.83712	7.020558521
2150	7.673223121	273	0.82291	0.9265	1991.975	0.858402	7.10924106
2170	7.682482447	274	0.82592	0.9382	2035.856	0.880186	7.207570115
2191	7.69211334	275	0.82894	0.9500	2081.438	0.90249	7.307465372
2191.5	7.69234152	276	0.83196	0.9619	2108.093	0.92533	7.399576492
2210	7.700747795	277	0.83498	0.9740	2152.597	0.948726	7.50072568
2241	7.714677474	278	0.83800	0.9863	2210.195	0.972697	7.608629827
2250	7.718685495	279	0.84101	0.9986	2246.922	0.997266	7.708126362
2253	7.72001794	280	0.84403	1.0112	2278.16	1.022459	7.806228265
2264	7.724888439	281	0.84705	1.0239	2318.017	1.048287	7.909197426
2360	7.766416898	282	0.85007	1.0367	2446.663	1.074792	8.051612478
2400	7.783224016	283	0.85308	1.0498	2519.417	1.10199	8.170493697
2430	7.795646536	284	0.85610	1.0630	2583.022	1.129909	8.286553465
2560	7.847762537	285	0.85912	1.0764	2755.527	1.158589	8.447158039
2580	7.855544678	286	0.86214	1.0900	2812.141	1.18805	8.562363839
2640	7.878534196	287	0.86516	1.1038	2913.988	1.218337	8.696193952
2670	7.889833751	288	0.86817	1.1178	2984.528	1.249479	8.819262643
2696	7.899524472	289	0.87119	1.1320	3051.989	1.281523	8.942605393
2710	7.904703914	290	0.87421	1.1465	3107.064	1.314504	9.062886239
2770	7.926602599	291	0.87723	1.1612	3216.63	1.348474	9.20467443
2810	7.940939762	292	0.88025	1.1762	3305.159	1.383477	9.340237518
2830	7.948031991	293	0.88326	1.1915	3371.828	1.419573	9.469750456
2870	7.962067309	294	0.88628	1.2070	3464.049	1.456815	9.610102748
2910	7.97590836	295	0.88930	1.2228	3558.367	1.495256	9.752992838
2930	7.982757702	296	0.89232	1.2389	3630.104	1.53498	9.890183702
2930	7.982757702	297	0.89533	1.2554	3678.344	1.576048	10.02161285
2950	7.989560449	298	0.89835	1.2722	3753.047	1.618542	10.16447363
2950	7.989560449	299	0.90137	1.2894	3803.729	1.662552	10.30173712
2960	7.992944547	300	0.90439	1.3070	3868.621	1.708162	10.44651175
2970	7.996317232	301	0.90741	1.3249	3935.094	1.755485	10.5946992

Table D-17. TDS Near Upgradient Background Data, Filliben's Statistic Analysis (continued)

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Ml (log)
3000	8.006367568	302	0.91042	1.3434	4030.107	1.804641	10.75550719
3000	8.006367568	303	0.91344	1.3623	4086.764	1.855738	10.9067127
3000	8.006367568	304	0.91646	1.3816	4144.922	1.908931	11.06192318
3010	8.009695358	305	0.91948	1.4016	4218.705	1.964379	11.226094
3010	8.009695358	306	0.92249	1.4221	4280.383	2.022238	11.39021999
3020	8.01301211	307	0.92551	1.4432	4358.354	2.082721	11.56408625
3020	8.01301211	308	0.92853	1.4649	4424.095	2.146026	11.73851955
3040	8.019612794	309	0.93155	1.4874	4521.769	2.21243	11.92856466
3050	8.02289687	310	0.93457	1.5107	4607.601	2.282181	12.12010116
3050	8.02289687	311	0.93758	1.5348	4681.153	2.355624	12.31357534
3052.5	8.023716206	312	0.94060	1.5598	4761.433	2.433123	12.51577028
3054	8.024207486	313	0.94362	1.5859	4843.351	2.515092	12.72562356
3060	8.026170195	314	0.94664	1.6131	4936.052	2.602056	12.94692604
3060	8.026170195	315	0.94966	1.6415	5023.05	2.694587	13.17511651
3070	8.029432841	316	0.95267	1.6713	5131.02	2.793384	13.41992861
3109	8.04205641	317	0.95569	1.7027	5293.784	2.899285	13.69344022
3110	8.042378005	318	0.95871	1.7359	5398.629	3.013326	13.96071106
3110	8.042378005	319	0.96173	1.7711	5508.064	3.136731	14.24370907
3115	8.043984431	320	0.96474	1.8086	5633.827	3.271078	14.54844733
3128	8.048149102	321	0.96776	1.8489	5783.282	3.41834	14.88002489
3130	8.048788284	322	0.97078	1.8924	5923.153	3.581106	15.23137465
3160	8.058327307	323	0.97380	1.9398	6129.76	3.762815	15.63152385
3161	8.058643712	324	0.97682	1.9920	6296.778	3.968147	16.05298566
3190	8.067776196	325	0.97983	2.0503	6540.519	4.20381	16.5415179
3200	8.070906089	326	0.98285	2.1166	6772.985	4.479817	17.08253988
3230	8.080237416	327	0.98587	2.1936	7085.42	4.812006	17.72503877
3240	8.083328609	328	0.98889	2.2865	7408.162	5.227944	18.48228578
3280	8.095598701	329	0.99190	2.4046	7887.071	5.782076	19.46663496
3330	8.110727583	330	0.99492	2.5705	8559.842	6.607589	20.84881233
4250	8.354674262	331	0.99791	2.8640	12171.84	8.202281	23.92747325

Table D-18. TDS Near Upgradient Background Data Set, Distribution Summary

Parameter	Distribution Type (tested)	Coefficient of Variation	Studentized Range Test	Coefficient of Skewness (-1 to 1)	Shapiro-Wilk Test	Filliben's Statistic	Histogram	Probability Plot	Number of Samples	Distribution Type (determined)
TDS	Normal	Pass	Pass	Pass	Fail	Fail	X	?	331	Nonparametric
TDS	Lognormal	Pass	NA	Pass	Fail	Fail		?	331	

NA - not applicable
? - Results of graphical test were inconclusive.

Table D-19. T_n Statistic Analysis for TDS Near Upgradient Background Data Set

Parameter	Distribution	Maximum Observation	Mean	Standard Deviation	T_n Statistic	N	Upper 5% Critical Value	Pass or Fail T_n Statistic
TDS	Lognormal	8.354674262	7.52	0.27	3.060	331	3.34+	Pass

N - number of samples

Table D-20. 95th Percentile for Near Upgradient TDS Background Data Set

Parameter	Distribution	Censored?	95th Percentile (mg/L)	Sample #
TDS	Nonparametric	No	3060	331

SD = standard deviation

Table D-21. Summary Table for Near Upgradient TDS Background Data Set

Parameter	Distribution	Mean	SD	95th Percentile (mg/L)	Range (normal)	Sample #
TDS	Nonparametric	1923.02	546.89	3060	4250 to 954	331

SD = standard deviation
ND = non-detect, concentration reported as the minimum detecatable activity (MDA)

Table D-22. TDS Far Upgradient Background Data Set
(data not corrected for non-detects or duplicates)

Well Name	Sample Date	Parameter Code	Lab Code	Remark Code	Value (mg/L)
0914	10-Jan-83	TDS	Homestake	None	430
0914	14-Mar-94	TDS	Energy Labs	None	1260
0914	12-May-94	TDS	Energy Labs	None	1418
0914	24-Jan-96	TDS	Energy Labs	None	1086
0914	22-May-97	TDS	Energy Labs	None	1160
0914	12-May-98	TDS	Energy Labs	None	1300
0914	19-May-99	TDS	Energy Labs	None	1320
0916	21-Feb-94	TDS	Energy Labs	None	360
0916	26-Apr-94	TDS	Energy Labs	None	318
0916	29-Jan-96	TDS	Energy Labs	None	362
0916	28-May-97	TDS	Energy Labs	None	393
0916	12-May-98	TDS	Energy Labs	None	377
0916	20-May-99	TDS	Energy Labs	None	331
0920	03-Nov-81	TDS	Homestake	None	2670
0920	30-Aug-82	TDS	Homestake	None	2480
0920	05-Jan-83	TDS	Homestake	None	2470
0920	31-Aug-83	TDS	Homestake	None	2420
0920	14-Dec-89	TDS	Homestake	None	2540
0920	09-May-90	TDS	Homestake	None	2610
0920	21-May-91	TDS	Homestake	None	2710
0920	06-May-92	TDS	Homestake	None	2630
0920	06-May-93	TDS	Homestake	None	2930
0920	28-Feb-94	TDS	Energy Labs	None	2556
0920	29-Apr-94	TDS	Energy Labs	None	2717
0920	29-Apr-94	TDS	Energy Labs	None	2663
0920	11-May-94	TDS	Energy Labs	None	2650
0920	10-May-95	TDS	Energy Labs	None	2476
0920	24-Jan-96	TDS	Energy Labs	None	2723
0920	20-May-96	TDS	Energy Labs	None	2734
0920	23-May-97	TDS	Energy Labs	None	2690
0920	12-May-98	TDS	Energy Labs	None	2670
0920	19-May-99	TDS	Energy Labs	None	2750
0921	28-Feb-94	TDS	Energy Labs	None	2542
0921	16-May-94	TDS	Energy Labs	None	2388
0921	24-Jan-96	TDS	Energy Labs	None	2542
0921	23-May-97	TDS	Energy Labs	None	2560
0921	12-May-98	TDS	Energy Labs	None	2580
0921	19-May-99	TDS	Energy Labs	None	2640
0922	03-Nov-81	TDS	Homestake	None	900
0922	04-Mar-94	TDS	Energy Labs	None	1071
0922	16-May-94	TDS	Energy Labs	None	1222
0922	24-Jan-96	TDS	Energy Labs	None	1083
0922	23-May-97	TDS	Energy Labs	None	997
0922	12-May-98	TDS	Energy Labs	None	1060
0922	19-May-99	TDS	Energy Labs	None	1040
0950	28-Feb-94	TDS	Energy Labs	None	1832
0950	11-May-94	TDS	Energy Labs	None	1671
0950	25-Jan-96	TDS	Energy Labs	None	1879

Table D-23. TDS Far Upgradient Background Data Set for Well 0914
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
10-Jan-83	TDS	430
14-Mar-94	TDS	1260
12-May-94	TDS	1418
24-Jan-96	TDS	1086
22-May-97	TDS	1160
12-May-98	TDS	1300
19-May-99	TDS	1320

Table D-24. TDS Far Upgradient Background Data Set for Well 0916
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
21-Feb-94	TDS	360
26-Apr-94	TDS	318
29-Jan-96	TDS	362
28-May-97	TDS	393
12-May-98	TDS	377
20-May-99	TDS	331

Table D-25. TDS Far Upgradient Background Data Set for Well 0920
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Nov-81	TDS	2670
30-Aug-82	TDS	2480
05-Jan-83	TDS	2470
31-Aug-83	TDS	2420
14-Dec-89	TDS	2540
09-May-90	TDS	2610
21-May-91	TDS	2710
06-May-92	TDS	2630
06-May-93	TDS	2930
28-Feb-94	TDS	2556
29-Apr-94	TDS	2690
11-May-94	TDS	2650
10-May-95	TDS	2476
24-Jan-96	TDS	2723
20-May-96	TDS	2734
23-May-97	TDS	2690
12-May-98	TDS	2670
19-May-99	TDS	2750

Table D-26. TDS Far Upgradient Background Data Set for Well 0921
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
28-Feb-94	TDS	2542
16-May-94	TDS	2388
24-Jan-96	TDS	2542
23-May-97	TDS	2560
12-May-98	TDS	2580
19-May-99	TDS	2640

Table D-27. TDS Far Upgradient Background Data Set for Well 0922
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
03-Nov-81	TDS	900
04-Mar-94	TDS	1071
16-May-94	TDS	1222
24-Jan-96	TDS	1083
23-May-97	TDS	997
12-May-98	TDS	1060
19-May-99	TDS	1040

Table D-28. TDS Far Upgradient Background Data Set for Well 0950
(corrected for non-detects and duplicates)

Sample Date	Parameter Code	Final Data Set
28-Feb-94	TDS	1832
11-May-94	TDS	1671
25-Jan-96	TDS	1879

Table D-29. TDS Far Upgradient Background Data Set Used in Statistical Analysis
(all concentrations in mg/L)

Well ID					
Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
1418	393	2930	2640	1222	1879
1320	377	2750	2580	1083	1832
1300	362	2734	2560	1071	1671
1260	360	2723	2542	1060	
1160	331	2710	2542	1040	
1086	318	2690	2388	997	
430		2690		900	
		2670			
		2670			
		2650			
		2630			
		2610			
		2556			
		2540			
		2480			
		2476			
		2470			
		2420			

Table D-30. TDS Far Upgradient Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
TDS	2930	2750	1.1	**Pass**

Table D-31. TDS Far Upgradient Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
TDS, normal	1819.60	888.18	0.49	**Pass**
TDS, lognormal	7.32	0.70	0.10	**Pass**

Table D-32. TDS Far Upgradient Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
TDS, normal	2930	318	888.18	5.35	3.83	2.94	**Fail**

W = range of values
S = standard deviation

Table D-33. Far Upgradient Background TDS Data Set, Coefficient of Skewness Analysis

TDS	Normal (xi-avg)^3
318	-3385782739
331	-3298605050
360	-3109551584
362	-3096786573
377	-3002160734
393	-2903372592
430	-2683276496
900	-777661966
997	-556620729
1040	-473814536
1060	-438275879
1071	-419509753
1083	-399657177
1086	-394793879
1160	-286968043
1222	-213413795
1260	-175235951
1300	-140280323
1320	-124697054
1418	-64769017.2
1671	-3281097.37
1832	1908.58757
1879	209629.63
2388	183641978
2420	216436890
2470	275137712
2476	282822635
2480	288024604
2540	373877051
2542	376999598
2542	376999598
2556	399345567
2560	405888474
2580	439676866
2610	493796275
2630	532237093
2640	552183866
2650	572622881
2670	615001640
2670	615001640
2690	659421369
2690	659421369
2710	705930068
2723	737303670
2734	764565532
2750	805406377
2930	1369125793

Normal	
standard deviation =	888.1781221
mean =	1819.596
count =	47
sum of (xi-avg)^3 =	-13247434881
1/n =	0.021276596
standard deviation cubed =	700648527.8
((n-1)/n)^(3/2) =	0.968255473
coef. of skewness =	-0.4
acceptable range -1 to 1	Pass

Table D-33. Far Upgradient Background TDS Data Set, Coefficient of Skewness Analysis (continued)

TDS	Lognormal (xi-avg)^3
5.76205138	-3.78523616
5.80211838	-3.50073102
5.88610403	-2.9513725
5.89164421	-2.9173069
5.93224519	-2.67562337
5.97380961	-2.442425
6.06378521	-1.9848579
6.80239476	-0.13909151
6.90475077	-0.07187081
6.94697599	-0.05212191
6.96602419	-0.04454798
6.97634807	-0.04076814
6.98749025	-0.03693546
6.9902565	-0.03602268
7.05617528	-0.01847161
7.10824414	-0.00956518
7.138867	-0.00599401
7.17011954	-0.00340201
7.18538702	-0.00246757
7.25700271	-0.00025624
7.42117753	0.0010199
7.51316355	0.00714946
7.538495	0.01035687
7.77821147	0.0958788
7.79152282	0.10448995
7.81197343	0.11870006
7.81439963	0.12046674
7.81601384	0.12165181
7.83991936	0.14012249
7.84070645	0.14076047
7.84070645	0.14076047
7.84619882	0.14526634
7.84776254	0.14656656
7.85554468	0.1531528
7.8671055	0.16329683
7.87473913	0.17023463
7.8785342	0.17375572
7.88231492	0.17731144
7.88983375	0.18452632
7.88983375	0.18452632
7.89729647	0.1918783
7.89729647	0.1918783
7.90470391	0.19936641
7.90948949	0.20430622
7.91352102	0.20853045
7.91935619	0.21474707
7.9827577	0.29043205

Lognormal	
standard deviation =	0.702228822
mean =	7.321
count =	47
sum of (xi-avg)^3 =	-16.71793517
1/n =	0.021276596
standard deviation cubed =	0.346286812
((n-1)/n)^(3/2) =	0.968255473
coef. of skewness =	-1.1
acceptable range -1 to 1	Fail

Table D-34. TDS Far Upgradient Background Data Set, Shapiro-Wilk Test of Normality Analysis

TDS - raw data				
X(i)	X(n-i+1)	X(n-i+1)-X(i)	An-i+1	Bi
318	2930	2612	0.3808	994.6496
331	2750	2419	0.262	633.778
360	2734	2374	0.2291	543.8834
362	2723	2361	0.2052	484.4772
377	2710	2333	0.1859	433.7047
393	2690	2297	0.1695	389.3415
430	2690	2260	0.155	350.3
900	2670	1770	0.142	251.34
997	2670	1673	0.13	217.49
1040	2650	1610	0.1189	191.429
1060	2640	1580	0.1085	171.43
1071	2630	1559	0.0986	153.7174
1083	2610	1527	0.0892	136.2084
1086	2580	1494	0.0801	119.6694
1160	2560	1400	0.0713	99.82
1222	2556	1334	0.0628	83.7752
1260	2542	1282	0.0546	69.9972
1300	2542	1242	0.0465	57.753
1320	2540	1220	0.0385	46.97
1418	2480	1062	0.0307	32.6034
1671	2476	805	0.0229	18.4345
1832	2470	638	0.0153	9.7614
1879	2420	541	0.0076	4.1116
2388	2388	0	0	0
2420	1879	-541		
2470	1832	-638		
2476	1671	-805		
2480	1418	-1062		
2540	1320	-1220		
2542	1300	-1242		
2542	1260	-1282		
2556	1222	-1334		
2560	1160	-1400		
2580	1086	-1494		
2610	1083	-1527		
2630	1071	-1559		
2640	1060	-1580		
2650	1040	-1610		
2670	997	-1673		
2670	900	-1770		
2690	430	-2260		
2690	393	-2297		
2710	377	-2333		
2723	362	-2361		
2734	360	-2374		
2750	331	-2419		
2930	318	-2612		

5494.645 =sum of B
888.1781 = standard deviation
46 = count - 1

0.831996 = W statistic
0.946 is acceptable low value
Fails Shapiro-Wilk test

Table D-34. TDS Far Upgradient Background Data Set, Shapiro-Wilk Test of Normality Analysis (continued)

TDS - log data				
X(i)	X(n-i+1)	X(n-i+1)-X(i)	An-i+1	Bi
5.762051	7.982758	2.220706319	0.3808	0.845645
5.802118	7.919356	2.117237815	0.262	0.554716
5.886104	7.913521	2.027416986	0.2291	0.464481
5.891644	7.909489	2.017845281	0.2052	0.414062
5.932245	7.904704	1.972458726	0.1859	0.36668
5.97381	7.897296	1.923486861	0.1695	0.326031
6.063785	7.897296	1.833511264	0.155	0.284194
6.802395	7.889834	1.087438988	0.142	0.154416
6.904751	7.889834	0.985082981	0.13	0.128061
6.946976	7.882315	0.935338927	0.1189	0.111212
6.966024	7.878534	0.912510009	0.1085	0.099007
6.976348	7.874739	0.898391055	0.0986	0.088581
6.98749	7.867106	0.879615253	0.0892	0.078462
6.990257	7.855545	0.865288177	0.0801	0.06931
7.056175	7.847763	0.791587253	0.0713	0.05644
7.108244	7.846199	0.737954676	0.0628	0.046344
7.138867	7.840706	0.701839452	0.0546	0.03832
7.17012	7.840706	0.670586908	0.0465	0.031182
7.185387	7.839919	0.654532344	0.0385	0.025199
7.257003	7.816014	0.559011132	0.0307	0.017162
7.421178	7.8144	0.393222105	0.0229	0.009005
7.513164	7.811973	0.298809884	0.0153	0.004572
7.538495	7.791523	0.25302782	0.0076	0.001923
7.778211	7.778211	0	0	0
7.791523	7.538495	-0.25302782		
7.811973	7.513164	-0.298809884		
7.8144	7.421178	-0.393222105		
7.816014	7.257003	-0.559011132		
7.839919	7.185387	-0.654532344		
7.840706	7.17012	-0.670586908		
7.840706	7.138867	-0.701839452		
7.846199	7.108244	-0.737954676		
7.847763	7.056175	-0.791587253		
7.855545	6.990257	-0.865288177		
7.867106	6.98749	-0.879615253		
7.874739	6.976348	-0.898391055		
7.878534	6.966024	-0.912510009		
7.882315	6.946976	-0.935338927		
7.889834	6.904751	-0.985082981		
7.889834	6.802395	-1.087438988		
7.897296	6.063785	-1.833511264		
7.897296	5.97381	-1.923486861		
7.904704	5.932245	-1.972458726		
7.909489	5.891644	-2.017845281		
7.913521	5.886104	-2.027416986		
7.919356	5.802118	-2.117237815		
7.982758	5.762051	-2.220706319		

4.215006 =sum of B
0.702229 = standard deviation
46 = count - 1

0.783215 = W statistic
0.946 is acceptable low value
Fails Shapiro-Wilk test

Table D-35. TDS Far Upgradient Background Data Set, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
318	5.76	1	0.01464	-2.1797	-693.149	4.75115	-12.559619
331	5.80	2	0.03552	-1.8052	-597.519	3.25872	-10.47394
360	5.89	3	0.05663	-1.5837	-570.12	2.508	-9.3216272
362	5.89	4	0.07775	-1.4204	-514.181	2.01751	-8.3684308
377	5.93	5	0.09886	-1.2881	-485.605	1.65914	-7.6411851
393	5.97	6	0.11997	-1.1751	-461.824	1.38092	-7.019967
430	6.06	7	0.14109	-1.0755	-462.447	1.15661	-6.5213404
900	6.80	8	0.16220	-0.9855	-886.918	0.97114	-6.7035206
997	6.90	9	0.18331	-0.9028	-900.113	0.81509	-6.233756
1040	6.95	10	0.20442	-0.8259	-858.963	0.68215	-5.7376866
1060	6.97	11	0.22554	-0.7536	-798.848	0.56796	-5.2498051
1071	6.98	12	0.24665	-0.6851	-733.715	0.46933	-4.7793189
1083	6.99	13	0.26776	-0.6196	-671.024	0.3839	-4.3294337
1086	6.99	14	0.28887	-0.5567	-604.553	0.30989	-3.8913288
1160	7.06	15	0.30999	-0.4959	-575.232	0.24591	-3.4990831
1222	7.11	16	0.33110	-0.4369	-533.868	0.19086	-3.105452
1260	7.14	17	0.35221	-0.3794	-477.99	0.14391	-2.7081796
1300	7.17	18	0.37332	-0.3231	-419.98	0.10437	-2.3163904
1320	7.19	19	0.39444	-0.2678	-353.461	0.0717	-1.9240557
1418	7.26	20	0.41555	-0.2133	-302.449	0.04549	-1.5478637
1671	7.42	21	0.43666	-0.1594	-266.421	0.02542	-1.1832165
1832	7.51	22	0.45777	-0.1060	-194.268	0.01124	-0.7967064
1879	7.54	23	0.47889	-0.0529	-99.486	0.0028	-0.3991349
2388	7.78	24	0.50000	0.0000	0	0	0
2420	7.79	25	0.52111	0.0529	128.13	0.0028	0.4125318
2470	7.81	26	0.54223	0.1060	261.922	0.01124	0.8283926
2476	7.81	27	0.56334	0.1594	394.768	0.02542	1.2459109
2480	7.82	28	0.58445	0.2133	528.965	0.04549	1.6670965
2540	7.84	29	0.60556	0.2678	680.145	0.0717	2.0993221
2542	7.84	30	0.62668	0.3231	821.223	0.10437	2.5330313
2542	7.84	31	0.64779	0.3794	964.326	0.14391	2.9744274
2556	7.85	32	0.66890	0.4369	1116.67	0.19086	3.4278499
2560	7.85	33	0.69001	0.4959	1269.48	0.24591	3.8916229
2580	7.86	34	0.71113	0.5567	1436.23	0.30989	4.3730165
2610	7.87	35	0.73224	0.6196	1617.15	0.3839	4.8744414
2630	7.87	36	0.75335	0.6851	1801.75	0.46933	5.3947838
2640	7.88	37	0.77446	0.7536	1989.58	0.56796	5.9375001
2650	7.88	38	0.79558	0.8259	2188.7	0.68215	6.5102071
2670	7.89	39	0.81669	0.9028	2410.53	0.81509	7.1231098
2670	7.89	40	0.83780	0.9855	2631.19	0.97114	7.7751534
2690	7.90	41	0.85891	1.0755	2892.98	1.15661	8.4932029
2690	7.90	42	0.88003	1.1751	3161.08	1.38092	9.2803026
2710	7.90	43	0.90114	1.2881	3490.69	1.65914	10.181863
2723	7.91	44	0.92225	1.4204	3867.72	2.01751	11.234557
2734	7.91	45	0.94337	1.5837	4329.74	2.508	12.53238
2750	7.92	46	0.96448	1.8052	4964.28	3.25872	14.295961
2930	7.98	47	0.98536	2.1797	6386.56	4.75115	17.400122

Normal

36871.683	=sum X(i)*M(i)
43.546	=sum M(i)^2
888.18	= standard deviation
6.5990	= square root of sum Mi^2
0.928	= Filliben's Statistic

Lognormal

28.176	=sum X(i)*M(i)
43.546	=sum M(i)^2
0.70	= standard deviation
6.5990	= square root of sum Mi^2
0.896	= Filliben's Statistic

.975 is acceptable value

Normal - Fail
Lognormal - Fail

Table D-36. TDS Far Upgradient Background Data Set, Distribution Summary

Parameter	Distribution Type (tested)	Coefficient of Variation	Studentized Range Test	Coefficient of Skewness (-1 to 1)	Shapiro-Wilk Test	Filliben's Statistic	Histogram	Probability Plot	Number of Samples	Distribution Type (determined)
TDS	Normal	Pass	Fail	Pass	Fail	Fail	?	?	47	Nonparametric
TDS	Lognormal	Pass	NA	Fail	Fail	Fail	?	?	47	

NA - not applicable
? - Results of graphical test were inconclusive.

Table D-37. T_n Statistic Analysis for TDS Far Upgradient Background Data Set

Parameter	Distribution	Maximum Observation	Mean	Standard Deviation	T_n Statistic	N	Upper 5% Critical Value	Pass or Fail T_n Statistic
TDS	Normal	2930	1819.60	888.18	1.250	47	2.931	Pass

N - number of samples

Table D-38. 95th Percentile for Far Upgradient TDS Background Data Set

Parameter	Distribution	Censored?	95th Percentile (mg/L)	Sample #
TDS	Nonparametric	No	2730.70	47

Table D-39. Summary Table for Far Upgradient TDS Background Data Set

Parameter	Distribution	Mean	SD	95th Percentile (mg/L)	Range (normal)	Sample #
TDS	Nonparametric	1819.60	888.18	2730.70	2930 to 318	47

SD = standard deviation

Table D-40. TDS Upgradient Background Data, Comparison Statistics Results

Comparison of Medians

Median of Sample 1: 2388.0
Median of Sample 2: 1840.0

Mann-Whitney (Wilcoxon) W test to compare medians

Null hypothesis: median1 = median2
Alt. Hhpothesis: median1 NE median2

Average rank of sample 1: 184.298
Average rank of sample 2: 190.239

w = 8023.0 P-value = 0.72776

The StatAdvisor

This option runs the Mann-Whitney W test to compare the medians of the two samples. This test is constructed by combining the two samples, sorting the data from the smallest to the largest, and comparing the average ranks of the two samples in the combined data. Since the P-value greater than or equal to 0.05, there is not a statistically significant difference between the medians at the 95.0% confidence level.

Table D-41. TDS Combined Background Groundwater Data Set Used in Statistical Analysis
(all concentrations in mg/L)

Well ID														
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R	Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
4250	1430	1890	2210	2130	1900	1610	2360	2110	1418	393	2930	2640	1222	1879
3330	1320	1870	2191.5	2114.5			2264	2050	1320	377	2750	2580	1083	1832
3280	1160	1860	2191	2110			2253	2050	1300	362	2734	2560	1071	1671
3240	1150	1805	2150	2110			2250	2029	1260	360	2723	2542	1060	
3230	1090	1790	2140	2106			2241	1970	1160	331	2710	2542	1040	
3200	1070	1790	2130	2105			2170	1943	1086	318	2690	2388	997	
3190	1060	1770	2130	2101			2150	1886	430		2690		900	
3161	1057	1760	2120	2092			2146	1867.5			2670			
3160	1053	1740	2113.5	2090			2140	1817			2670			
3130	1040	1735	2110	2089			2130	1797			2650			
3128	976	1729	2104	2083			2120	1776			2630			
3115	957	1720	2100	2082.5			2118	1770			2610			
3110	954	1720	2100	2080			2114	1760			2556			
3110		1720	2090	2080			2101	1735			2540			
3109		1710	2090	2070			2097	1700			2480			
3070		1710	2089.5	2070			2090	1682.5			2476			
3060		1710	2083	2070			2090	1650			2470			
3060		1707	2075.5	2065			2090	1601			2420			
3054		1704	2072	2060			2086	1600						
3052.5		1700.5	2063	2050			2070	1595						
3050		1700	2062	2050			2068	1565						
3050		1700	2058	2027			2060	1560						
3040		1700	2040	2010.5			2060	1500						
3020		1700	2030	2006			2060	1490						
3020		1700	2023	2003.5			2055	1490						
3010		1686	2006	2000			2050	1480						
3010		1682.5	2000	2000			2048	1440						
3000		1681					2040	1420						
3000		1680					2030	1410						
3000		1680					2020	1410						
2970		1680					2016	1400						
2960		1680					2015	1390						
2950		1675					2010	1390						

Table D-41. TDS Combined Background Groundwater Data Set Used in Statistical Analysis
(all concentrations in mg/L) (continued)

Well ID														
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R	Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
2950		1670					2010	1375						
2930		1670					2000	1350						
2930		1669					2000	1350						
2910		1665					2000	1340						
2870		1662.5					2000	1333						
2830		1660					1975	1330						
2810		1660					1970	1325						
2770		1660					1970	1325						
2710		1655					1970	1320						
2696		1655					1960	1320						
2670		1650					1960	1320						
2640		1650					1960	1320						
2580		1640					1957.5	1315						
2560		1639.5					1940	1315						
2430		1628					1930	1310						
2400		1620					1915	1310						
		1620					1870	1300						
		1620					1840	1292.5						
		1619.5					1820	1291						
		1610					1810	1270						
		1610					1810	1270						
		1590					1800	1269						
		1590					1780	1262						
		1582					1770	1261.5						
		1580					1730	1260						
		1580					1720	1242						
		1580					1630	1229						
		1580					1570	1220						
		1570					1430	1220						
		1570					1370	1210						
		1565					1280	1190						
		1560												
		1560												

Table D-41. TDS Combined Background Groundwater Data Set Used in Statistical Analysis
(all concentrations in mg/L) (continued)

Well ID														
Well DD	Well ND	Well P	Well P1	Well P2	Well P3	Well P4	Well Q	Well R	Well 914	Well 916	Well 920	Well 921	Well 922	Well 950
		1545												
		1536.5												
		1530												
		1506												
		1504												
		1500												
		1470												
		1465												
		1461												
		1460												
		1450												
		1450												
		1440												
		1420												
		1410												
		1310												
		1310												
		1220												
		1210												

Table D-42. TDS Combined Background Data Set, A Priori Screening

Parameter	Maximum Value	Next Maximum Value	Multiplicative Factor	Results
TDS	4250	3330	1.3	**Pass**

Table D-43. TDS Combined Background Data Set, Coefficient of Variation Analysis

Parameter	Mean	Standard Deviation	Coefficient of Variation	Results
TDS, normal	1910.16	599.35	0.31	**Pass**
TDS, lognormal	7.50	0.36	0.05	**Pass**

Table D-44. TDS Combined Background Data Set, Studentized Range Test Analysis

Parameter	Range		Standard Deviation	Critical Values		W/S	Results
	Maximum	Minimum		Maximum	Minimum		
TDS, normal	4250	318	599.35	6.94	5.47	6.56	**Pass**

W = range of values
S = standard deviation

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analy

TDS	Normal (xi-avg)^3
318	-4036113934
331	-3938054499
360	-3725057308
362	-3710657851
377	-3603842954
393	-3492187916
430	-3242869935
900	-1030803035
954	-874172608
957	-865970150
976	-815209834
997	-761458740
1040	-658875513
1040	-658875513
1053	-629784258
1057	-621008576
1060	-614480584
1060	-614480584
1070	-593051268
1071	-590936161
1083	-565945886
1086	-559810390
1090	-551698930
1150	-439260277
1160	-422151846
1160	-422151846
1190	-373503144
1210	-343241168
1210	-343241168
1220	-328743327
1220	-328743327
1220	-328743327
1222	-325893643
1229	-316049496
1242	-298297256
1260	-274832949
1260	-274832949
1261.5	-272935125
1262	-272304464
1269	-263576952
1270	-262345601
1270	-262345601
1280	-250242351
1291	-237365249
1292.5	-235644286
1300	-227164146
1300	-227164146

Normal	
standard deviation =	599.3546282
mean =	1910.164
count =	378
sum of (xi-avg)^3 =	33550796753
1/n =	0.002645503
standard deviation cubed =	215303747.9
((n-1)/n)^(3/2) =	0.996034372
coef. of skewness =	0.4
acceptable range -1 to 1	**Pass**

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
1315	-210819126
1315	-210819126
1320	-205550335
1320	-205550335
1320	-205550335
1320	-205550335
1320	-205550335
1320	-205550335
1325	-200370069
1325	-200370069
1330	-195277577
1333	-192263902
1340	-185352917
1350	-175770356
1350	-175770356
1370	-157607529
1375	-153271259
1390	-140741096
1390	-140741096
1400	-132779027
1410	-125123056
1410	-125123056
1410	-125123056
1418	-119214639
1420	-117767184
1420	-117767184
1430	-110705410
1430	-110705410
1440	-103931735
1440	-103931735
1450	-97440157.8
1450	-97440157.8
1460	-91224679.2
1461	-90618085.7
1465	-88218601.8
1470	-85279299
1480	-79598017.2
1490	-74174833.9
1490	-74174833.9
1500	-69003749
1500	-69003749
1504	-67004558.5
1506	-66019609.2
1530	-54943084.6
1536.5	-52172764.5
1545	-48692709.6
1560	-42935306
1560	-42935306
1560	-42935306
1565	-41122220.7
1565	-41122220.7

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
1570	-39360910
1570	-39360910
1570	-39360910
1580	-35990612.4
1580	-35990612.4
1580	-35990612.4
1580	-35990612.4
1582	-35340516.6
1590	-32818413.1
1590	-32818413.1
1595	-31304725.4
1600	-29838312.3
1601	-29550636.7
1610	-27044309.9
1610	-27044309.9
1610	-27044309.9
1619.5	-24556916.4
1620	-24430405.9
1620	-24430405.9
1620	-24430405.9
1628	-22464921.6
1630	-21990600.4
1639.5	-19828578.9
1640	-19718893.2
1650	-17609284.5
1650	-17609284.5
1650	-17609284.5
1655	-16613392
1655	-16613392
1660	-15655774.1
1660	-15655774.1
1660	-15655774.1
1662.5	-15191083.8
1665	-14735680.9
1669	-14026120
1670	-13852362.2
1670	-13852362.2
1671	-13680045.5
1675	-13005068.2
1680	-12193048.7
1680	-12193048.7
1680	-12193048.7
1680	-12193048.7
1681	-12034811.8
1682.5	-11800032.6
1682.5	-11800032.6
1686	-11264131.9
1700	-9282716.95
1700	-9282716.95
1700	-9282716.95
1700	-9282716.95

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
1700	-9282716.95
1700	-9282716.95
1700.5	-9216621.08
1704	-8762713.84
1707	-8385720.83
1710	-8019698.69
1710	-8019698.69
1710	-8019698.69
1720	-6876778.83
1720	-6876778.83
1720	-6876778.83
1720	-6876778.83
1729	-5945876.1
1730	-5847957.39
1735	-5374458.57
1735	-5374458.57
1740	-4927234.36
1760	-3386083.54
1760	-3386083.54
1770	-2753655.75
1770	-2753655.75
1770	-2753655.75
1776	-2414950.31
1780	-2205326.37
1790	-1735095.4
1790	-1735095.4
1797	-1449189.28
1800	-1336962.85
1805	-1163058.48
1810	-1004928.71
1810	-1004928.71
1817	-808620.367
1820	-732992.982
1832	-477552.014
1840	-345416.765
1860	-126234.199
1867.5	-77657.8492
1870	-64790.5344
1870	-64790.5344
1879	-30266.3794
1886	-14109.37
1890	-8198.44399
1900	-1050.01785
1915	113.0975442
1930	7804.784367
1940	26559.55971
1943	35403.80184
1957.5	106065.486
1960	123773.8723
1960	123773.8723
1960	123773.8723

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
1970	214233.4095
1970	214233.4095
1970	214233.4095
1970	214233.4095
1975	272551.2734
2000	725021.5451
2000	725021.5451
2000	725021.5451
2000	725021.5451
2000	725021.5451
2000	725021.5451
2000	725021.5451
2003.5	813106.1748
2006	880208.8865
2006	880208.8865
2010	995087.4315
2010	995087.4315
2010.5	1010113.268
2015	1152208.47
2016	1185495.725
2020	1325054.905
2023	1436622.957
2027	1594886.581
2029	1678200.489
2030	1720923.966
2030	1720923.966
2040	2188694.615
2040	2188694.615
2048	2618712.276
2050	2734366.85
2050	2734366.85
2050	2734366.85
2050	2734366.85
2050	2734366.85
2055	3038291.063
2058	3231025.782
2060	3363940.673
2060	3363940.673
2060	3363940.673
2060	3363940.673
2062	3500451.628
2063	3570070.63
2065	3712065.68
2068	3932040.875
2070	4083416.084
2070	4083416.084
2070	4083416.084
2070	4083416.084
2072	4238627.356
2075.5	4519621.986
2080	4898793.081

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
2080	4898793.081
2082.5	5118325.079
2083	5163003.99
2083	5163003.99
2086	5436548.042
2089	5719587.236
2089.5	5767694.949
2090	5816071.666
2090	5816071.666
2090	5816071.666
2090	5816071.666
2090	5816071.666
2090	5816071.666
2092	6012283.573
2097	6522011.12
2100	6841251.838
2100	6841251.838
2101	6949935.443
2101	6949935.443
2104	7282880.352
2105	7396180.02
2106	7510648.703
2110	7980333.598
2110	7980333.598
2110	7980333.598
2110	7980333.598
2113.5	8407031.838
2114	8469202.746
2114.5	8531679.407
2118	8977640.148
2120	9239316.944
2120	9239316.944
2130	10624201.88
2130	10624201.88
2130	10624201.88
2130	10624201.88
2140	12140988.4
2140	12140988.4
2146	13116869.07
2150	13795676.51
2150	13795676.51
2170	17542757.49
2191	22149209.85
2191.5	22267723.87
2210	26955738.49
2241	36210806.74
2250	39247144.9
2253	40295743.9
2264	44300229.14
2360	91025393.46
2388	109102961.9

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
2400	117530895.1
2420	132523055.4
2430	140474988
2470	175461734.1
2476	181163906.2
2480	185033174.6
2540	249851750.8
2542	252239477
2542	252239477
2556	269380842.2
2560	274417155.6
2560	274417155.6
2580	300542166.8
2580	300542166.8
2610	342758945.4
2630	372992972.4
2640	388754838.3
2640	388754838.3
2650	404954605.8
2670	438691845.5
2670	438691845.5
2670	438691845.5
2690	474252691.5
2690	474252691.5
2696	485283724.6
2710	511685143.9
2710	511685143.9
2723	537042623.9
2734	559142191.2
2750	592356867.8
2770	635692139.2
2810	728601501.2
2830	778271591.7
2870	884282591.8
2910	999508017.2
2930	1060696139
2930	1060696139
2930	1060696139
2950	1124331868
2950	1124331868
2960	1157082585
2970	1190463203
3000	1294444467
3000	1294444467
3000	1294444467
3010	1330404692
3010	1330404692
3020	1367024818
3020	1367024818
3040	1442268775
3050	1480904606

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
3050	1480904606
3052.5	1490670189
3054	1496550095
3060	1520224339
3060	1520224339
3070	1560233973
3109	1722976305
3110	1727291525
3110	1727291525
3115	1748975734
3128	1806202342
3130	1815115711
3160	1952356252
3161	1957046272
3190	2096345906
3200	2145870261
3230	2299110735
3240	2351766696
3280	2570429557
3330	2862295918
4250	12810209846

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi (continued.)

TDS	Lognormal (xi-avg)^3
5.762051	-5.23898413
5.802118	-4.88470254
5.886104	-4.19465728
5.891644	-4.15157652
5.932245	-3.844828
5.97381	-3.54684772
6.063785	-2.95537736
6.802395	-0.337813
6.860664	-0.25991954
6.863803	-0.25610215
6.883463	-0.23304626
6.904751	-0.20968779
6.946976	-0.16807987
6.946976	-0.16807987
6.959399	-0.15698312
6.96319	-0.15369631
6.966024	-0.15126954
6.966024	-0.15126954
6.975414	-0.14341236
6.976348	-0.14264591
6.98749	-0.13371348
6.990257	-0.13155518
6.993933	-0.12872282
7.047517	-0.091936
7.056175	-0.08674591
7.056175	-0.08674591
7.081709	-0.0725846
7.098376	-0.06422712
7.098376	-0.06422712
7.106606	-0.06034797
7.106606	-0.06034797
7.106606	-0.06034797
7.108244	-0.05959508
7.113956	-0.05701868
7.124478	-0.05246904
7.138867	-0.04664871
7.138867	-0.04664871
7.140057	-0.0461877
7.140453	-0.04603483
7.145984	-0.04393608
7.146772	-0.04364249
7.146772	-0.04364249
7.154615	-0.04079032
7.163172	-0.03782338
7.164334	-0.03743221
7.17012	-0.03552327
7.17012	-0.03552327
7.177782	-0.03309652
7.177782	-0.03309652
7.177782	-0.03309652
7.177782	-0.03309652

Lognormal	
standard deviation =	0.359394606
mean =	7.499
count =	378
sum of (xi-avg)^3 =	-25.67041569
1/n =	0.002645503
standard deviation cubed =	0.046421018
((n-1)/n)^(3/2) =	0.996034372
coef. of skewness =	-1.5
acceptable range -1 to 1	Fail

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
7.17012	-0.03552327
7.177782	-0.03309652
7.177782	-0.03309652
7.177782	-0.03309652
7.177782	-0.03309652
7.181592	-0.03193234
7.181592	-0.03193234
7.185387	-0.03080006
7.185387	-0.03080006
7.185387	-0.03080006
7.185387	-0.03080006
7.185387	-0.03080006
7.185387	-0.03080006
7.189168	-0.02969899
7.189168	-0.02969899
7.192934	-0.02862847
7.195187	-0.02800056
7.200425	-0.02657654
7.20786	-0.02463922
7.20786	-0.02463922
7.222566	-0.02108914
7.226209	-0.02026586
7.237059	-0.01794136
7.237059	-0.01794136
7.244228	-0.0165075
7.251345	-0.01516152
7.251345	-0.01516152
7.251345	-0.01516152
7.257003	-0.01414537
7.258412	-0.0138995
7.258412	-0.0138995
7.26543	-0.01271762
7.26543	-0.01271762
7.272398	-0.01161224
7.272398	-0.01161224
7.279319	-0.01057982
7.279319	-0.01057982
7.286192	-0.00961692
7.286876	-0.00952433
7.289611	-0.00916052
7.293018	-0.00872026
7.299797	-0.00788665
7.306531	-0.00711299
7.306531	-0.00711299
7.31322	-0.00639631
7.31322	-0.00639631
7.315884	-0.00612495
7.317212	-0.00599245
7.333023	-0.00455986
7.337262	-0.00421901
7.342779	-0.00380146

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
7.352441	-0.00313825
7.352441	-0.00313825
7.352441	-0.00313825
7.355641	-0.00293693
7.355641	-0.00293693
7.358831	-0.00274502
7.358831	-0.00274502
7.358831	-0.00274502
7.36518	-0.00238827
7.36518	-0.00238827
7.36518	-0.00238827
7.36518	-0.00238827
7.366445	-0.0023211
7.371489	-0.0020658
7.371489	-0.0020658
7.374629	-0.00191675
7.377759	-0.00177549
7.378384	-0.00174815
7.383989	-0.00151528
7.383989	-0.00151528
7.383989	-0.00151528
7.389873	-0.00129416
7.390181	-0.00128319
7.390181	-0.00128319
7.390181	-0.00128319
7.395108	-0.00111647
7.396335	-0.0010773
7.402147	-0.00090428
7.402452	-0.00089575
7.408531	-0.00073675
7.408531	-0.00073675
7.408531	-0.00073675
7.411556	-0.00066515
7.411556	-0.00066515
7.414573	-0.00059855
7.414573	-0.00059855
7.414573	-0.00059855
7.416078	-0.00056706
7.41758	-0.00053673
7.41998	-0.00049058
7.420579	-0.00047949
7.420579	-0.00047949
7.421178	-0.00046857
7.423568	-0.00042661
7.426549	-0.00037792
7.426549	-0.00037792
7.426549	-0.00037792
7.426549	-0.00037792
7.427144	-0.00036867
7.428036	-0.00035508
7.428036	-0.00035508

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
7.430114	-0.00032473
7.438384	-0.00022106
7.438384	-0.00022106
7.438384	-0.00022106
7.438384	-0.00022106
7.438384	-0.00022106
7.438384	-0.00022106
7.438678	-0.00021785
7.440734	-0.00019627
7.442493	-0.00017898
7.444249	-0.00016277
7.444249	-0.00016277
7.444249	-0.00016277
7.45008	-0.00011599
7.45008	-0.00011599
7.45008	-0.00011599
7.45008	-0.00011599
7.455298	-8.2596E-05
7.455877	-7.9349E-05
7.458763	-6.4412E-05
7.458763	-6.4412E-05
7.46164	-5.1511E-05
7.473069	-1.7132E-05
7.473069	-1.7132E-05
7.478735	-8.1369E-06
7.478735	-8.1369E-06
7.478735	-8.1369E-06
7.482119	-4.682E-06
7.484369	-3.0358E-06
7.489971	-6.996E-07
7.489971	-6.996E-07
7.493874	-1.2309E-07
7.495542	-3.6144E-08
7.498316	-1.5089E-10
7.501082	1.11474E-08
7.501082	1.11474E-08
7.504942	2.26291E-07
7.506592	4.64319E-07
7.513164	2.9336E-06
7.517521	6.5105E-06
7.528332	2.56294E-05
7.532356	3.76212E-05
7.533694	4.23096E-05
7.533694	4.23096E-05
7.538495	6.23193E-05
7.542213	8.15501E-05
7.544332	9.40961E-05
7.549609	0.000130794
7.557473	0.000201484
7.565275	0.000293113
7.570443	0.000366985

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi (continued)

TDS	Normal (xi-avg)^3
7.571988	0.000391263
7.579423	0.000523123
7.5807	0.000548378
7.5807	0.000548378
7.5807	0.000548378
7.585789	0.000657154
7.585789	0.000657154
7.585789	0.000657154
7.585789	0.000657154
7.588324	0.000716327
7.600902	0.001062901
7.600902	0.001062901
7.600902	0.001062901
7.600902	0.001062901
7.600902	0.001062901
7.600902	0.001062901
7.600902	0.001062901
7.602651	0.001118473
7.603898	0.00115927
7.603898	0.00115927
7.60589	0.001226477
7.60589	0.001226477
7.606139	0.001235047
7.608374	0.001313876
7.608871	0.001331812
7.610853	0.001405099
7.612337	0.001461694
7.614312	0.001539354
7.615298	0.001579136
7.615791	0.001599266
7.615791	0.001599266
7.620705	0.001809463
7.620705	0.001809463
7.624619	0.001989476
7.625595	0.002036157
7.625595	0.002036157
7.625595	0.002036157
7.625595	0.002036157
7.625595	0.002036157
7.628031	0.002155832
7.62949	0.002229693
7.630461	0.002279798
7.630461	0.002279798
7.630461	0.002279798
7.630461	0.002279798
7.631432	0.002330599
7.631917	0.002356261
7.632886	0.002408111
7.634337	0.002487207
7.635304	0.002540823
7.635304	0.002540823

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
7.635304	0.002540823
7.635304	0.002540823
7.63627	0.002595151
7.637957	0.002691949
7.640123	0.00281965
7.640123	0.00281965
7.641324	0.002892186
7.641564	0.002906831
7.641564	0.002906831
7.643004	0.00299566
7.644441	0.00308615
7.64468	0.003101394
7.644919	0.003116684
7.644919	0.003116684
7.644919	0.003116684
7.644919	0.003116684
7.644919	0.003116684
7.644919	0.003116684
7.645876	0.003178311
7.648263	0.003335651
7.649693	0.003432316
7.649693	0.003432316
7.650169	0.003464917
7.650169	0.003464917
7.651596	0.003563861
7.652071	0.003597225
7.652546	0.00363078
7.654443	0.003766923
7.654443	0.003766923
7.654443	0.003766923
7.654443	0.003766923
7.656101	0.003888585
7.656337	0.003906159
7.656574	0.003923783
7.658228	0.004048513
7.659171	0.004120865
7.659171	0.004120865
7.663877	0.004494494
7.663877	0.004494494
7.663877	0.004494494
7.663877	0.004494494
7.668561	0.004888147
7.668561	0.004888147
7.671361	0.005134084
7.673223	0.005302146
7.673223	0.005302146
7.682482	0.006192424
7.692113	0.00721872
7.692342	0.007244319
7.700748	0.008230117
7.714677	0.010053811

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
7.718685	0.010624385
7.720018	0.010818743
7.724888	0.011549335
7.766417	0.019156037
7.778211	0.02180257
7.783224	0.022997347
7.791523	0.025070036
7.795647	0.02614473
7.811973	0.030701102
7.8144	0.031420295
7.816014	0.031904958
7.839919	0.039676631
7.840706	0.039951952
7.840706	0.039951952
7.846199	0.041908684
7.847763	0.042477236
7.847763	0.042477236
7.855545	0.045383321
7.855545	0.045383321
7.867106	0.049940618
7.874739	0.053111105
7.878534	0.054736063
7.878534	0.054736063
7.882315	0.056387502
7.889834	0.05976982
7.889834	0.05976982
7.889834	0.05976982
7.897296	0.063258031
7.897296	0.063258031
7.899524	0.064325134
7.904704	0.066852065
7.904704	0.066852065
7.909489	0.069244883
7.913521	0.071304434
7.919356	0.074357126
7.926603	0.07826783
7.94094	0.086404532
7.948032	0.09063002
7.962067	0.09939379
7.975908	0.108572367
7.982758	0.11331628
7.982758	0.11331628
7.982758	0.11331628
7.98956	0.118162741
7.98956	0.118162741
7.992945	0.120624296
7.996317	0.123111327
8.006368	0.130724722
8.006368	0.130724722
8.006368	0.130724722
8.009695	0.133313095

Table D-45. Combined Background TDS Data Set, Coefficient of Skewness Analysi
(continued)

TDS	Normal (xi-avg)^3
8.009695	0.133313095
8.013012	0.135926657
8.013012	0.135926657
8.019613	0.141229109
8.022897	0.143917875
8.022897	0.143917875
8.023716	0.144593966
8.024207	0.145000369
8.02617	0.146631585
8.02617	0.146631585
8.029433	0.149370176
8.042056	0.160287203
8.042378	0.160572055
8.042378	0.160572055
8.043984	0.162000001
8.048149	0.165741327
8.048788	0.166320584
8.058327	0.17512635
8.058644	0.175423639
8.067776	0.18415003
8.070906	0.187206023
8.080237	0.196517304
8.083329	0.199668593
8.095599	0.212509458
8.110728	0.229085366
8.354674	0.626839626

Table D-46. TDS Combined Background Data Set, Shapiro-Francia Test of Normality Analysis

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
318	1	0.002639	-2.7896	-887.0934835	7.78188
331	2	0.005277	-2.55714	-846.4117855	6.538941
360	3	0.007916	-2.41278	-868.6009096	5.821509
362	4	0.010554	-2.30604	-834.7872063	5.31783
377	5	0.013193	-2.22049	-837.1265903	4.930598
393	6	0.015831	-2.14864	-844.4174273	4.616675
430	7	0.01847	-2.08644	-897.1672287	4.353213
900	8	0.021108	-2.03137	-1828.237146	4.126483
954	9	0.023747	-1.98187	-1890.704752	3.927812
957	10	0.026385	-1.9368	-1853.514013	3.75118
976	11	0.029024	-1.89534	-1849.853288	3.592319
997	12	0.031662	-1.85691	-1851.335519	3.448101
1040	13	0.034301	-1.82104	-1893.877197	3.316171
1040	14	0.036939	-1.78737	-1858.860924	3.194678
1053	15	0.039578	-1.75561	-1848.653874	3.082155
1057	16	0.042216	-1.72553	-1823.880116	2.977437
1060	17	0.044855	-1.69693	-1798.746507	2.879574
1060	18	0.047493	-1.66966	-1769.839037	2.787763
1070	19	0.050132	-1.64358	-1758.625422	2.701339
1071	20	0.05277	-1.61856	-1733.482104	2.61975
1083	21	0.055409	-1.59453	-1726.871778	2.542514
1086	22	0.058047	-1.57138	-1706.518105	2.469233
1090	23	0.060686	-1.54904	-1688.456086	2.399532
1150	24	0.063325	-1.52745	-1756.568508	2.333106
1160	25	0.065963	-1.50655	-1747.598799	2.269695
1160	26	0.068602	-1.48629	-1724.09309	2.209049
1190	27	0.07124	-1.46662	-1745.276995	2.150972
1210	28	0.073879	-1.4475	-1751.471609	2.095248
1210	29	0.076517	-1.4289	-1728.963866	2.041743
1220	30	0.079156	-1.41077	-1721.144372	1.990283
1220	31	0.081794	-1.3931	-1699.587938	1.940741

TDS - normal
48019754629 = (sum of Mi*Xi)^2
377 = count -1
359225.9704 = standard deviation ^2
367.8442618 = sum of Mi^2

0.96 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1220	32	0.084433	-1.37586	-1678.54746	1.892987
1222	33	0.087071	-1.35901	-1660.713224	1.846915
1229	34	0.08971	-1.34255	-1649.989103	1.80243
1242	35	0.092348	-1.32643	-1647.431473	1.759428
1260	36	0.094987	-1.31066	-1651.430557	1.717827
1260	37	0.097625	-1.2952	-1631.95491	1.677549
1261.5	38	0.100264	-1.28005	-1614.783237	1.638528
1262	39	0.102902	-1.26519	-1596.665629	1.600697
1269	40	0.105541	-1.2506	-1587.006504	1.563991
1270	41	0.108179	-1.23627	-1570.062045	1.528362
1270	42	0.110818	-1.22219	-1552.181743	1.493749
1280	43	0.113456	-1.20835	-1546.688145	1.46011
1291	44	0.116095	-1.19474	-1542.405791	1.427397
1292.5	45	0.118734	-1.18134	-1526.885399	1.39557
1300	46	0.121372	-1.16815	-1518.601493	1.364586
1300	47	0.124011	-1.15517	-1501.72059	1.334417
1310	48	0.126649	-1.14238	-1496.511732	1.305021
1310	49	0.129288	-1.12977	-1479.992443	1.276369
1310	50	0.131926	-1.11733	-1463.705485	1.248432
1310	51	0.134565	-1.10507	-1447.641921	1.22118
1315	52	0.137203	-1.09297	-1437.257674	1.194587
1315	53	0.139842	-1.08103	-1421.554384	1.168626
1320	54	0.14248	-1.06924	-1411.400626	1.14328
1320	55	0.145119	-1.0576	-1396.033804	1.118521
1320	56	0.147757	-1.0461	-1380.853064	1.094327
1320	57	0.150396	-1.03474	-1365.852404	1.07068
1320	58	0.153034	-1.02351	-1351.028823	1.047566
1320	59	0.155673	-1.0124	-1336.370315	1.024957
1325	60	0.158311	-1.00142	-1326.883989	1.002846
1325	61	0.16095	-0.99056	-1312.495328	0.981214
1330	62	0.163588	-0.97982	-1303.156387	0.960041
1333	63	0.166227	-0.96918	-1291.92036	0.939315
1340	64	0.168865	-0.95866	-1284.600967	0.919024
1350	65	0.171504	-0.94824	-1280.122888	0.899158
1350	66	0.174142	-0.93792	-1266.193294	0.879696
1370	67	0.176781	-0.9277	-1270.952816	0.860632
1375	68	0.17942	-0.91758	-1261.672651	0.841953
1390	69	0.182058	-0.90755	-1261.495413	0.823648
1390	70	0.184697	-0.89761	-1247.677733	0.805703
1400	71	0.187335	-0.88776	-1242.864073	0.788118
1410	72	0.189974	-0.87799	-1237.972037	0.770874
1410	73	0.192612	-0.86831	-1224.317816	0.753963
1410	74	0.195251	-0.85871	-1210.77901	0.73738
1418	75	0.197889	-0.84918	-1204.142677	0.721113
1420	76	0.200528	-0.83974	-1192.427385	0.705159
1420	77	0.203166	-0.83036	-1179.117044	0.689505
1430	78	0.205805	-0.82106	-1174.122281	0.674147
1430	79	0.208443	-0.81183	-1160.923046	0.659075
1440	80	0.211082	-0.80267	-1155.848076	0.644283
1440	81	0.21372	-0.79358	-1142.754627	0.629769
1450	82	0.216359	-0.78455	-1137.596712	0.615518
1450	83	0.218997	-0.77558	-1124.595315	0.601529

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1460	84	0.221636	-0.76668	-1119.351373	0.587797
1461	85	0.224274	-0.75784	-1107.199068	0.574316
1465	86	0.226913	-0.74905	-1097.361002	0.561079
1470	87	0.229551	-0.74032	-1088.276485	0.54808
1480	88	0.23219	-0.73165	-1082.848485	0.535318
1490	89	0.234828	-0.72304	-1077.32501	0.522782
1490	90	0.237467	-0.71447	-1064.5663	0.510473
1500	91	0.240106	-0.70596	-1058.945145	0.498384
1500	92	0.242744	-0.6975	-1046.254283	0.48651
1504	93	0.245383	-0.68909	-1036.394824	0.474848
1506	94	0.248021	-0.68073	-1025.178626	0.463393
1530	95	0.25066	-0.67241	-1028.7941	0.452141
1536.5	96	0.253298	-0.66415	-1020.462076	0.441091
1545	97	0.255937	-0.65592	-1013.401084	0.430235
1560	98	0.258575	-0.64774	-1010.481265	0.419573
1560	99	0.261214	-0.63961	-997.78822	0.409098
1560	100	0.263852	-0.63151	-985.1625691	0.398811
1565	101	0.266491	-0.62346	-975.7162957	0.388703
1565	102	0.269129	-0.61545	-963.176501	0.378777
1570	103	0.271768	-0.60747	-953.7345704	0.369025
1570	104	0.274406	-0.59954	-941.2778695	0.359448
1570	105	0.277045	-0.59164	-928.8782849	0.350041
1580	106	0.279683	-0.58378	-922.3754205	0.340801
1580	107	0.282322	-0.57596	-910.013614	0.331728
1580	108	0.28496	-0.56817	-897.705695	0.322815
1580	109	0.287599	-0.56041	-885.4516636	0.314062
1582	110	0.290237	-0.55269	-874.3569015	0.305467
1590	111	0.292876	-0.545	-866.5534892	0.297027
1590	112	0.295515	-0.53735	-854.3791637	0.28874
1595	113	0.298153	-0.52972	-844.9022403	0.280603
1600	114	0.300792	-0.52212	-835.3999874	0.272615
1601	115	0.30343	-0.51456	-823.8109922	0.264772
1610	116	0.306069	-0.50703	-816.3104212	0.257074
1610	117	0.308707	-0.49952	-804.2245668	0.249519
1610	118	0.311346	-0.49204	-792.1826409	0.242102
1619.5	119	0.313984	-0.48459	-784.7900588	0.234825
1620	120	0.316623	-0.47716	-773.0058769	0.227686
1620	121	0.319261	-0.46977	-761.0199191	0.22068
1620	122	0.3219	-0.46239	-749.0781627	0.213808
1628	123	0.324538	-0.45505	-740.8136025	0.207066
1630	124	0.327177	-0.44772	-729.7879051	0.200456
1639.5	125	0.329815	-0.44042	-722.0731959	0.193972
1640	126	0.332454	-0.43315	-710.3608368	0.187616
1650	127	0.335092	-0.42589	-702.7263678	0.181386
1650	128	0.337731	-0.41866	-690.796071	0.17528
1650	129	0.340369	-0.41146	-678.9014151	0.169296
1655	130	0.343008	-0.40427	-669.0637406	0.163433
1655	131	0.345646	-0.3971	-657.2026564	0.157689
1660	132	0.348285	-0.38995	-647.3252142	0.152065
1660	133	0.350923	-0.38283	-635.4962352	0.146558
1660	134	0.353562	-0.37572	-623.6974514	0.141167
1662.5	135	0.356201	-0.36863	-612.8542225	0.135891

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1665	136	0.358839	-0.36156	-602.0039507	0.130728
1669	137	0.361478	-0.35451	-591.6804275	0.125679
1670	138	0.364116	-0.34748	-580.2884857	0.120741
1670	139	0.366755	-0.34046	-568.5705105	0.115914
1671	140	0.369393	-0.33346	-557.2144755	0.111197
1675	141	0.372032	-0.32648	-546.8485824	0.106587
1680	142	0.37467	-0.31951	-536.7768608	0.102087
1680	143	0.377309	-0.31256	-525.0956747	0.097692
1680	144	0.379947	-0.30562	-513.4412277	0.093403
1680	145	0.382586	-0.2987	-501.8096999	0.089219
1681	146	0.385224	-0.29179	-490.4967	0.085141
1682.5	147	0.387863	-0.28489	-479.3333659	0.081164
1682.5	148	0.390501	-0.27801	-467.7553022	0.077291
1686	149	0.39314	-0.27115	-457.1511136	0.07352
1700	150	0.395778	-0.26429	-449.2931112	0.069849
1700	151	0.398417	-0.25745	-437.6603329	0.066279
1700	152	0.401055	-0.25062	-426.0468813	0.062808
1700	153	0.403694	-0.2438	-414.4546892	0.059437
1700	154	0.406332	-0.23699	-402.8818239	0.056164
1700	155	0.408971	-0.23019	-391.3282853	0.052989
1700.5	156	0.411609	-0.22341	-379.9038444	0.049911
1704	157	0.414248	-0.21663	-369.1379789	0.046929
1707	158	0.416887	-0.20986	-358.2391548	0.044043
1710	159	0.419525	-0.20311	-347.3152901	0.041253
1710	160	0.422164	-0.19636	-335.7793275	0.038558
1710	161	0.424802	-0.18962	-324.2550292	0.035957
1720	162	0.427441	-0.18289	-314.5771643	0.03345
1720	163	0.430079	-0.17617	-303.0167591	0.031037
1720	164	0.432718	-0.16946	-291.4700417	0.028716
1720	165	0.435356	-0.16275	-279.9370122	0.026489
1729	166	0.437995	-0.15606	-269.8202161	0.024353
1730	167	0.440633	-0.14936	-258.3997912	0.02231
1735	168	0.443272	-0.14268	-247.5485076	0.020357
1735	169	0.44591	-0.136	-235.9622385	0.018496
1740	170	0.448549	-0.12933	-225.0304988	0.016726
1760	171	0.451187	-0.12266	-215.883847	0.015046
1760	172	0.453826	-0.116	-204.1626431	0.013456
1770	173	0.456464	-0.10935	-193.5408932	0.011956
1770	174	0.459103	-0.10269	-181.7671773	0.010546
1770	175	0.461741	-0.09605	-170.0035227	0.009225
1776	176	0.46438	-0.08941	-158.7843508	0.007993
1780	177	0.467018	-0.08277	-147.323999	0.00685
1790	178	0.469657	-0.07613	-136.2754347	0.005796
1790	179	0.472296	-0.0695	-124.4073474	0.00483
1797	180	0.474934	-0.06287	-112.9814007	0.003953
1800	181	0.477573	-0.05625	-101.2438133	0.003164
1805	182	0.480211	-0.04962	-89.57186992	0.002463
1810	183	0.48285	-0.043	-77.83576166	0.001849
1810	184	0.485488	-0.03638	-65.85564734	0.001324
1817	185	0.488127	-0.02977	-54.08595712	0.000886
1820	186	0.490765	-0.02315	-42.13309239	0.000536
1832	187	0.493404	-0.01653	-30.29141226	0.000273

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1840	188	0.496042	-0.00992	-18.25337677	9.84E-05
1860	189	0.498681	-0.00331	-6.151299203	1.09E-05
1867.5	190	0.501319	0.003307	6.176102829	1.09E-05
1870	191	0.503958	0.00992	18.55098617	9.84E-05
1870	192	0.506596	0.016535	30.91972758	0.000273
1879	193	0.509235	0.02315	43.49894539	0.000536
1886	194	0.511873	0.029767	56.13985422	0.000886
1890	195	0.514512	0.036384	68.76639418	0.001324
1900	196	0.51715	0.043003	81.70604815	0.001849
1915	197	0.519789	0.049624	95.03054343	0.002463
1930	198	0.522427	0.056247	108.5558665	0.003164
1940	199	0.525066	0.062872	121.9721298	0.003953
1943	200	0.527704	0.069501	135.041048	0.00483
1957.5	201	0.530343	0.076132	149.0274656	0.005796
1960	202	0.532982	0.082766	162.2219315	0.00685
1960	203	0.53562	0.089406	175.2349817	0.007993
1960	204	0.538259	0.096047	188.2524884	0.009225
1970	205	0.540897	0.102693	202.3058414	0.010546
1970	206	0.543536	0.109345	215.4099207	0.011956
1970	207	0.546174	0.116002	228.5229584	0.013456
1970	208	0.548813	0.122661	241.6427151	0.015046
1975	209	0.551451	0.129328	255.4225489	0.016726
2000	210	0.55409	0.136001	272.0025805	0.018496
2000	211	0.556728	0.142679	285.3585102	0.020357
2000	212	0.559367	0.149364	298.7280823	0.02231
2000	213	0.562005	0.156056	312.1112968	0.024353
2000	214	0.564644	0.162754	325.5081538	0.026489
2000	215	0.567282	0.169459	338.9186531	0.028716
2000	216	0.569921	0.176173	352.3450687	0.031037
2003.5	217	0.572559	0.182894	366.4275283	0.03345
2006	218	0.575198	0.189623	380.3833852	0.035957
2006	219	0.577836	0.196362	393.9025328	0.038558
2010	220	0.580475	0.203108	408.2477972	0.041253
2010	221	0.583113	0.209865	421.8281788	0.044043
2010.5	222	0.585752	0.21663	435.5351564	0.046929
2015	223	0.588391	0.223407	450.1653905	0.049911
2016	224	0.591029	0.230193	464.0693078	0.052989
2020	225	0.593668	0.236989	478.7184025	0.056164
2023	226	0.596306	0.243797	493.2010802	0.059437
2027	227	0.598945	0.250616	507.998252	0.062808
2029	228	0.601583	0.257447	522.3604796	0.066279
2030	229	0.604222	0.26429	536.5088327	0.069849
2030	230	0.60686	0.271145	550.4251249	0.07352
2040	231	0.609499	0.278012	567.1446161	0.077291
2040	232	0.612137	0.284894	581.1828032	0.081164
2048	233	0.614776	0.291789	597.58313	0.085141
2050	234	0.617414	0.298696	612.3273124	0.089219
2050	235	0.620053	0.30562	626.5205457	0.093403
2050	236	0.622691	0.312557	640.7417459	0.097692
2050	237	0.62533	0.31951	654.9955742	0.102087
2050	238	0.627968	0.326477	669.2773695	0.106587
2055	239	0.630607	0.333462	685.2637625	0.111197

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2058	240	0.633245	0.340461	700.6695273	0.115914
2060	241	0.635884	0.347478	715.8049584	0.120741
2060	242	0.638522	0.354512	730.294596	0.125679
2060	243	0.641161	0.361564	744.8217048	0.130728
2060	244	0.643799	0.368634	759.3862847	0.135891
2062	245	0.646438	0.375721	774.7374366	0.141167
2063	246	0.649077	0.382829	789.7763453	0.146558
2065	247	0.651715	0.389955	805.2569683	0.152065
2068	248	0.654354	0.397101	821.2054945	0.157689
2070	249	0.656992	0.404268	836.8350109	0.163433
2070	250	0.659631	0.411455	851.7126844	0.169296
2070	251	0.662269	0.418664	866.6350709	0.17528
2070	252	0.664908	0.425895	881.6021705	0.181386
2072	253	0.667546	0.433147	897.4802768	0.187616
2075.5	254	0.670185	0.440423	914.0975408	0.193972
2080	255	0.672823	0.447723	931.2630937	0.200456
2080	256	0.675462	0.455045	946.4940376	0.207066
2082.5	257	0.6781	0.462394	962.9353542	0.213808
2083	258	0.680739	0.469765	978.521291	0.22068
2083	259	0.683377	0.477164	993.9328652	0.227686
2086	260	0.686016	0.484588	1010.850301	0.234825
2089	261	0.688654	0.492039	1027.869278	0.242102
2089.5	262	0.691293	0.499518	1043.743623	0.249519
2090	263	0.693931	0.507025	1059.682472	0.257074
2090	264	0.69657	0.51456	1075.430964	0.264772
2090	265	0.699208	0.522125	1091.241234	0.272615
2090	266	0.701847	0.529719	1107.11328	0.280603
2090	267	0.704485	0.537345	1123.051857	0.28874
2090	268	0.707124	0.545002	1139.054586	0.297027
2092	269	0.709763	0.552691	1156.229227	0.305467
2097	270	0.712401	0.560412	1175.184898	0.314062
2100	271	0.71504	0.568168	1193.153139	0.322815
2100	272	0.717678	0.575958	1209.511765	0.331728
2101	273	0.720317	0.583782	1226.525796	0.340801
2101	274	0.722955	0.591642	1243.040304	0.350041
2104	275	0.725594	0.59954	1261.432253	0.359448
2105	276	0.728232	0.607474	1278.733293	0.369025
2106	277	0.730871	0.615448	1296.134001	0.378777
2110	278	0.733509	0.623461	1315.502482	0.388703
2110	279	0.736148	0.631514	1332.495526	0.398811
2110	280	0.738786	0.639608	1349.572528	0.409098
2110	281	0.741425	0.647744	1366.740685	0.419573
2113.5	282	0.744063	0.655923	1386.293327	0.430235
2114	283	0.746702	0.664147	1404.007048	0.441091
2114.5	284	0.74934	0.672414	1421.820342	0.452141
2118	285	0.751979	0.680729	1441.78508	0.463393
2120	286	0.754617	0.689092	1460.875683	0.474848
2120	287	0.757256	0.697503	1478.706054	0.48651
2130	288	0.759894	0.705963	1503.702106	0.498384
2130	289	0.762533	0.714474	1521.829677	0.510473
2130	290	0.765172	0.723037	1540.068638	0.522782
2130	291	0.76781	0.731654	1558.423833	0.535318

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2140	292	0.770449	0.740324	1584.293659	0.54808
2140	293	0.773087	0.749052	1602.97102	0.561079
2146	294	0.775726	0.757836	1626.317044	0.574316
2150	295	0.778364	0.766679	1648.359898	0.587797
2150	296	0.781003	0.775583	1667.503398	0.601529
2170	297	0.783641	0.784549	1702.472321	0.615518
2191	298	0.78628	0.79358	1738.732908	0.629769
2191.5	299	0.788918	0.802672	1759.056291	0.644283
2210	300	0.791557	0.811834	1794.153798	0.659075
2241	301	0.794195	0.821065	1840.005616	0.674147
2250	302	0.796834	0.830364	1868.319259	0.689505
2253	303	0.799472	0.839738	1891.928802	0.705159
2264	304	0.802111	0.849184	1922.552201	0.721113
2360	305	0.804749	0.858709	2026.552102	0.73738
2388	306	0.807388	0.868311	2073.525493	0.753963
2400	307	0.810026	0.877994	2107.186447	0.770874
2420	308	0.812665	0.88776	2148.379326	0.788118
2430	309	0.815303	0.89761	2181.192008	0.805703
2470	310	0.817942	0.907551	2241.650122	0.823648
2476	311	0.82058	0.91758	2271.928352	0.841953
2480	312	0.823219	0.927703	2300.702909	0.860632
2540	313	0.825858	0.937921	2382.319235	0.879696
2542	314	0.828496	0.948239	2410.423986	0.899158
2542	315	0.831135	0.958657	2436.907207	0.919024
2556	316	0.833773	0.969183	2477.230637	0.939315
2560	317	0.836412	0.979817	2508.33109	0.960041
2560	318	0.83905	0.990563	2535.840031	0.981214
2580	319	0.841689	1.001422	2583.668447	1.002846
2580	320	0.844327	1.012402	2611.996524	1.024957
2610	321	0.846966	1.023507	2671.352445	1.047566
2630	322	0.849604	1.034737	2721.357441	1.07068
2640	323	0.852243	1.046101	2761.706128	1.094327
2640	324	0.854881	1.057601	2792.067608	1.118521
2650	325	0.85752	1.069243	2833.493681	1.14328
2670	326	0.860158	1.08103	2886.349967	1.168626
2670	327	0.862797	1.092972	2918.234213	1.194587
2670	328	0.865435	1.10507	2950.53735	1.22118
2690	329	0.868074	1.117332	3005.624239	1.248432
2690	330	0.870712	1.129765	3039.068451	1.276369
2696	331	0.873351	1.142375	3079.843991	1.305021
2710	332	0.875989	1.15517	3130.509845	1.334417
2710	333	0.878628	1.168155	3165.700036	1.364586
2723	334	0.881266	1.181343	3216.796085	1.39557
2734	335	0.883905	1.194737	3266.411645	1.427397
2750	336	0.886544	1.20835	3322.962812	1.46011
2770	337	0.889182	1.22219	3385.467267	1.493749
2810	338	0.891821	1.236269	3473.916809	1.528362
2830	339	0.894459	1.250596	3539.187082	1.563991
2870	340	0.897098	1.265187	3631.08586	1.600697
2910	341	0.899736	1.28005	3724.945873	1.638528
2930	342	0.902375	1.295202	3794.942768	1.677549
2930	343	0.905013	1.310659	3840.231375	1.717827

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2930	344	0.907652	1.326434	3886.452669	1.759428
2950	345	0.91029	1.342546	3960.510867	1.80243
2950	346	0.912929	1.359012	4009.086751	1.846915
2960	347	0.915567	1.375859	4072.541378	1.892987
2970	348	0.918206	1.393105	4137.521455	1.940741
3000	349	0.920844	1.410774	4232.322226	1.990283
3000	350	0.923483	1.428896	4286.687272	2.041743
3000	351	0.926121	1.447497	4342.491593	2.095248
3010	352	0.92876	1.466619	4414.524165	2.150972
3010	353	0.931398	1.486287	4473.724312	2.209049
3020	354	0.934037	1.506551	4549.78308	2.269695
3020	355	0.936675	1.527451	4612.901648	2.333106
3040	356	0.939314	1.549042	4709.088535	2.399532
3050	357	0.941953	1.571379	4792.707387	2.469233
3050	358	0.944591	1.594526	4863.304639	2.542514
3052.5	359	0.94723	1.618564	4940.666781	2.61975
3054	360	0.949868	1.643575	5019.47854	2.701339
3060	361	0.952507	1.669659	5109.157973	2.787763
3060	362	0.955145	1.696931	5192.607841	2.879574
3070	363	0.957784	1.725525	5297.362304	2.977437
3109	364	0.960422	1.755607	5458.181286	3.082155
3110	365	0.963061	1.787366	5558.709108	3.194678
3110	366	0.965699	1.821036	5663.421234	3.316171
3115	367	0.968338	1.856906	5784.26293	3.448101
3128	368	0.970976	1.895341	5928.628161	3.592319
3130	369	0.973615	1.936796	6062.17227	3.75118
3160	370	0.976253	1.981871	6262.711759	3.927812
3161	371	0.978892	2.031375	6421.175131	4.126483
3190	372	0.98153	2.086435	6655.728976	4.353213
3200	373	0.984169	2.148645	6875.66353	4.616675
3230	374	0.986807	2.220495	7172.198639	4.930598
3240	375	0.989446	2.306042	7471.5761	5.31783
3280	376	0.992084	2.41278	7913.919399	5.821509
3330	377	0.994723	2.557135	8515.260561	6.538941
4250	378	0.997361	2.789602	11855.80913	7.78188

Table D-46. TDS Combined Background Data Set, Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
5.7620514	1	0.002639	-2.7896	-16.07383092	7.78188
5.8021184	2	0.005277	-2.55714	-14.83680173	6.538941
5.886104	3	0.007916	-2.41278	-14.20187588	5.821509
5.8916442	4	0.010554	-2.30604	-13.58637904	5.31783
5.9322452	5	0.013193	-2.22049	-13.17252039	4.930598
5.9738096	6	0.015831	-2.14864	-12.83559528	4.616675
6.0637852	7	0.01847	-2.08644	-12.65169621	4.353213
6.8023948	8	0.021108	-2.03137	-13.81821198	4.126483
6.8606637	9	0.023747	-1.98187	-13.59694907	3.927812
6.8638034	10	0.026385	-1.9368	-13.29378868	3.75118
6.8834626	11	0.029024	-1.89534	-13.04651219	3.592319
6.9047508	12	0.031662	-1.85691	-12.82147477	3.448101
6.946976	13	0.034301	-1.82104	-12.65069175	3.316171
6.946976	14	0.036939	-1.78737	-12.41679059	3.194678
6.9593985	15	0.039578	-1.75561	-12.21796678	3.082155
6.96319	16	0.042216	-1.72553	-12.01515966	2.977437
6.9660242	17	0.044855	-1.69693	-11.82086007	2.879574
6.9660242	18	0.047493	-1.66966	-11.63088824	2.787763
6.9754139	19	0.050132	-1.64358	-11.46461706	2.701339
6.9763481	20	0.05277	-1.61856	-11.29166623	2.61975
6.9874902	21	0.055409	-1.59453	-11.14173565	2.542514
6.9902565	22	0.058047	-1.57138	-10.98434556	2.469233
6.993933	23	0.060686	-1.54904	-10.83389789	2.399532
7.0475172	24	0.063325	-1.52745	-10.76473636	2.333106
7.0561753	25	0.065963	-1.50655	-10.63048573	2.269695
7.0561753	26	0.068602	-1.48629	-10.48750263	2.209049
7.0817086	27	0.07124	-1.46662	-10.38617066	2.150972
7.0983756	28	0.073879	-1.4475	-10.27487884	2.095248
7.0983756	29	0.076517	-1.4289	-10.14283883	2.041743
7.1066061	30	0.079156	-1.41077	-10.0258157	1.990283
7.1066061	31	0.081794	-1.3931	-9.900247598	1.940741
7.1066061	32	0.084433	-1.37586	-9.777684985	1.892987

TDS - lognormal
15911.81342 = (sum of Mi*Xi)^2
377 = count -1
0.129164483 = standard deviation ^2
367.8442618 = sum of Mi^2

0.888 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.1082441	33	0.087071	-1.35901	-9.660192341	1.846915
7.1139561	34	0.08971	-1.34255	-9.550813721	1.80243
7.1244783	35	0.092348	-1.32643	-9.45015275	1.759428
7.138867	36	0.094987	-1.31066	-9.356621513	1.717827
7.138867	37	0.097625	-1.2952	-9.246277028	1.677549
7.1400568	38	0.100264	-1.28005	-9.139630581	1.638528
7.140453	39	0.102902	-1.26519	-9.0340063	1.600697
7.1459845	40	0.105541	-1.2506	-8.936740608	1.563991
7.1467722	41	0.108179	-1.23627	-8.835335232	1.528362
7.1467722	42	0.110818	-1.22219	-8.734715984	1.493749
7.1546154	43	0.113456	-1.20835	-8.645280277	1.46011
7.1631724	44	0.116095	-1.19474	-8.558108893	1.427397
7.1643336	45	0.118734	-1.18134	-8.463532978	1.39557
7.1701195	46	0.121372	-1.16815	-8.375810959	1.364586
7.1701195	47	0.124011	-1.15517	-8.28270473	1.334417
7.1777824	48	0.126649	-1.14238	-8.199721827	1.305021
7.1777824	49	0.129288	-1.12977	-8.109208956	1.276369
7.1777824	50	0.131926	-1.11733	-8.019969076	1.248432
7.1777824	51	0.134565	-1.10507	-7.931953226	1.22118
7.1815919	52	0.137203	-1.09297	-7.849276149	1.194587
7.1815919	53	0.139842	-1.08103	-7.763515981	1.168626
7.185387	54	0.14248	-1.06924	-7.682924041	1.14328
7.185387	55	0.145119	-1.0576	-7.599275126	1.118521
7.185387	56	0.147757	-1.0461	-7.516639148	1.094327
7.185387	57	0.150396	-1.03474	-7.434983431	1.07068
7.185387	58	0.153034	-1.02351	-7.354291636	1.047566
7.185387	59	0.155673	-1.0124	-7.274498414	1.024957
7.1891677	60	0.158311	-1.00142	-7.199389863	1.002846
7.1891677	61	0.16095	-0.99056	-7.121320054	0.981214
7.1929342	62	0.163588	-0.97982	-7.047758022	0.960041
7.1951873	63	0.166227	-0.96918	-6.973450105	0.939315
7.2004249	64	0.168865	-0.95866	-6.902740879	0.919024
7.2078599	65	0.171504	-0.94824	-6.834775106	0.899158
7.2078599	66	0.174142	-0.93792	-6.760402841	0.879696
7.222566	67	0.176781	-0.9277	-6.700394616	0.860632
7.226209	68	0.17942	-0.91758	-6.630625656	0.841953
7.237059	69	0.182058	-0.90755	-6.567997673	0.823648
7.237059	70	0.184697	-0.89761	-6.496055682	0.805703
7.2442275	71	0.187335	-0.88776	-6.431135797	0.788118
7.251345	72	0.189974	-0.87799	-6.366639945	0.770874
7.251345	73	0.192612	-0.86831	-6.296419046	0.753963
7.251345	74	0.195251	-0.85871	-6.226791701	0.73738
7.2570027	75	0.197889	-0.84918	-6.162529385	0.721113
7.2584122	76	0.200528	-0.83974	-6.095161563	0.705159
7.2584122	77	0.203166	-0.83036	-6.027124984	0.689505
7.2654297	78	0.205805	-0.82106	-5.965386655	0.674147
7.2654297	79	0.208443	-0.81183	-5.898325036	0.659075

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.2723984	80	0.211082	-0.80267	-5.837352565	0.644283
7.2723984	81	0.21372	-0.79358	-5.771227022	0.629769
7.2793188	82	0.216359	-0.78455	-5.710985636	0.615518
7.2793188	83	0.218997	-0.77558	-5.645715763	0.601529
7.2861917	84	0.221636	-0.76668	-5.586170342	0.587797
7.2868764	85	0.224274	-0.75784	-5.522260626	0.574316
7.2896105	86	0.226913	-0.74905	-5.460296453	0.561079
7.2930177	87	0.229551	-0.74032	-5.39919704	0.54808
7.2997974	88	0.23219	-0.73165	-5.340928728	0.535318
7.3065314	89	0.234828	-0.72304	-5.282891953	0.522782
7.3065314	90	0.237467	-0.71447	-5.220326909	0.510473
7.3132204	91	0.240106	-0.70596	-5.162866148	0.498384
7.3132204	92	0.242744	-0.6975	-5.100992103	0.48651
7.3158835	93	0.245383	-0.68909	-5.041319014	0.474848
7.3172124	94	0.248021	-0.68073	-4.98104234	0.463393
7.333023	95	0.25066	-0.67241	-4.930830594	0.452141
7.3372624	96	0.253298	-0.66415	-4.873021806	0.441091
7.3427792	97	0.255937	-0.65592	-4.816297985	0.430235
7.3524411	98	0.258575	-0.64774	-4.762502552	0.419573
7.3524411	99	0.261214	-0.63961	-4.702678922	0.409098
7.3524411	100	0.263852	-0.63151	-4.643172925	0.398811
7.3556411	101	0.266491	-0.62346	-4.585954562	0.388703
7.3556411	102	0.269129	-0.61545	-4.527016396	0.378777
7.3588309	103	0.271768	-0.60747	-4.470300271	0.369025
7.3588309	104	0.274406	-0.59954	-4.411913803	0.359448
7.3588309	105	0.277045	-0.59164	-4.353795047	0.350041
7.3651801	106	0.279683	-0.58378	-4.299658934	0.340801
7.3651801	107	0.282322	-0.57596	-4.242034294	0.331728
7.3651801	108	0.28496	-0.56817	-4.184660851	0.322815
7.3651801	109	0.287599	-0.56041	-4.127538605	0.314062
7.3664451	110	0.290237	-0.55269	-4.071366722	0.305467
7.3714893	111	0.292876	-0.545	-4.017477843	0.297027
7.3714893	112	0.295515	-0.53735	-3.96103576	0.28874
7.374629	113	0.298153	-0.52972	-3.90648312	0.280603
7.3777589	114	0.300792	-0.52212	-3.852112312	0.272615
7.3783837	115	0.30343	-0.51456	-3.796623115	0.264772
7.3839895	116	0.306069	-0.50703	-3.74386804	0.257074
7.3839895	117	0.308707	-0.49952	-3.688438337	0.249519
7.3839895	118	0.311346	-0.49204	-3.633210105	0.242102
7.3898727	119	0.313984	-0.48459	-3.581042705	0.234825
7.3901814	120	0.316623	-0.47716	-3.526329429	0.227686
7.3901814	121	0.319261	-0.46977	-3.471651403	0.22068
7.3901814	122	0.3219	-0.46239	-3.417175016	0.213808
7.3951075	123	0.324538	-0.45505	-3.365108269	0.207066
7.3963353	124	0.327177	-0.44772	-3.311506773	0.200456
7.4021466	125	0.329815	-0.44042	-3.260074199	0.193972
7.4024515	126	0.332454	-0.43315	-3.206348571	0.187616

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.4085306	127	0.335092	-0.42589	-3.15525441	0.181386
7.4085306	128	0.337731	-0.41866	-3.101687156	0.17528
7.4085306	129	0.340369	-0.41146	-3.048279931	0.169296
7.4115563	130	0.343008	-0.40427	-2.996255936	0.163433
7.4115563	131	0.345646	-0.3971	-2.943138659	0.157689
7.4145729	132	0.348285	-0.38995	-2.891349385	0.152065
7.4145729	133	0.350923	-0.38283	-2.838513947	0.146558
7.4145729	134	0.353562	-0.37572	-2.785813379	0.141167
7.4160778	135	0.356201	-0.36863	-2.733819295	0.135891
7.4175804	136	0.358839	-0.36156	-2.681929554	0.130728
7.4199799	137	0.361478	-0.35451	-2.630471476	0.125679
7.4205789	138	0.364116	-0.34748	-2.57848892	0.120741
7.4205789	139	0.366755	-0.34046	-2.526420561	0.115914
7.4211775	140	0.369393	-0.33346	-2.474678363	0.111197
7.4235684	141	0.372032	-0.32648	-2.423622615	0.106587
7.4265491	142	0.37467	-0.31951	-2.372856963	0.102087
7.4265491	143	0.377309	-0.31256	-2.321219521	0.097692
7.4265491	144	0.379947	-0.30562	-2.269700282	0.093403
7.4265491	145	0.382586	-0.2987	-2.218282358	0.089219
7.4271441	146	0.385224	-0.29179	-2.167156269	0.085141
7.4280361	147	0.387863	-0.28489	-2.116199422	0.081164
7.4280361	148	0.390501	-0.27801	-2.065083657	0.077291
7.4301141	149	0.39314	-0.27115	-2.014641134	0.07352
7.4383835	150	0.395778	-0.26429	-1.96589087	0.069849
7.4383835	151	0.398417	-0.25745	-1.914991419	0.066279
7.4383835	152	0.401055	-0.25062	-1.864176532	0.062808
7.4383835	153	0.403694	-0.2438	-1.813454667	0.059437
7.4383835	154	0.406332	-0.23699	-1.762817367	0.056164
7.4383835	155	0.408971	-0.23019	-1.712264631	0.052989
7.4386776	156	0.411609	-0.22341	-1.661853701	0.049911
7.4407337	157	0.414248	-0.21663	-1.611888147	0.046929
7.4424927	158	0.416887	-0.20986	-1.56191699	0.044043
7.4442486	159	0.419525	-0.20311	-1.511989111	0.041253
7.4442486	160	0.422164	-0.19636	-1.461768892	0.038558
7.4442486	161	0.424802	-0.18962	-1.411599452	0.035957
7.4500796	162	0.427441	-0.18289	-1.362572619	0.03345
7.4500796	163	0.430079	-0.17617	-1.312499399	0.031037
7.4500796	164	0.432718	-0.16946	-1.262485467	0.028716
7.4500796	165	0.435356	-0.16275	-1.212530823	0.026489
7.4552985	166	0.437995	-0.15606	-1.163441439	0.024353
7.4558767	167	0.440633	-0.14936	-1.113639872	0.02231
7.4587627	168	0.443272	-0.14268	-1.064210705	0.020357
7.4587627	169	0.44591	-0.136	-1.01440135	0.018496
7.4616404	170	0.448549	-0.12933	-0.96499808	0.016726
7.4730691	171	0.451187	-0.12266	-0.916656195	0.015046
7.4730691	172	0.453826	-0.116	-0.866887237	0.013456
7.4787348	173	0.456464	-0.10935	-0.817763287	0.011956

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.4787348	174	0.459103	-0.10269	-0.768016112	0.010546
7.4787348	175	0.461741	-0.09605	-0.71831145	0.009225
7.4821189	176	0.46438	-0.08941	-0.668943353	0.007993
7.4843686	177	0.467018	-0.08277	-0.619453438	0.00685
7.4899709	178	0.469657	-0.07613	-0.570222927	0.005796
7.4899709	179	0.472296	-0.0695	-0.5205628	0.00483
7.4938739	180	0.474934	-0.06287	-0.471156577	0.003953
7.4955419	181	0.477573	-0.05625	-0.421598472	0.003164
7.4983159	182	0.480211	-0.04962	-0.372098711	0.002463
7.5010821	183	0.48285	-0.043	-0.322570409	0.001849
7.5010821	184	0.485488	-0.03638	-0.272921889	0.001324
7.5049421	185	0.488127	-0.02977	-0.223396794	0.000886
7.5065918	186	0.490765	-0.02315	-0.173777981	0.000536
7.5131635	187	0.493404	-0.01653	-0.124227257	0.000273
7.5175209	188	0.496042	-0.00992	-0.074576163	9.84E-05
7.5283318	189	0.498681	-0.00331	-0.024897323	1.09E-05
7.5323559	190	0.501319	0.003307	0.024910632	1.09E-05
7.5336937	191	0.503958	0.00992	0.074736603	9.84E-05
7.5336937	192	0.506596	0.016535	0.124566715	0.000273
7.538495	193	0.509235	0.02315	0.174516542	0.000536
7.5422135	194	0.511873	0.029767	0.224506238	0.000886
7.5443321	195	0.514512	0.036384	0.274495511	0.001324
7.5496092	196	0.51715	0.043003	0.324657226	0.001849
7.5574729	197	0.519789	0.049624	0.375034338	0.002463
7.5652753	198	0.522427	0.056247	0.425520732	0.003164
7.5704433	199	0.525066	0.062872	0.475970663	0.003953
7.5719884	200	0.527704	0.069501	0.526263127	0.00483
7.5794234	201	0.530343	0.076132	0.577033085	0.005796
7.5806998	202	0.532982	0.082766	0.627426406	0.00685
7.5806998	203	0.53562	0.089406	0.677757032	0.007993
7.5806998	204	0.538259	0.096047	0.728104894	0.009225
7.5857888	205	0.540897	0.102693	0.779009843	0.010546
7.5857888	206	0.543536	0.109345	0.829469121	0.011956
7.5857888	207	0.546174	0.116002	0.879962895	0.013456
7.5857888	208	0.548813	0.122661	0.930482542	0.015046
7.5883237	209	0.551451	0.129328	0.98138176	0.016726
7.6009025	210	0.55409	0.136001	1.033732541	0.018496
7.6009025	211	0.556728	0.142679	1.084491101	0.020357
7.6009025	212	0.559367	0.149364	1.135301508	0.02231
7.6009025	213	0.562005	0.156056	1.186163762	0.024353
7.6009025	214	0.564644	0.162754	1.237077863	0.026489
7.6009025	215	0.567282	0.169459	1.288043812	0.028716
7.6009025	216	0.569921	0.176173	1.33907025	0.031037
7.6026509	217	0.572559	0.182894	1.39047696	0.03345
7.603898	218	0.575198	0.189623	1.441872607	0.035957
7.603898	219	0.577836	0.196362	1.49311798	0.038558
7.60589	220	0.580475	0.203108	1.54481982	0.041253

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.60589	221	0.583113	0.209865	1.596208322	0.044043
7.6061387	222	0.585752	0.21663	1.64771988	0.046929
7.6083745	223	0.588391	0.223407	1.699765194	0.049911
7.6088706	224	0.591029	0.230193	1.751509586	0.052989
7.6108528	225	0.593668	0.236989	1.803690737	0.056164
7.6123368	226	0.596306	0.243797	1.85586394	0.059437
7.6143121	227	0.598945	0.250616	1.908267026	0.062808
7.6152983	228	0.601583	0.257447	1.960537651	0.066279
7.6157911	229	0.604222	0.26429	2.01277792	0.069849
7.6157911	230	0.60686	0.271145	2.064986577	0.07352
7.6207051	231	0.609499	0.278012	2.118647971	0.077291
7.6207051	232	0.612137	0.284894	2.171089581	0.081164
7.624619	233	0.614776	0.291789	2.224777187	0.085141
7.6255951	234	0.617414	0.298696	2.277736652	0.089219
7.6255951	235	0.620053	0.30562	2.330532676	0.093403
7.6255951	236	0.622691	0.312557	2.383432732	0.097692
7.6255951	237	0.62533	0.31951	2.436454158	0.102087
7.6255951	238	0.627968	0.326477	2.489579615	0.106587
7.6280311	239	0.630607	0.333462	2.543656112	0.111197
7.6294899	240	0.633245	0.340461	2.597546693	0.115914
7.6304613	241	0.635884	0.347478	2.65141845	0.120741
7.6304613	242	0.638522	0.354512	2.705089624	0.125679
7.6304613	243	0.641161	0.361564	2.758899595	0.130728
7.6304613	244	0.643799	0.368634	2.812848363	0.135891
7.6314317	245	0.646438	0.375721	2.867291855	0.141167
7.6319165	246	0.649077	0.382829	2.921719404	0.146558
7.6328855	247	0.651715	0.389955	2.976481473	0.152065
7.6343372	248	0.654354	0.397101	3.031605263	0.157689
7.6353039	249	0.656992	0.404268	3.086709957	0.163433
7.6353039	250	0.659631	0.411455	3.141587038	0.169296
7.6353039	251	0.662269	0.418664	3.196629046	0.17528
7.6353039	252	0.664908	0.425895	3.25183598	0.181386
7.6362696	253	0.667546	0.433147	3.307626138	0.187616
7.6379574	254	0.670185	0.440423	3.363930641	0.193972
7.6401232	255	0.672823	0.447723	3.420656126	0.200456
7.6401232	256	0.675462	0.455045	3.476601457	0.207066
7.6413244	257	0.6781	0.462394	3.533301989	0.213808
7.6415644	258	0.680739	0.469765	3.58974244	0.22068
7.6415644	259	0.683377	0.477164	3.646280384	0.227686
7.6430036	260	0.686016	0.484588	3.703706868	0.234825
7.6444408	261	0.688654	0.492039	3.76136228	0.242102
7.6446801	262	0.691293	0.499518	3.818658091	0.249519
7.6449193	263	0.693931	0.507025	3.876166044	0.257074
7.6449193	264	0.69657	0.51456	3.933771762	0.264772
7.6449193	265	0.699208	0.522125	3.991603453	0.272615
7.6449193	266	0.701847	0.529719	4.049661117	0.280603
7.6449193	267	0.704485	0.537345	4.107962136	0.28874

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.6449193	268	0.707124	0.545002	4.16649782	0.297027
7.6458758	269	0.709763	0.552691	4.225805497	0.305467
7.648263	270	0.712401	0.560412	4.286181788	0.314062
7.6496926	271	0.71504	0.568168	4.346311793	0.322815
7.6496926	272	0.717678	0.575958	4.405901538	0.331728
7.6501687	273	0.720317	0.583782	4.466030109	0.340801
7.6501687	274	0.722955	0.591642	4.526162791	0.350041
7.6515956	275	0.725594	0.59954	4.587437949	0.359448
7.6520707	276	0.728232	0.607474	4.648435927	0.369025
7.6525457	277	0.730871	0.615448	4.709745805	0.378777
7.6544432	278	0.733509	0.623461	4.772246	0.388703
7.6544432	279	0.736148	0.631514	4.833891637	0.398811
7.6544432	280	0.738786	0.639608	4.895841848	0.409098
7.6544432	281	0.741425	0.647744	4.958122738	0.419573
7.6561006	282	0.744063	0.655923	5.021812728	0.430235
7.6563372	283	0.746702	0.664147	5.084934411	0.441091
7.6565737	284	0.74934	0.672414	5.148390719	0.452141
7.6582275	285	0.751979	0.680729	5.21318139	0.463393
7.6591714	286	0.754617	0.689092	5.277876038	0.474848
7.6591714	287	0.757256	0.697503	5.3422939	0.48651
7.6638773	288	0.759894	0.705963	5.410417076	0.498384
7.6638773	289	0.762533	0.714474	5.475641244	0.510473
7.6638773	290	0.765172	0.723037	5.541266202	0.522782
7.6638773	291	0.76781	0.731654	5.607309376	0.535318
7.6685611	292	0.770449	0.740324	5.677220906	0.54808
7.6685611	293	0.773087	0.749052	5.744150102	0.561079
7.6713609	294	0.775726	0.757836	5.813637007	0.574316
7.6732231	295	0.778364	0.766679	5.882899202	0.587797
7.6732231	296	0.781003	0.775583	5.951221221	0.601529
7.6824824	297	0.783641	0.784549	6.027287428	0.615518
7.6921133	298	0.78628	0.79358	6.104304243	0.629769
7.6923415	299	0.788918	0.802672	6.17442927	0.644283
7.7007478	300	0.791557	0.811834	6.251731176	0.659075
7.7146775	301	0.794195	0.821065	6.334248049	0.674147
7.7186855	302	0.796834	0.830364	6.409319452	0.689505
7.7200179	303	0.799472	0.839738	6.482789299	0.705159
7.7248884	304	0.802111	0.849184	6.559850385	0.721113
7.7664169	305	0.804749	0.858709	6.669088342	0.73738
7.7782115	306	0.807388	0.868311	6.753902756	0.753963
7.783224	307	0.810026	0.877994	6.833626733	0.770874
7.7915228	308	0.812665	0.88776	6.917002704	0.788118
7.7956465	309	0.815303	0.89761	6.99744935	0.805703
7.8119734	310	0.817942	0.907551	7.089761617	0.823648
7.8143996	311	0.82058	0.91758	7.170337673	0.841953
7.8160138	312	0.823219	0.927703	7.250937812	0.860632
7.8399194	313	0.825858	0.937921	7.353224682	0.879696
7.8407065	314	0.828496	0.948239	7.434865026	0.899158

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.8407065	315	0.831135	0.958657	7.516551558	0.919024
7.8461988	316	0.833773	0.969183	7.604399096	0.939315
7.8477625	317	0.836412	0.979817	7.689369829	0.960041
7.8477625	318	0.83905	0.990563	7.773699373	0.981214
7.8555447	319	0.841689	1.001422	7.86671431	1.002846
7.8555447	320	0.844327	1.012402	7.952967207	1.024957
7.8671055	321	0.846966	1.023507	8.052035062	1.047566
7.8747391	322	0.849604	1.034737	8.148281337	1.07068
7.8785342	323	0.852243	1.046101	8.241740973	1.094327
7.8785342	324	0.854881	1.057601	8.332348532	1.118521
7.8823149	325	0.85752	1.069243	8.428109252	1.14328
7.8898338	326	0.860158	1.08103	8.529146586	1.168626
7.8898338	327	0.862797	1.092972	8.623364341	1.194587
7.8898338	328	0.865435	1.10507	8.718819915	1.22118
7.8972965	329	0.868074	1.117332	8.823905466	1.248432
7.8972965	330	0.870712	1.129765	8.922090915	1.276369
7.8995245	331	0.873351	1.142375	9.024222173	1.305021
7.9047039	332	0.875989	1.15517	9.131274325	1.334417
7.9047039	333	0.878628	1.168155	9.233919361	1.364586
7.9094895	334	0.881266	1.181343	9.343817421	1.39557
7.913521	335	0.883905	1.194737	9.454578349	1.427397
7.9193562	336	0.886544	1.20835	9.56935495	1.46011
7.9266026	337	0.889182	1.22219	9.687817196	1.493749
7.9409398	338	0.891821	1.236269	9.817140255	1.528362
7.948032	339	0.894459	1.250596	9.939778146	1.563991
7.9620673	340	0.897098	1.265187	10.07350175	1.600697
7.9759084	341	0.899736	1.28005	10.20956252	1.638528
7.9827577	342	0.902375	1.295202	10.33928621	1.677549
7.9827577	343	0.905013	1.310659	10.4626746	1.717827
7.9827577	344	0.907652	1.326434	10.58860409	1.759428
7.9895604	345	0.91029	1.342546	10.72635287	1.80243
7.9895604	346	0.912929	1.359012	10.85791219	1.846915
7.9929445	347	0.915567	1.375859	10.99716128	1.892987
7.9963172	348	0.918206	1.393105	11.13970845	1.940741
8.0063676	349	0.920844	1.410774	11.2951758	1.990283
8.0063676	350	0.923483	1.428896	11.44026465	2.041743
8.0063676	351	0.926121	1.447497	11.58919462	2.095248
8.0096954	352	0.92876	1.466619	11.74717399	2.150972
8.0096954	353	0.931398	1.486287	11.90470726	2.209049
8.0130121	354	0.934037	1.506551	12.07200891	2.269695
8.0130121	355	0.936675	1.527451	12.23948237	2.333106
8.0196128	356	0.939314	1.549042	12.4227193	2.399532
8.0228969	357	0.941953	1.571379	12.60701544	2.469233
8.0228969	358	0.944591	1.594526	12.79271855	2.542514
8.0237162	359	0.94723	1.618564	12.98689865	2.61975
8.0242075	360	0.949868	1.643575	13.18838811	2.701339
8.0261702	361	0.952507	1.669659	13.40097106	2.787763

Table D-46. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
8.0261702	362	0.955145	1.696931	13.61985434	2.879574
8.0294328	363	0.957784	1.725525	13.85498855	2.977437
8.0420564	364	0.960422	1.755607	14.11868826	3.082155
8.042378	365	0.963061	1.787366	14.3746752	3.194678
8.042378	366	0.965699	1.821036	14.645458	3.316171
8.0439844	367	0.968338	1.856906	14.93692487	3.448101
8.0481491	368	0.970976	1.895341	15.25399086	3.592319
8.0487883	369	0.973615	1.936796	15.58886298	3.75118
8.0583273	370	0.976253	1.981871	15.97056366	3.927812
8.0586437	371	0.978892	2.031375	16.3701242	4.126483
8.0677762	372	0.98153	2.086435	16.83289398	4.353213
8.0709061	373	0.984169	2.148645	17.34151083	4.616675
8.0802374	374	0.986807	2.220495	17.94212625	4.930598
8.0833286	375	0.989446	2.306042	18.64049532	5.31783
8.0955987	376	0.992084	2.41278	19.5329011	5.821509
8.1107276	377	0.994723	2.557135	20.74022784	6.538941
8.3546743	378	0.997361	2.789602	23.30621728	7.78188

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
318	5.762051383	1	0.00183	-2.9057	-924.021	8.443246	-16.74294501
331	5.802118375	2	0.00445	-2.6161	-865.943	6.844206	-15.17917323
360	5.886104031	3	0.00709	-2.4527	-882.968	6.015683	-14.43678221
362	5.891644212	4	0.00973	-2.3365	-845.81	5.459194	-13.76577891
377	5.932245187	5	0.01238	-2.2453	-846.467	5.041235	-13.3194896
393	5.973809612	6	0.01502	-2.1696	-852.653	4.707162	-12.96077501
430	6.063785209	7	0.01766	-2.1046	-904.993	4.429486	-12.76205097
900	6.802394763	8	0.02030	-2.0475	-1842.75	4.192256	-13.92790292
954	6.860663671	9	0.02295	-1.9964	-1904.53	3.985449	-13.69634808
957	6.863803391	10	0.02559	-1.9500	-1866.11	3.802331	-13.384119
976	6.883462586	11	0.02823	-1.9074	-1861.64	3.638249	-13.12965127
997	6.90475077	12	0.03088	-1.8681	-1862.46	3.48967	-12.89852834
1040	6.946975992	13	0.03352	-1.8314	-1904.67	3.354074	-12.72278285
1040	6.946975992	14	0.03616	-1.7971	-1868.95	3.229463	-12.48420618
1053	6.959398512	15	0.03881	-1.7647	-1858.25	3.114236	-12.28138873
1057	6.963189986	16	0.04145	-1.7341	-1832.97	3.007188	-12.07503802
1060	6.966024187	17	0.04409	-1.7051	-1807.37	2.90725	-11.87753167
1060	6.966024187	18	0.04673	-1.6774	-1778.02	2.813607	-11.68467716
1070	6.975413927	19	0.04938	-1.6509	-1766.49	2.72555	-11.51587741
1071	6.97634807	20	0.05202	-1.6256	-1740.99	2.642498	-11.34058581
1083	6.987490247	21	0.05466	-1.6012	-1734.13	2.563935	-11.18857263
1086	6.9902565	22	0.05731	-1.5778	-1713.49	2.489454	-11.02923023
1090	6.993932975	23	0.05995	-1.5552	-1695.17	2.41866	-10.87699329
1150	7.047517221	24	0.06259	-1.5334	-1763.38	2.351243	-10.80649542
1160	7.056175284	25	0.06523	-1.5123	-1754.21	2.28691	-10.6707238
1160	7.056175284	26	0.06788	-1.4918	-1730.47	2.225423	-10.52629674
1190	7.081708586	27	0.07052	-1.4719	-1751.59	2.166567	-10.42375259
1210	7.098375639	28	0.07316	-1.4526	-1757.68	2.110124	-10.31129032
1210	7.098375639	29	0.07581	-1.4339	-1734.97	2.055953	-10.1780721
1220	7.106606138	30	0.07845	-1.4156	-1727.01	2.003862	-10.05995872
1220	7.106606138	31	0.08109	-1.3978	-1705.27	1.953737	-9.933340312

Normal

220771.175	=sum X(i)*M(i)
373.123	=sum M(i)^2
599.35	= standard deviation
19.3164	= square root of sum Mi^2
0.982	= Filliben's Statistic

Lognormal

127.196	=sum X(i)*M(i)
373.123	=sum M(i)^2
0.36	= standard deviation
19.3164	= square root of sum Mi^2
0.944	= Filliben's Statistic

.987+ is acceptable value

Normal - Fail
Lognormal - Fail

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*MI (log)
1220	7.106606138	32	0.08374	-1.3804	-1684.059	1.905439	-9.809792027
1222	7.10824414	33	0.08638	-1.3634	-1666.076	1.858862	-9.691385534
1229	7.11395611	34	0.08902	-1.3468	-1655.226	1.813889	-9.581126165
1242	7.124478262	35	0.09166	-1.3306	-1652.577	1.770435	-9.47966767
1260	7.138867	36	0.09431	-1.3147	-1656.51	1.728411	-9.38540068
1260	7.138867	37	0.09695	-1.2991	-1636.9	1.68773	-9.274293295
1261.5	7.140056768	38	0.09959	-1.2839	-1619.608	1.648334	-9.166937194
1262	7.140453043	39	0.10224	-1.2689	-1601.369	1.610141	-9.060616302
1269	7.145984468	40	0.10488	-1.2542	-1591.62	1.573098	-8.9627213
1270	7.146772179	41	0.10752	-1.2398	-1574.567	1.537145	-8.860685042
1270	7.146772179	42	0.11016	-1.2257	-1556.58	1.502226	-8.759464549
1280	7.154615357	43	0.11281	-1.2117	-1551.016	1.468292	-8.669470365
1291	7.163172391	44	0.11545	-1.1980	-1546.671	1.435302	-8.581774149
1292.5	7.164333606	45	0.11809	-1.1846	-1531.059	1.403209	-8.486664506
1300	7.170119543	46	0.12074	-1.1713	-1522.707	1.371975	-8.398455777
1300	7.170119543	47	0.12338	-1.1583	-1505.735	1.34156	-8.304844155
1310	7.177782416	48	0.12602	-1.1454	-1500.47	1.311935	-8.221411622
1310	7.177782416	49	0.12867	-1.1327	-1483.868	1.283062	-8.130441781
1310	7.177782416	50	0.13131	-1.1202	-1467.5	1.254913	-8.04076125
1310	7.177782416	51	0.13395	-1.1079	-1451.356	1.227455	-7.952304749
1315	7.181591945	52	0.13659	-1.0958	-1440.911	1.200668	-7.869230248
1315	7.181591945	53	0.13924	-1.0838	-1425.136	1.174522	-7.783078182
1320	7.185387016	54	0.14188	-1.0719	-1414.921	1.148991	-7.702088138
1320	7.185387016	55	0.14452	-1.0602	-1399.485	1.124058	-7.618063457
1320	7.185387016	56	0.14717	-1.0487	-1384.239	1.0997	-7.53506805
1320	7.185387016	57	0.14981	-1.0373	-1369.175	1.075895	-7.453069241
1320	7.185387016	58	0.15245	-1.0260	-1354.285	1.052622	-7.372018018
1320	7.185387016	59	0.15509	-1.0148	-1339.567	1.029866	-7.291898042
1325	7.189167738	60	0.15774	-1.0038	-1330.032	1.00761	-7.216471721
1325	7.189167738	61	0.16038	-0.9929	-1315.583	0.985837	-7.138074986
1330	7.192934221	62	0.16302	-0.9821	-1306.202	0.964533	-7.064227345
1333	7.19518732	63	0.16567	-0.9714	-1294.918	0.943679	-6.989630107
1340	7.200424893	64	0.16831	-0.9609	-1287.559	0.923262	-6.918637966
1350	7.207859871	65	0.17095	-0.9504	-1283.051	0.903276	-6.850409998
1350	7.207859871	66	0.17360	-0.9401	-1269.069	0.883697	-6.775759124
1370	7.222566019	67	0.17624	-0.9298	-1273.819	0.864518	-6.715503052
1375	7.22620901	68	0.17888	-0.9196	-1264.499	0.84573	-6.645478825
1390	7.237059026	69	0.18152	-0.9096	-1264.302	0.827317	-6.582609861
1390	7.237059026	70	0.18417	-0.8996	-1250.44	0.809275	-6.510437498
1400	7.244227516	71	0.18681	-0.8897	-1245.595	0.791586	-6.445268315
1410	7.251344983	72	0.18945	-0.8799	-1240.678	0.774248	-6.380555522
1410	7.251344983	73	0.19210	-0.8702	-1226.979	0.757244	-6.310103795
1410	7.251344983	74	0.19474	-0.8606	-1213.395	0.74057	-6.240245624
1418	7.257002707	75	0.19738	-0.8510	-1206.732	0.724217	-6.175779297
1420	7.258412151	76	0.20003	-0.8415	-1194.973	0.708173	-6.108174745
1420	7.258412151	77	0.20267	-0.8321	-1181.623	0.692438	-6.039931869
1430	7.265429723	78	0.20531	-0.8228	-1176.603	0.676999	-5.977991167
1430	7.265429723	79	0.20795	-0.8135	-1163.363	0.661849	-5.910723052
1440	7.272398393	80	0.21060	-0.8044	-1158.268	0.646983	-5.849572314
1440	7.272398393	81	0.21324	-0.7952	-1145.132	0.632391	-5.783231809
1450	7.279318835	82	0.21588	-0.7862	-1139.952	0.61807	-5.722811508
1450	7.279318835	83	0.21853	-0.7772	-1126.913	0.604011	-5.657351295
1460	7.286191715	84	0.22117	-0.7683	-1121.649	0.590212	-5.597634624
1461	7.286876412	85	0.22381	-0.7594	-1109.458	0.576662	-5.533527165
1465	7.289610521	86	0.22645	-0.7506	-1099.591	0.563362	-5.471393185
1470	7.29301768	87	0.22910	-0.7418	-1090.479	0.550301	-5.410124843
1480	7.299797367	88	0.23174	-0.7331	-1085.027	0.537475	-5.351675815
1490	7.306531399	89	0.23438	-0.7245	-1079.485	0.524881	-5.293482823

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1490	7.306531399	90	0.23703	-0.7159	-1066.69	0.512512	-5.230743341
1500	7.313220387	91	0.23967	-0.7074	-1061.049	0.500367	-5.173125833
1500	7.313220387	92	0.24231	-0.6989	-1048.325	0.488437	-5.111085504
1504	7.315883505	93	0.24496	-0.6905	-1038.438	0.476722	-5.051258064
1506	7.317212408	94	0.24760	-0.6821	-1027.192	0.465215	-4.99082514
1530	7.333023014	95	0.25024	-0.6737	-1030.808	0.453913	-4.940484472
1536.5	7.337262382	96	0.25288	-0.6654	-1022.45	0.442812	-4.882514435
1545	7.342779189	97	0.25553	-0.6572	-1015.368	0.431907	-4.825647491
1560	7.3524411	98	0.25817	-0.6490	-1012.436	0.421197	-4.771713903
1560	7.3524411	99	0.26081	-0.6408	-999.7125	0.410678	-4.711748174
1560	7.3524411	100	0.26346	-0.6327	-987.0531	0.400343	-4.652083361
1565	7.355641103	101	0.26610	-0.6247	-977.5845	0.390193	-4.594735077
1565	7.355641103	102	0.26874	-0.6166	-965.0144	0.380223	-4.535654751
1570	7.358830898	103	0.27138	-0.6086	-955.548	0.37043	-4.47880015
1570	7.358830898	104	0.27403	-0.6007	-943.061	0.360811	-4.420271459
1570	7.358830898	105	0.27667	-0.5928	-930.6346	0.351365	-4.362027213
1580	7.365180126	106	0.27931	-0.5849	-924.1142	0.342087	-4.307764231
1580	7.365180126	107	0.28196	-0.5770	-911.7201	0.332973	-4.249988872
1580	7.365180126	108	0.28460	-0.5692	-899.3852	0.324024	-4.19248983
1580	7.365180126	109	0.28724	-0.5615	-887.1042	0.315235	-4.135241986
1582	7.366445148	110	0.28989	-0.5537	-875.9828	0.306604	-4.078937432
1590	7.371489295	111	0.29253	-0.5460	-868.1605	0.29813	-4.02492803
1590	7.371489295	112	0.29517	-0.5383	-855.959	0.289809	-3.968360241
1595	7.374629015	113	0.29781	-0.5307	-846.4617	0.281639	-3.913693345
1600	7.377758908	114	0.30046	-0.5231	-836.937	0.273619	-3.859199784
1601	7.378383713	115	0.30310	-0.5155	-825.3217	0.265744	-3.803585364
1610	7.383989458	116	0.30574	-0.5080	-817.804	0.258016	-3.750718053
1610	7.383989458	117	0.30839	-0.5004	-805.6925	0.25043	-3.695170826
1610	7.383989458	118	0.31103	-0.4929	-793.6268	0.242986	-3.639833464
1619.5	7.389872739	119	0.31367	-0.4855	-786.2151	0.235679	-3.587545321
1620	7.390181428	120	0.31631	-0.4780	-774.4056	0.228511	-3.532714694
1620	7.390181428	121	0.31896	-0.4706	-762.3975	0.221479	-3.477935847
1620	7.390181428	122	0.32160	-0.4632	-750.4281	0.214579	-3.423333436
1628	7.395107547	123	0.32424	-0.4559	-742.1462	0.207812	-3.371161499
1630	7.396335294	124	0.32689	-0.4485	-731.098	0.201176	-3.317451695
1639.5	7.402146596	125	0.32953	-0.4412	-723.3667	0.194668	-3.265914394
1640	7.402451521	126	0.33217	-0.4339	-711.6324	0.188288	-3.212088019
1650	7.408530567	127	0.33482	-0.4267	-703.9794	0.182034	-3.160880656
1650	7.408530567	128	0.33746	-0.4194	-692.0247	0.175904	-3.107203909
1650	7.408530567	129	0.34010	-0.4122	-680.1076	0.169898	-3.053695614
1655	7.411556288	130	0.34274	-0.4050	-670.2491	0.164012	-3.001564293
1655	7.411556288	131	0.34539	-0.3978	-658.3654	0.158248	-2.948345905
1660	7.414572881	132	0.34803	-0.3906	-648.4689	0.152603	-2.896457597
1660	7.414572881	133	0.35067	-0.3835	-636.6153	0.147075	-2.843512577
1660	7.414572881	134	0.35332	-0.3764	-624.7958	0.141664	-2.790719286
1662.5	7.416077773	135	0.35596	-0.3693	-613.9297	0.136368	-2.738616593
1665	7.417580402	136	0.35860	-0.3622	-603.0583	0.131187	-2.68662663
1669	7.419979924	137	0.36125	-0.3551	-592.7164	0.126119	-2.635077281
1670	7.420578905	138	0.36389	-0.3481	-581.3023	0.121163	-2.582993862
1670	7.420578905	139	0.36653	-0.3411	-569.5635	0.116319	-2.530832705
1671	7.421177529	140	0.36917	-0.3340	-558.1833	0.111584	-2.478981183
1675	7.423568444	141	0.37182	-0.3270	-547.8007	0.106959	-2.427842425
1680	7.426549072	142	0.37446	-0.3201	-537.7089	0.102441	-2.376977151
1680	7.426549072	143	0.37710	-0.3131	-526.0067	0.098031	-2.325246836
1680	7.426549072	144	0.37975	-0.3061	-514.3313	0.093728	-2.273634724
1680	7.426549072	145	0.38239	-0.2992	-502.6787	0.089529	-2.222123927
1681	7.427144133	146	0.38503	-0.2923	-491.3433	0.085435	-2.170896821
1682.5	7.428036062	147	0.38767	-0.2854	-480.1616	0.081445	-2.119855977

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*MI (log)
1682.5	7.428036062	148	0.39032	-0.2785	-468.5625	0.077558	-2.06864732
1686	7.430114139	149	0.39296	-0.2716	-457.937	0.073773	-2.01810443
1700	7.43838353	150	0.39560	-0.2647	-450.0642	0.070089	-1.969264998
1700	7.43838353	151	0.39825	-0.2579	-438.4121	0.066507	-1.918280983
1700	7.43838353	152	0.40089	-0.2510	-426.7774	0.063024	-1.867373075
1700	7.43838353	153	0.40353	-0.2442	-415.1659	0.059641	-1.816566646
1700	7.43838353	154	0.40618	-0.2374	-403.5718	0.056356	-1.765836324
1700	7.43838353	155	0.40882	-0.2306	-391.997	0.05317	-1.715190567
1700.5	7.438677604	156	0.41146	-0.2238	-380.5515	0.050081	-1.664686729
1704	7.440733707	157	0.41410	-0.2170	-369.7695	0.047089	-1.614645825
1707	7.442492723	158	0.41675	-0.2102	-358.8505	0.044194	-1.564582248
1710	7.444248649	159	0.41939	-0.2035	-347.9063	0.041394	-1.514561903
1710	7.444248649	160	0.42203	-0.1967	-336.3489	0.038689	-1.46424859
1710	7.444248649	161	0.42468	-0.1899	-324.8071	0.036079	-1.414002981
1720	7.45007957	162	0.42732	-0.1832	-315.111	0.033564	-1.364884864
1720	7.45007957	163	0.42996	-0.1765	-303.531	0.031142	-1.314726946
1720	7.45007957	164	0.43260	-0.1697	-291.9628	0.028814	-1.264619846
1720	7.45007957	165	0.43525	-0.1630	-280.4102	0.026579	-1.214580505
1729	7.455298486	166	0.43789	-0.1563	-270.2762	0.024436	-1.1654078
1730	7.455876687	167	0.44053	-0.1496	-258.8364	0.022385	-1.115521622
1735	7.458762692	168	0.44318	-0.1429	-247.9667	0.020426	-1.066008387
1735	7.458762692	169	0.44582	-0.1362	-236.3607	0.018559	-1.016114235
1740	7.461640392	170	0.44846	-0.1295	-225.4103	0.016782	-0.966626797
1760	7.473069088	171	0.45111	-0.1229	-216.248	0.015097	-0.918202448
1760	7.473069088	172	0.45375	-0.1162	-204.5068	0.013502	-0.868348531
1770	7.478734826	173	0.45639	-0.1095	-193.8669	0.011997	-0.819140666
1770	7.478734826	174	0.45903	-0.1029	-182.073	0.010581	-0.769308468
1770	7.478734826	175	0.46168	-0.0962	-170.2893	0.009256	-0.719518782
1776	7.482118924	176	0.46432	-0.0896	-159.0509	0.00802	-0.67006617
1780	7.484368643	177	0.46696	-0.0829	-147.5729	0.006873	-0.620500013
1790	7.489970899	178	0.46961	-0.0763	-136.5054	0.005816	-0.571185135
1790	7.489970899	179	0.47225	-0.0696	-124.6149	0.004847	-0.521431341
1797	7.493873887	180	0.47489	-0.0630	-113.1714	0.003966	-0.471948895
1800	7.495541944	181	0.47753	-0.0563	-101.4137	0.003174	-0.422305752
1805	7.498315871	182	0.48018	-0.0497	-89.72167	0.002471	-0.372721007
1810	7.501082124	183	0.48282	-0.0431	-77.9654	0.001855	-0.323107657
1810	7.501082124	184	0.48546	-0.0364	-65.96471	0.001328	-0.273373859
1817	7.504942068	185	0.48811	-0.0298	-54.17685	0.000889	-0.223772208
1820	7.50659178	186	0.49075	-0.0232	-42.20551	0.000538	-0.174076671
1832	7.513163545	187	0.49339	-0.0166	-30.34348	0.000274	-0.124440794
1840	7.517520851	188	0.49604	-0.0099	-18.28475	9.88E-05	-0.07470436
1860	7.528331767	189	0.49868	-0.0033	-6.161872	1.1E-05	-0.024940117
1867.5	7.532355917	190	0.50132	0.0033	6.186718	1.1E-05	0.024953448
1870	7.53369371	191	0.50396	0.0099	18.58288	9.88E-05	0.074865075
1870	7.53369371	192	0.50661	0.0166	30.97288	0.000274	0.124780836
1879	7.538494999	193	0.50925	0.0232	43.57371	0.000538	0.174816502
1886	7.542213463	194	0.51189	0.0298	56.2342	0.000889	0.224883516
1890	7.544332108	195	0.51454	0.0364	68.88027	0.001328	0.274950087
1900	7.549609165	196	0.51718	0.0431	81.84213	0.001855	0.32519795
1915	7.557472902	197	0.51982	0.0497	95.18947	0.002471	0.375661543
1930	7.565275282	198	0.52247	0.0563	108.738	0.003174	0.426234592
1940	7.570443252	199	0.52511	0.0630	122.1772	0.003966	0.476771077
1943	7.571988449	200	0.52775	0.0696	135.2664	0.004847	0.527141179
1957.5	7.579423428	201	0.53039	0.0763	149.2789	0.005816	0.578006784
1960	7.580699752	202	0.53304	0.0829	162.496	0.006873	0.628486452
1960	7.580699752	203	0.53568	0.0896	175.5291	0.00802	0.678894642
1960	7.580699752	204	0.53832	0.0962	188.5689	0.009256	0.729328687
1970	7.585788822	205	0.54097	0.1029	202.6463	0.010581	0.780320697

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
1970	7.585788822	206	0.54361	0.1095	215.7727	0.011997	0.830866216
1970	7.585788822	207	0.54625	0.1162	228.9082	0.013502	0.881446231
1970	7.585788822	208	0.54889	0.1229	242.0503	0.015097	0.932052117
1975	7.588323677	209	0.55154	0.1295	255.8536	0.016782	0.983038129
2000	7.60090246	210	0.55418	0.1362	272.4619	0.018559	1.035478069
2000	7.60090246	211	0.55682	0.1429	285.8405	0.020426	1.086323041
2000	7.60090246	212	0.55947	0.1496	299.2329	0.022385	1.13721986
2000	7.60090246	213	0.56211	0.1563	312.6388	0.024436	1.188168526
2000	7.60090246	214	0.56475	0.1630	326.0584	0.026579	1.23916904
2000	7.60090246	215	0.56740	0.1697	339.4916	0.028814	1.290221401
2000	7.60090246	216	0.57004	0.1765	352.9431	0.031142	1.341342892
2003.5	7.60265093	217	0.57268	0.1832	367.0493	0.033564	1.392836557
2006	7.603897969	218	0.57532	0.1899	381.0311	0.036079	1.444327682
2006	7.603897969	219	0.57797	0.1967	394.5707	0.038689	1.495650857
2010	7.605890001	220	0.58061	0.2035	408.9425	0.041394	1.547448476
2010	7.605890001	221	0.58325	0.2102	422.548	0.044194	1.598932094
2010.5	7.606138726	222	0.58590	0.2170	436.2803	0.047089	1.650538861
2015	7.608374474	223	0.58854	0.2238	450.9328	0.050081	1.70266285
2016	7.608870629	224	0.59118	0.2306	464.8623	0.05317	1.754502585
2020	7.61085279	225	0.59382	0.2374	479.5382	0.056356	1.806779693
2023	7.612336837	226	0.59647	0.2442	494.0474	0.059641	1.859048695
2027	7.614312146	227	0.59911	0.2510	508.8693	0.063024	1.911539171
2029	7.61529834	228	0.60175	0.2579	523.2578	0.066507	1.963905454
2030	7.615791072	229	0.60440	0.2647	537.4297	0.070089	2.016232523
2030	7.615791072	230	0.60704	0.2716	551.3713	0.073773	2.06853642
2040	7.620705087	231	0.60968	0.2785	568.1233	0.077558	2.122304069
2040	7.620705087	232	0.61233	0.2854	582.187	0.081445	2.17484098
2048	7.624618986	233	0.61497	0.2923	598.6146	0.085435	2.228617194
2050	7.625595072	234	0.61761	0.2992	613.3877	0.089529	2.281681182
2050	7.625595072	235	0.62025	0.3061	627.6066	0.093728	2.334572569
2050	7.625595072	236	0.62290	0.3131	641.8534	0.098031	2.387567987
2050	7.625595072	237	0.62554	0.3201	656.1329	0.102441	2.440684775
2050	7.625595072	238	0.62818	0.3270	670.4427	0.106959	2.493914264
2055	7.628031127	239	0.63083	0.3340	686.4553	0.111584	2.548078867
2058	7.629489916	240	0.63347	0.3411	701.8932	0.116319	2.602083051
2060	7.630461262	241	0.63611	0.3481	717.0556	0.121163	2.656050809
2060	7.630461262	242	0.63875	0.3551	731.5733	0.126119	2.709826081
2060	7.630461262	243	0.64140	0.3622	746.1262	0.131187	2.763731475
2060	7.630461262	244	0.64404	0.3693	760.7189	0.136368	2.817784342
2062	7.631431665	245	0.64668	0.3764	776.1018	0.141664	2.872341248
2063	7.631916513	246	0.64933	0.3835	791.1671	0.147075	2.92686456
2065	7.632885505	247	0.65197	0.3906	806.6796	0.152603	2.98174009
2068	7.634337236	248	0.65461	0.3978	822.6584	0.158248	3.036969032
2070	7.635303886	249	0.65726	0.4050	838.3176	0.164012	3.092178568
2070	7.635303886	250	0.65990	0.4122	853.2259	0.169898	3.147168494
2070	7.635303886	251	0.66254	0.4194	868.1765	0.175904	3.202314666
2070	7.635303886	252	0.66518	0.4267	883.1742	0.182034	3.257634444
2072	7.636269603	253	0.66783	0.4339	899.0868	0.188288	3.313546875
2075.5	7.637957367	254	0.67047	0.4412	915.7351	0.194668	3.369956888
2080	7.640123173	255	0.67311	0.4485	932.9349	0.201176	3.426796997
2080	7.640123173	256	0.67576	0.4559	948.1966	0.207812	3.482855243
2082.5	7.641324374	257	0.67840	0.4632	964.6708	0.214579	3.539669692
2083	7.641564441	258	0.68104	0.4706	980.2926	0.221479	3.596240655
2083	7.641564441	259	0.68369	0.4780	995.7326	0.228511	3.652882848
2086	7.643003636	260	0.68633	0.4855	1012.686	0.235679	3.710432223
2089	7.644440762	261	0.68897	0.4929	1029.743	0.242986	3.76821926
2089.5	7.644680082	262	0.69161	0.5004	1045.649	0.25043	3.825628269
2090	7.644919345	263	0.69426	0.5080	1061.621	0.258016	3.883258118

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
2090	7.644919345	264	0.69690	0.5155	1077.403	0.265744	3.940985514
2090	7.644919345	265	0.69954	0.5231	1093.249	0.273619	3.998947573
2090	7.644919345	266	0.70219	0.5307	1109.157	0.281639	4.057135606
2090	7.644919345	267	0.70483	0.5383	1125.129	0.289809	4.115558303
2090	7.644919345	268	0.70747	0.5460	1141.167	0.29813	4.174224356
2092	7.645875825	269	0.71011	0.5537	1158.379	0.306604	4.233663385
2097	7.648263031	270	0.71276	0.5615	1177.378	0.315235	4.294181251
2100	7.649692624	271	0.71540	0.5692	1195.385	0.324024	4.354443202
2100	7.649692624	272	0.71804	0.5770	1211.78	0.332973	4.414163397
2101	7.650168701	273	0.72069	0.5849	1228.838	0.342087	4.474449032
2101	7.650168701	274	0.72333	0.5928	1245.391	0.351365	4.53472087
2104	7.651595574	275	0.72597	0.6007	1263.822	0.360811	4.596128107
2105	7.652070746	276	0.72862	0.6086	1281.165	0.37043	4.657274515
2106	7.652545693	277	0.73126	0.6166	1298.607	0.380223	4.71873284
2110	7.654443226	278	0.73390	0.6247	1318.021	0.390193	4.781383199
2110	7.654443226	279	0.73654	0.6327	1335.053	0.400343	4.84316807
2110	7.654443226	280	0.73919	0.6408	1352.175	0.410678	4.90528362
2110	7.654443226	281	0.74183	0.6490	1369.384	0.421197	4.967712446
2113.5	7.65610062	282	0.74447	0.6572	1388.984	0.431907	5.031561184
2114	7.656337166	283	0.74712	0.6654	1406.742	0.442812	5.094839845
2114.5	7.656573657	284	0.74976	0.6737	1424.604	0.453913	5.158470549
2118	7.658227526	285	0.75240	0.6821	1444.617	0.465215	5.223420113
2120	7.659171368	286	0.75504	0.6905	1463.756	0.476722	5.288281465
2120	7.659171368	287	0.75769	0.6989	1481.632	0.488437	5.352864768
2130	7.663877259	288	0.76033	0.7074	1506.69	0.500367	5.421168696
2130	7.663877259	289	0.76297	0.7159	1524.866	0.512512	5.48656712
2130	7.663877259	290	0.76562	0.7245	1543.156	0.524881	5.552375048
2130	7.663877259	291	0.76826	0.7331	1561.56	0.537475	5.618592477
2140	7.668561108	292	0.77090	0.7418	1587.5	0.550301	5.68871142
2140	7.668561108	293	0.77355	0.7506	1606.229	0.563362	5.755823697
2146	7.671360923	294	0.77619	0.7594	1629.635	0.576662	5.825498013
2150	7.673223121	295	0.77883	0.7683	1651.743	0.590212	5.894972449
2150	7.673223121	296	0.78147	0.7772	1670.94	0.604011	5.963486384
2170	7.682482447	297	0.78412	0.7862	1705.998	0.61807	6.039768273
2191	7.69211334	298	0.78676	0.7952	1742.35	0.632391	6.117001867
2191.5	7.69234152	299	0.78940	0.8044	1762.739	0.646983	6.187354646
2210	7.700747795	300	0.79205	0.8135	1797.925	0.661849	6.264872036
2241	7.714677474	301	0.79469	0.8228	1843.893	0.676999	6.347631943
2250	7.718685495	302	0.79733	0.8321	1872.289	0.692438	6.422938453
2253	7.72001794	303	0.79997	0.8415	1895.968	0.708173	6.496630067
2264	7.724888439	304	0.80262	0.8510	1926.686	0.724217	6.573954568
2360	7.766416898	305	0.80526	0.8606	2030.931	0.74057	6.683497912
2388	7.778211475	306	0.80790	0.8702	2078.032	0.757244	6.768581809
2400	7.783224016	307	0.81055	0.8799	2111.792	0.774248	6.848563003
2420	7.791522819	308	0.81319	0.8897	2153.1	0.791586	6.932202922
2430	7.795646536	309	0.81583	0.8996	2186.021	0.809275	7.012941217
2470	7.81197343	310	0.81848	0.9096	2246.637	0.827317	7.105534603
2476	7.814399634	311	0.82112	0.9196	2277.018	0.84573	7.186399843
2480	7.816013839	312	0.82376	0.9298	2305.891	0.864518	7.267287645
2540	7.83991936	313	0.82640	0.9401	2387.731	0.883697	7.369927562
2542	7.840706452	314	0.82905	0.9504	2415.938	0.903276	7.451872654
2542	7.840706452	315	0.83169	0.9609	2442.519	0.923262	7.533862257
2556	7.846198815	316	0.83433	0.9714	2482.978	0.943679	7.622043044
2560	7.847762537	317	0.83698	0.9821	2514.193	0.964533	7.707338481
2560	7.847762537	318	0.83962	0.9929	2541.806	0.985837	7.791989213
2580	7.855544678	319	0.84226	1.0038	2589.799	1.00761	7.885379515
2580	7.855544678	320	0.84491	1.0148	2618.244	1.029866	7.971989641
2610	7.8671055	321	0.84755	1.0260	2677.791	1.052622	8.071443246

Table D-47. TDS Combined Background Data, Filliben's Statistic Analysis

TDS	Ln(TDS)	Count	m(i)	M(i)	X(i)*Mi	Mi^2	X(i)*Mi (log)
2630	7.874739125	322	0.85019	1.0373	2727.977	1.075895	8.168102265
2640	7.878534196	323	0.85283	1.0487	2768.477	1.0997	8.261947641
2640	7.878534196	324	0.85548	1.0602	2798.971	1.124058	8.352949301
2650	7.882314919	325	0.85812	1.0719	2840.561	1.148991	8.449132121
2670	7.889833751	326	0.86076	1.0838	2893.623	1.174522	8.550637993
2670	7.889833751	327	0.86341	1.0958	2925.653	1.200668	8.645286294
2670	7.889833751	328	0.86605	1.1079	2958.108	1.227455	8.741190353
2690	7.897296473	329	0.86869	1.1202	3013.416	1.254913	8.846781886
2690	7.897296473	330	0.87133	1.1327	3047.026	1.283062	8.945452157
2696	7.899524472	331	0.87398	1.1454	3087.991	1.311935	9.048092925
2710	7.904703914	332	0.87662	1.1583	3138.878	1.34156	9.155681952
2710	7.904703914	333	0.87926	1.1713	3174.259	1.371975	9.258884157
2723	7.909489493	334	0.88191	1.1846	3225.588	1.403209	9.369354839
2734	7.913521017	335	0.88455	1.1980	3275.444	1.435302	9.480722561
2750	7.919356191	336	0.88719	1.2117	3332.261	1.468292	9.596130662
2770	7.926602599	337	0.88984	1.2257	3395.06	1.502226	9.715266237
2810	7.940939762	338	0.89248	1.2398	3483.884	1.537145	9.845307001
2830	7.948031991	339	0.89512	1.2542	3549.476	1.573098	9.968674846
2870	7.962067309	340	0.89776	1.2689	3641.781	1.610141	10.10317363
2910	7.97590836	341	0.90041	1.2839	3736.075	1.648334	10.24006578
2930	7.982757702	342	0.90305	1.2991	3806.441	1.68773	10.3706143
2930	7.982757702	343	0.90569	1.3147	3852.043	1.728411	10.49485578
2930	7.982757702	344	0.90834	1.3306	3898.591	1.770435	10.62167464
2950	7.989560449	345	0.91098	1.3468	3973.081	1.813889	10.76039625
2950	7.989560449	346	0.91362	1.3634	4022.032	1.858862	10.89297287
2960	7.992944547	347	0.91626	1.3804	4085.914	1.905439	11.03327273
2970	7.996317232	348	0.91891	1.3978	4151.352	1.953737	11.17694421
3000	8.006367568	349	0.92155	1.4156	4246.735	2.003862	11.33364164
3000	8.006367568	350	0.92419	1.4339	4301.578	2.055953	11.48000479
3000	8.006367568	351	0.92684	1.4526	4357.88	2.110124	11.63026368
3010	8.009695358	352	0.92948	1.4719	4430.498	2.166567	11.78968065
3010	8.009695358	353	0.93212	1.4918	4490.273	2.225423	11.94874373
3020	8.01301211	354	0.93477	1.5123	4567.005	2.28691	12.11770337
3020	8.01301211	355	0.93741	1.5334	4630.796	2.351243	12.28696234
3040	8.019612794	356	0.94005	1.5552	4727.82	2.41866	12.47213476
3050	8.02289687	357	0.94269	1.5778	4812.292	2.489454	12.65853072
3050	8.02289687	358	0.94534	1.6012	4883.749	2.563935	12.84649583
3052.5	8.023716206	359	0.94798	1.6256	4962.072	2.642498	13.04316258
3054	8.024207486	360	0.95062	1.6509	5041.922	2.72555	13.24735574
3060	8.026170195	361	0.95327	1.6774	5132.786	2.813607	13.46294602
3060	8.026170195	362	0.95591	1.7051	5217.502	2.90725	13.68515069
3070	8.029432841	363	0.95855	1.7341	5323.762	3.007188	13.92403583
3109	8.04205641	364	0.96119	1.7647	5486.514	3.114236	14.19197662
3110	8.042378005	365	0.96384	1.7971	5588.89	3.229463	14.45272092
3110	8.042378005	366	0.96648	1.8314	5695.695	3.354074	14.72891644
3115	8.043984431	367	0.96912	1.8681	5819.025	3.48967	15.02669171
3128	8.048149102	368	0.97177	1.9074	5966.408	3.638249	15.35119713
3130	8.048788284	369	0.97441	1.9500	6103.364	3.802331	15.69478816
3160	8.058327307	370	0.97705	1.9964	6308.495	3.985449	16.08731473
3161	8.058643712	371	0.97970	2.0475	6472.147	4.192256	16.50007258
3190	8.067776196	372	0.98234	2.1046	6713.784	4.429486	16.97971935
3200	8.070906089	373	0.98498	2.1696	6942.719	4.707162	17.51063471
3230	8.080237416	374	0.98762	2.2453	7252.221	5.041235	18.14231119
3240	8.083328609	375	0.99027	2.3365	7570.234	5.459194	18.88663173
3280	8.095598701	376	0.99291	2.4527	8044.82	6.015683	19.85598533
3330	8.110727583	377	0.99555	2.6161	8711.757	6.844206	21.21882578
4250	8.354674262	378	0.99817	2.9057	12349.34	8.443246	24.27639784

Table D-48. TDS Combined Background Data Set, Distribution Summary

Parameter	Distribution Type (tested)	Coefficient of Variation	Studentized Range Test	Coefficient of Skewness (-1 to 1)	Shapiro-Wilk Test	Filliben's Statistic	Histogram	Probability Plot	Number of Samples	Distribution Type (determined)
TDS	Normal	Pass	Pass	Pass	Fail	Fail	X	?	378	Nonparametric
TDS	Lognormal	Pass	NA	Fail	Fail	Fail		?	378	

NA - not applicable
? - Results of graphical test were inconclusive.

Table D-49. T_n Statistic Analysis for TDS Combined Background Data Set

Parameter	Distribution	Maximum Observation	Mean	Standard Deviation	T_n Statistic	N	Upper 5% Critical Value	Pass or Fail T_n Statistic
TDS	Normal	4250	1910.16	599.35	3.904	378	3.34+	Fail
TDS	Normal	3330	1903.96	587.86	2.426	377	3.34+	Pass

N - number of samples

Table D-51. 95th Percentile for Combined TDS Background Data Set

Parameter	Distribution	Censored?	95th Percentile (mg/L)	Sample #
TDS	Nonparametric	No	3053	378

SD = standard deviation

Table D-52. Summary Table for Combined TDS Background Data Set

Parameter	Distribution	Mean	SD	95th Percentile (mg/L)	Range (normal)	Sample #
TDS	Nonparametric	1910.16	599.35	3053	4250 to 318	378

SD = standard deviation

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Normality Analysis (censored data set)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
318	1	0.002646	-2.7888	-886.8389705	7.777415
331	2	0.005291	-2.55619	-846.098701	6.534104
360	3	0.007937	-2.41183	-868.2603948	5.816945
362	4	0.010582	-2.30504	-834.4250455	5.313217
377	5	0.013228	-2.21946	-836.7357077	4.925994
393	6	0.015873	-2.14759	-844.0028068	4.612142
430	7	0.018519	-2.08535	-896.7018402	4.348698
900	8	0.021164	-2.03028	-1827.254891	4.12205
954	9	0.02381	-1.98075	-1889.637533	3.923379
957	10	0.026455	-1.93565	-1852.417327	3.746742
976	11	0.029101	-1.89418	-1848.717075	3.587908
997	12	0.031746	-1.85573	-1850.165791	3.443745
1040	13	0.034392	-1.81984	-1892.638102	3.311833
1040	14	0.037037	-1.78616	-1857.602911	3.190356
1053	15	0.039683	-1.75438	-1847.360982	3.077845
1057	16	0.042328	-1.72428	-1822.567892	2.973154
1060	17	0.044974	-1.69568	-1797.416098	2.875316
1060	18	0.047619	-1.66839	-1768.494167	2.783528
1070	19	0.050265	-1.64229	-1757.253267	2.697126
1071	20	0.05291	-1.61727	-1732.094056	2.615556
1083	21	0.055556	-1.59322	-1725.453403	2.538339
1086	22	0.058201	-1.57006	-1705.080986	2.465076
1090	23	0.060847	-1.54771	-1686.998803	2.395392
1150	24	0.063492	-1.5261	-1755.020548	2.328996
1160	25	0.066138	-1.50519	-1746.021553	2.2656
1160	26	0.068783	-1.48491	-1722.500019	2.204969
1190	27	0.071429	-1.46523	-1743.62649	2.146906
1210	28	0.074074	-1.44611	-1749.787862	2.091222
1210	29	0.07672	-1.42749	-1727.26086	2.037723
1220	30	0.079365	-1.40936	-1719.416196	1.986289
1220	31	0.082011	-1.39167	-1697.840344	1.936752

TDS - normal
46069767824 = (sum of Mi*Xi)^2
376 = count -1
345582.0115 = standard deviation ^2
366.8494342 = sum of Mi^2

0.966 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1220	32	0.084656	-1.37442	-1676.791544	1.889028
1222	33	0.087302	-1.35756	-1658.940537	1.842974
1229	34	0.089947	-1.34108	-1648.189495	1.7985
1242	35	0.092593	-1.32496	-1645.595885	1.75551
1260	36	0.095238	-1.30917	-1649.556907	1.713932
1260	37	0.097884	-1.29371	-1630.069801	1.673676
1261.5	38	0.100529	-1.27854	-1612.881541	1.634671
1262	39	0.103175	-1.26367	-1594.748833	1.596856
1269	40	0.10582	-1.24907	-1585.067535	1.560171
1270	41	0.108466	-1.23473	-1568.107109	1.524558
1270	42	0.111111	-1.22064	-1550.215256	1.489967
1280	43	0.113757	-1.20679	-1544.691622	1.456343
1291	44	0.116402	-1.19317	-1540.377434	1.423645
1292.5	45	0.119048	-1.17976	-1524.83999	1.391834
1300	46	0.121693	-1.16657	-1516.535349	1.360875
1300	47	0.124339	-1.15357	-1499.639666	1.330721
1310	48	0.126984	-1.14076	-1494.399908	1.301341
1310	49	0.12963	-1.12814	-1477.868705	1.272709
1310	50	0.132275	-1.1157	-1461.566853	1.244786
1310	51	0.134921	-1.10343	-1445.491375	1.217555
1315	52	0.137566	-1.09132	-1435.086961	1.190981
1315	53	0.140212	-1.07937	-1419.371711	1.16504
1320	54	0.142857	-1.06757	-1409.191646	1.139704
1320	55	0.145503	-1.05592	-1393.812818	1.114965
1320	56	0.148148	-1.04441	-1378.620073	1.09079
1320	57	0.150794	-1.03304	-1363.607407	1.067163
1320	58	0.153439	-1.02179	-1348.768819	1.044064
1320	59	0.156085	-1.01068	-1334.098306	1.021475
1325	60	0.15873	-0.99969	-1324.588311	0.999379
1325	61	0.161376	-0.98882	-1310.187599	0.977767
1330	62	0.164021	-0.97806	-1300.824829	0.956609
1333	63	0.166667	-0.96742	-1289.571419	0.935902
1340	64	0.169312	-0.95689	-1282.227504	0.915631
1350	65	0.171958	-0.94646	-1277.716365	0.89578
1350	66	0.174603	-0.93613	-1263.774493	0.876338
1370	67	0.177249	-0.9259	-1268.485721	0.857294
1375	68	0.179894	-0.91577	-1259.18092	0.838631
1390	69	0.18254	-0.90573	-1258.963857	0.820346
1390	70	0.185185	-0.89578	-1245.133535	0.802421
1400	71	0.187831	-0.88592	-1240.285656	0.784851
1410	72	0.190476	-0.87614	-1235.362379	0.767627
1410	73	0.193122	-0.86645	-1221.695334	0.750737
1410	74	0.195767	-0.85684	-1208.140498	0.73417
1418	75	0.198413	-0.8473	-1201.476298	0.717923
1420	76	0.201058	-0.83785	-1189.742716	0.701988
1420	77	0.203704	-0.82846	-1176.41946	0.686353
1430	78	0.206349	-0.81915	-1171.391068	0.671014
1430	79	0.208995	-0.80991	-1158.177201	0.655961

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1440	80	0.21164	-0.80074	-1153.068297	0.641188
1440	81	0.214286	-0.79164	-1139.958476	0.62669
1450	82	0.216931	-0.7826	-1134.769605	0.612462
1450	83	0.219577	-0.77362	-1121.753371	0.598493
1460	84	0.222222	-0.76471	-1116.476551	0.584781
1461	85	0.224868	-0.75586	-1104.305668	0.571318
1465	86	0.227513	-0.74706	-1094.44469	0.5581
1470	87	0.230159	-0.73832	-1085.33518	0.545121
1480	88	0.232804	-0.72964	-1079.870344	0.532378
1490	89	0.23545	-0.72102	-1074.313195	0.519863
1490	90	0.238095	-0.71244	-1061.540934	0.507576
1500	91	0.240741	-0.70392	-1055.882421	0.495506
1500	92	0.243386	-0.69545	-1043.177917	0.483653
1504	93	0.246032	-0.68703	-1033.293156	0.47201
1506	94	0.248677	-0.67866	-1022.059137	0.460577
1530	95	0.251323	-0.67033	-1025.609242	0.449346
1536.5	96	0.253968	-0.66205	-1017.244474	0.438314
1545	97	0.256614	-0.65382	-1010.15163	0.42748
1560	98	0.259259	-0.64563	-1007.182527	0.416838
1560	99	0.261905	-0.63748	-994.4752946	0.406386
1560	100	0.26455	-0.62938	-981.8319086	0.396118
1565	101	0.267196	-0.62132	-972.3607263	0.386035
1565	102	0.269841	-0.61329	-959.8031397	0.376128
1570	103	0.272487	-0.60531	-950.3361525	0.3664
1570	104	0.275132	-0.59736	-937.8598179	0.356842
1570	105	0.277778	-0.58945	-925.4441693	0.347457
1580	106	0.280423	-0.58158	-918.9032653	0.33824
1580	107	0.283069	-0.57375	-906.5234963	0.329188
1580	108	0.285714	-0.56595	-894.1994111	0.320298
1580	109	0.28836	-0.55818	-881.9274171	0.311567
1582	110	0.291005	-0.55045	-870.8120072	0.302995
1590	111	0.293651	-0.54275	-862.9725926	0.294578
1590	112	0.296296	-0.53508	-850.7819985	0.286314
1595	113	0.298942	-0.52745	-841.2756301	0.278199
1600	114	0.301587	-0.51984	-831.7438187	0.270234
1601	115	0.304233	-0.51226	-820.1361572	0.262415
1610	116	0.306878	-0.50472	-812.5966247	0.254741
1610	117	0.309524	-0.4972	-800.4924666	0.247208
1610	118	0.312169	-0.48971	-788.4340675	0.239816
1619.5	119	0.314815	-0.48225	-781.0009549	0.232563
1620	120	0.31746	-0.47481	-769.1971859	0.225447
1620	121	0.320106	-0.4674	-757.1928109	0.218466
1620	122	0.322751	-0.46002	-745.2307955	0.211617
1628	123	0.325397	-0.45266	-736.9305786	0.204901
1630	124	0.328042	-0.44532	-725.8797268	0.198314
1639.5	125	0.330688	-0.43801	-718.1254648	0.191857
1640	126	0.333333	-0.43073	-706.3932571	0.185526
1650	127	0.335979	-0.42346	-698.7139614	0.179321

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1650	128	0.338624	-0.41622	-686.7649063	0.17324
1650	129	0.34127	-0.409	-674.8496162	0.167281
1655	130	0.343915	-0.4018	-664.9808483	0.161444
1655	131	0.346561	-0.39462	-653.100949	0.155727
1660	132	0.349206	-0.38746	-643.1903557	0.150128
1660	133	0.351852	-0.38033	-631.3406175	0.144648
1660	134	0.354497	-0.37321	-619.5229616	0.139283
1662.5	135	0.357143	-0.36611	-608.6507653	0.134033
1665	136	0.359788	-0.35903	-597.7771366	0.128899
1669	137	0.362434	-0.35196	-587.4225872	0.123876
1670	138	0.365079	-0.34491	-576.0072099	0.118966
1670	139	0.367725	-0.33789	-564.2683504	0.114166
1671	140	0.37037	-0.33087	-552.8888425	0.109477
1675	141	0.373016	-0.32388	-542.491648	0.104895
1680	142	0.375661	-0.3169	-532.3840014	0.100423
1680	143	0.378307	-0.30993	-520.6837159	0.096057
1680	144	0.380952	-0.30298	-509.0063496	0.091797
1680	145	0.383598	-0.29605	-497.3557225	0.087643
1681	146	0.386243	-0.28912	-486.0171384	0.083593
1682.5	147	0.388889	-0.28222	-474.8287665	0.079646
1682.5	148	0.391534	-0.27532	-463.2296623	0.075802
1686	149	0.39418	-0.26844	-452.5930581	0.072061
1700	150	0.396825	-0.26157	-444.6740149	0.06842
1700	151	0.399471	-0.25472	-433.0199772	0.064881
1700	152	0.402116	-0.24787	-421.3852662	0.061441
1700	153	0.404762	-0.24104	-409.769882	0.058101
1700	154	0.407407	-0.23422	-398.1738246	0.054859
1700	155	0.410053	-0.22741	-386.5951612	0.051715
1700.5	156	0.412698	-0.22061	-375.1461293	0.048668
1704	157	0.415344	-0.21382	-364.3491618	0.045719
1707	158	0.417989	-0.20704	-353.4166785	0.042865
1710	159	0.420635	-0.20027	-342.46101	0.040108
1710	160	0.42328	-0.19351	-330.8997748	0.037446
1710	161	0.425926	-0.18676	-319.3521479	0.034878
1720	162	0.428571	-0.18001	-309.6201908	0.032404
1720	163	0.431217	-0.17328	-298.0363206	0.030025
1720	164	0.433862	-0.16655	-286.4641829	0.027739
1720	165	0.436508	-0.15983	-274.905733	0.025545
1729	166	0.439153	-0.15312	-264.737057	0.023444
1730	167	0.441799	-0.14641	-253.2900908	0.021436
1735	168	0.444444	-0.13971	-242.3964247	0.019519
1735	169	0.44709	-0.13302	-230.7845136	0.017694
1740	170	0.449735	-0.12633	-219.8141146	0.015959
1760	171	0.452381	-0.11965	-210.5814929	0.014316
1760	172	0.455026	-0.11297	-198.8302756	0.012763
1770	173	0.457672	-0.1063	-188.1520689	0.0113
1770	174	0.460317	-0.09963	-176.3521936	0.009927
1770	175	0.462963	-0.09297	-164.5603675	0.008644

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
1776	176	0.465608	-0.08631	-153.292458	0.00745
1780	177	0.468254	-0.07966	-141.79343	0.006346
1790	178	0.470899	-0.07301	-130.6853051	0.00533
1790	179	0.473545	-0.06636	-118.7866928	0.004404
1797	180	0.47619	-0.05972	-107.3122075	0.003566
1800	181	0.478836	-0.05307	-95.53446034	0.002817
1805	182	0.481481	-0.04644	-83.81587691	0.002156
1810	183	0.484127	-0.0398	-72.03501582	0.001584
1810	184	0.486772	-0.03316	-60.02403552	0.0011
1817	185	0.489418	-0.02653	-48.20080676	0.000704
1820	186	0.492063	-0.0199	-36.20925781	0.000396
1832	187	0.494709	-0.01326	-24.29727829	0.000176
1840	188	0.497354	-0.00663	-12.20168997	4.4E-05
1860	189	0.5	0	0	0
1867.5	190	0.502646	0.006631	12.38405218	4.4E-05
1870	191	0.505291	0.013263	24.80126113	0.000176
1870	192	0.507937	0.019895	37.20401764	0.000396
1879	193	0.510582	0.026528	49.84552334	0.000704
1886	194	0.513228	0.033162	62.54438176	0.0011
1890	195	0.515873	0.039798	75.21888392	0.001584
1900	196	0.518519	0.046435	88.22723885	0.002156
1915	197	0.521164	0.053075	101.6380509	0.002817
1930	198	0.52381	0.059717	115.2546247	0.003566
1940	199	0.526455	0.066361	128.740885	0.004404
1943	200	0.529101	0.073009	141.8556133	0.00533
1957.5	201	0.531746	0.079659	155.9329434	0.006346
1960	202	0.534392	0.086313	169.174109	0.00745
1960	203	0.537037	0.092972	182.2250397	0.008644
1960	204	0.539683	0.099634	195.2826551	0.009927
1970	205	0.542328	0.106301	209.4121896	0.0113
1970	206	0.544974	0.112972	222.5543426	0.012763
1970	207	0.547619	0.119649	235.7076937	0.014316
1970	208	0.550265	0.12633	248.8700034	0.015959
1975	209	0.55291	0.133017	262.7085962	0.017694
2000	210	0.555556	0.13971	279.4195098	0.019519
2000	211	0.558201	0.14641	292.8209142	0.021436
2000	212	0.560847	0.153116	306.2314136	0.023444
2000	213	0.563492	0.159829	319.6578291	0.025545
2000	214	0.566138	0.166549	333.0978871	0.027739
2000	215	0.568783	0.173277	346.5538612	0.030025
2000	216	0.571429	0.180012	360.0234777	0.032404
2003.5	217	0.574074	0.186756	374.1649289	0.034878
2006	218	0.57672	0.193509	388.1783323	0.037446
2006	219	0.579365	0.20027	401.7408105	0.040108
2010	220	0.582011	0.20704	416.1496918	0.042865
2010	221	0.584656	0.21382	429.7780606	0.045719
2010.5	222	0.587302	0.220609	443.5350149	0.048668
2015	223	0.589947	0.227409	458.2289705	0.051715

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2016	224	0.592593	0.23422	472.187312	0.054859
2020	225	0.595238	0.241041	486.9030363	0.058101
2023	226	0.597884	0.247874	501.4484668	0.061441
2027	227	0.600529	0.254718	516.3126434	0.064881
2029	228	0.603175	0.261573	530.7315155	0.06842
2030	229	0.60582	0.268442	544.9370747	0.072061
2030	230	0.608466	0.275322	558.9041393	0.075802
2040	231	0.611111	0.282216	575.7210602	0.079646
2040	232	0.613757	0.289124	589.8125892	0.083593
2048	233	0.616402	0.296045	606.3003093	0.087643
2050	234	0.619048	0.30298	621.1089385	0.091797
2050	235	0.621693	0.309931	635.3581057	0.096057
2050	236	0.624339	0.316895	649.6352398	0.100423
2050	237	0.626984	0.323876	663.9450021	0.104895
2050	238	0.62963	0.330873	678.2897231	0.109477
2055	239	0.632275	0.337885	694.3541678	0.114166
2058	240	0.634921	0.344914	709.8340348	0.118966
2060	241	0.637566	0.351961	725.0392628	0.123876
2060	242	0.640212	0.359025	739.592133	0.128899
2060	243	0.642857	0.366106	754.1777904	0.134033
2060	244	0.645503	0.373207	768.805603	0.139283
2062	245	0.648148	0.380326	784.2315381	0.144648
2063	246	0.650794	0.387464	799.3383758	0.150128
2065	247	0.653439	0.394623	814.8963502	0.155727
2068	248	0.656085	0.401801	830.9247096	0.161444
2070	249	0.65873	0.409	846.6295185	0.167281
2070	250	0.661376	0.416221	861.5777915	0.17324
2070	251	0.664021	0.423463	876.5684242	0.179321
2070	252	0.666667	0.430728	891.6061233	0.185526
2072	253	0.669312	0.438015	907.5669186	0.191857
2075.5	254	0.671958	0.445325	924.272008	0.198314
2080	255	0.674603	0.45266	941.5329259	0.204901
2080	256	0.677249	0.460019	956.8395399	0.211617
2082.5	257	0.679894	0.467403	973.3666843	0.218466
2083	258	0.68254	0.474813	989.0356409	0.225447
2083	259	0.685185	0.482248	1004.522994	0.232563
2086	260	0.687831	0.489711	1021.536314	0.239816
2089	261	0.690476	0.4972	1038.651405	0.247208
2089.5	262	0.693122	0.504718	1054.609098	0.254741
2090	263	0.695767	0.512265	1070.633709	0.262415
2090	264	0.698413	0.51984	1086.465363	0.270234
2090	265	0.701058	0.527446	1102.361171	0.278199
2090	266	0.703704	0.535083	1118.323507	0.286314
2090	267	0.706349	0.54275	1134.347622	0.294578
2090	268	0.708995	0.55045	1150.440642	0.302995
2092	269	0.71164	0.558182	1167.716555	0.311567
2097	270	0.714286	0.565949	1186.795041	0.320298
2100	271	0.716931	0.573749	1204.873001	0.329188

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2100	272	0.719577	0.581584	1221.327125	0.33824
2101	273	0.722222	0.589455	1238.444713	0.347457
2101	274	0.724868	0.597363	1255.05954	0.356842
2104	275	0.727513	0.60531	1273.571506	0.3664
2105	276	0.730159	0.613293	1290.98122	0.376128
2106	277	0.732804	0.621317	1308.493092	0.386035
2110	278	0.73545	0.629379	1327.990594	0.396118
2110	279	0.738095	0.637484	1345.091584	0.406386
2110	280	0.740741	0.64563	1362.278931	0.416838
2110	281	0.743386	0.65382	1379.559831	0.42748
2113.5	282	0.746032	0.662053	1399.24907	0.438314
2114	283	0.748677	0.670333	1417.08362	0.449346
2114.5	284	0.751323	0.678658	1435.022606	0.460577
2118	285	0.753968	0.68703	1455.129591	0.47201
2120	286	0.756614	0.695452	1474.358123	0.483653
2120	287	0.759259	0.703922	1492.313822	0.495506
2130	288	0.761905	0.712444	1517.504825	0.507576
2130	289	0.76455	0.721016	1535.763158	0.519863
2130	290	0.767196	0.729642	1554.137725	0.532378
2130	291	0.769841	0.738323	1572.628526	0.545121
2140	292	0.772487	0.747061	1598.711015	0.5581
2140	293	0.775132	0.755856	1617.531916	0.571318
2146	294	0.777778	0.76471	1641.067588	0.584781
2150	295	0.780423	0.773623	1663.289481	0.598493
2150	296	0.783069	0.7826	1682.589414	0.612462
2170	297	0.785714	0.791638	1717.854093	0.62669
2191	298	0.78836	0.800742	1754.425443	0.641188
2191.5	299	0.791005	0.809914	1774.926809	0.655961
2210	300	0.793651	0.819155	1810.331651	0.671014
2241	301	0.796296	0.828464	1856.588739	0.686353
2250	302	0.798942	0.837847	1885.155712	0.701988
2253	303	0.801587	0.847303	1908.974682	0.717923
2264	304	0.804233	0.856837	1939.879494	0.73417
2360	305	0.806878	0.866451	2044.823395	0.750737
2388	306	0.809524	0.876144	2092.230752	0.767627
2400	307	0.812169	0.885918	2126.203981	0.784851
2420	308	0.814815	0.89578	2167.786442	0.802421
2430	309	0.81746	0.905729	2200.922427	0.820346
2470	310	0.820106	0.915768	2261.946815	0.838631
2476	311	0.822751	0.925902	2292.533318	0.857294
2480	312	0.825397	0.936129	2321.60055	0.876338
2540	313	0.828042	0.946457	2403.999679	0.89578
2542	314	0.830688	0.956886	2432.404713	0.915631
2542	315	0.833333	0.96742	2459.182706	0.935902
2556	316	0.835979	0.978064	2499.931024	0.956609
2560	317	0.838624	0.988821	2531.381324	0.977767
2560	318	0.84127	0.999689	2559.204586	0.999379
2580	319	0.843915	1.010681	2607.55578	1.021475

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
2580	320	0.846561	1.021795	2636.229965	1.044064
2610	321	0.849206	1.033036	2696.223737	1.067163
2630	322	0.851852	1.044409	2746.796054	1.09079
2640	323	0.854497	1.055919	2787.625635	1.114965
2640	324	0.857143	1.067569	2818.383291	1.139704
2650	325	0.859788	1.07937	2860.330824	1.16504
2670	326	0.862434	1.091321	2913.826756	1.190981
2670	327	0.865079	1.103429	2946.154177	1.217555
2670	328	0.867725	1.1157	2978.918701	1.244786
2690	329	0.87037	1.128144	3034.707493	1.272709
2690	330	0.873016	1.140763	3068.653245	1.301341
2696	331	0.875661	1.153569	3110.021953	1.330721
2710	332	0.878307	1.166566	3161.39292	1.360875
2710	333	0.880952	1.17976	3197.149999	1.391834
2723	334	0.883598	1.193166	3248.991288	1.423645
2734	335	0.886243	1.20679	3299.364762	1.456343
2750	336	0.888889	1.220642	3356.765319	1.489967
2770	337	0.891534	1.23473	3420.20212	1.524558
2810	338	0.89418	1.249068	3509.881617	1.560171
2830	339	0.896825	1.263668	3576.180029	1.596856
2870	340	0.899471	1.278543	3669.417379	1.634671
2910	341	0.902116	1.293706	3764.685016	1.673676
2930	342	0.904762	1.309172	3835.874395	1.713932
2930	343	0.907407	1.324956	3882.122337	1.75551
2930	344	0.910053	1.341082	3929.369586	1.7985
2950	345	0.912698	1.357562	4004.807352	1.842974
2950	346	0.915344	1.374419	4054.53693	1.889028
2960	347	0.917989	1.391672	4119.350342	1.936752
2970	348	0.920635	1.409358	4185.791886	1.986289
3000	349	0.92328	1.427488	4282.464943	2.037723
3000	350	0.925926	1.446106	4338.317012	2.091222
3000	351	0.928571	1.465232	4395.697033	2.146906
3010	352	0.931217	1.484914	4469.590567	2.204969
3010	353	0.933862	1.505191	4530.624892	2.2656
3020	354	0.936508	1.526105	4608.836571	2.328996
3020	355	0.939153	1.547705	4674.070078	2.395392
3040	356	0.941799	1.570056	4772.970715	2.465076
3050	357	0.944444	1.593216	4859.310138	2.538339
3050	358	0.94709	1.617268	4932.66748	2.615556
3052.5	359	0.949735	1.642293	5013.098689	2.697126
3054	360	0.952381	1.668391	5095.265269	2.783528
3060	361	0.955026	1.695676	5188.767227	2.875316
3060	362	0.957672	1.724284	5276.308184	2.973154
3070	363	0.960317	1.754379	5385.943223	3.077845
3109	364	0.962963	1.786157	5553.161009	3.190356
3110	365	0.965608	1.819844	5659.715862	3.311833
3110	366	0.968254	1.855733	5771.329597	3.443745
3115	367	0.970899	1.894177	5900.362385	3.587908

Table D-50. TDS Combined Background Data Set,
Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
3128	368	0.973545	1.93565	6054.714104	3.746742
3130	369	0.97619	1.980752	6199.754171	3.923379
3160	370	0.978836	2.030283	6415.694952	4.12205
3161	371	0.981481	2.085353	6591.801202	4.348698
3190	372	0.984127	2.14759	6850.811587	4.612142
3200	373	0.986772	2.219458	7102.265954	4.925994
3230	374	0.989418	2.305042	7445.284245	5.313217
3240	375	0.992063	2.411834	7814.343553	5.816945
3280	376	0.994709	2.556189	8384.301327	6.534104
3330	377	0.997354	2.788802	9286.709974	7.777415

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Normality Analysis (censored data set) (cont.)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
5.7620514	1	0.002646	-2.7888	-16.06921923	7.777415
5.8021184	2	0.005291	-2.55619	-14.83131366	6.534104
5.886104	3	0.007937	-2.41183	-14.19630836	5.816945
5.8916442	4	0.010582	-2.30504	-13.58048478	5.313217
5.9322452	5	0.013228	-2.21946	-13.1663697	4.925994
5.9738096	6	0.015873	-2.14759	-12.82929282	4.612142
6.0637852	7	0.018519	-2.08535	-12.64513338	4.348698
6.8023948	8	0.021164	-2.03028	-13.81078789	4.12205
6.8606637	9	0.02381	-1.98075	-13.58927419	3.923379
6.8638034	10	0.026455	-1.93565	-13.28592302	3.746742
6.8834626	11	0.029101	-1.89418	-13.03849879	3.587908
6.9047508	12	0.031746	-1.85573	-12.81337379	3.443745
6.946976	13	0.034392	-1.81984	-12.64241486	3.311833
6.946976	14	0.037037	-1.78616	-12.40838733	3.190356
6.9593985	15	0.039683	-1.75438	-12.20942191	3.077845
6.96319	16	0.042328	-1.72428	-12.00651513	2.973154
6.9660242	17	0.044974	-1.69568	-11.812117	2.875316
6.9660242	18	0.047619	-1.66839	-11.62205013	2.783528
6.9754139	19	0.050265	-1.64229	-11.45567188	2.697126
6.9763481	20	0.05291	-1.61727	-11.28262467	2.615556
6.9874902	21	0.055556	-1.59322	-11.13258433	2.538339
6.9902565	22	0.058201	-1.57006	-10.97509525	2.465076
6.993933	23	0.060847	-1.54771	-10.8245473	2.395392
7.0475172	24	0.063492	-1.5261	-10.75525003	2.328996
7.0561753	25	0.066138	-1.50519	-10.62089149	2.2656
7.0561753	26	0.068783	-1.48491	-10.47781212	2.204969
7.0817086	27	0.071429	-1.46523	-10.37634847	2.146906
7.0983756	28	0.074074	-1.44611	-10.26500126	2.091222
7.0983756	29	0.07672	-1.42749	-10.13284827	2.037723
7.1066061	30	0.079365	-1.40936	-10.01574893	1.986289

TDS - lognormal
15552.95311 = (sum of Mi*Xi)^2
376 = count -1
0.127554865 = standard deviation ^2
366.8494342 = sum of Mi^2

0.884 = W statistic

0.976 is acceptable low value
Fails Shapiro-Francia test

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.1066061	31	0.082011	-1.39167	-9.890067711	1.936752
7.1066061	32	0.084656	-1.37442	-9.767456622	1.889028
7.1082441	33	0.087302	-1.35756	-9.649880809	1.842974
7.1139561	34	0.089947	-1.34108	-9.540396852	1.7985
7.1244783	35	0.092593	-1.32496	-9.439623277	1.75551
7.138867	36	0.095238	-1.30917	-9.346005848	1.713932
7.138867	37	0.097884	-1.29371	-9.235596435	1.673676
7.1400568	38	0.100529	-1.27854	-9.128867035	1.634671
7.140453	39	0.103175	-1.26367	-9.023160979	1.596856
7.1459845	40	0.10582	-1.24907	-8.925821893	1.560171
7.1467722	41	0.108466	-1.23473	-8.824334064	1.524558
7.1467722	42	0.111111	-1.22064	-8.723649816	1.489967
7.1546154	43	0.113757	-1.20679	-8.634120627	1.456343
7.1631724	44	0.116402	-1.19317	-8.54685446	1.423645
7.1643336	45	0.119048	-1.17976	-8.452195271	1.391834
7.1701195	46	0.121693	-1.16657	-8.364415187	1.360875
7.1701195	47	0.124339	-1.15357	-8.271227443	1.330721
7.1777824	48	0.126984	-1.14076	-8.188150672	1.301341
7.1777824	49	0.12963	-1.12814	-8.09757252	1.272709
7.1777824	50	0.132275	-1.1157	-8.008251038	1.244786
7.1777824	51	0.134921	-1.10343	-7.920169906	1.217555
7.1815919	52	0.137566	-1.09132	-7.837421259	1.190981
7.1815919	53	0.140212	-1.07937	-7.751595775	1.16504
7.185387	54	0.142857	-1.06757	-7.670899509	1.139704
7.185387	55	0.145503	-1.05592	-7.587185244	1.114965
7.185387	56	0.148148	-1.04441	-7.504483915	1.09079
7.185387	57	0.150794	-1.03304	-7.422762847	1.067163
7.185387	58	0.153439	-1.02179	-7.341989365	1.044064
7.185387	59	0.156085	-1.01068	-7.262130792	1.021475
7.1891677	60	0.15873	-0.99969	-7.186934002	0.999379
7.1891677	61	0.161376	-0.98882	-7.108798808	0.977767
7.1929342	62	0.164021	-0.97806	-7.035148441	0.956609
7.1951873	63	0.166667	-0.96742	-6.960771134	0.935902
7.2004249	64	0.169312	-0.95689	-6.889987192	0.915631
7.2078599	65	0.171958	-0.94646	-6.821926305	0.89578
7.2078599	66	0.174603	-0.93613	-6.747488485	0.876338
7.222566	67	0.177249	-0.9259	-6.687388222	0.857294
7.226209	68	0.179894	-0.91577	-6.61753055	0.838631
7.237059	69	0.18254	-0.90573	-6.554817084	0.820346
7.237059	70	0.185185	-0.89578	-6.482809273	0.802421
7.2442275	71	0.187831	-0.88592	-6.417793909	0.784851
7.251345	72	0.190476	-0.87614	-6.353218999	0.767627
7.251345	73	0.193122	-0.86645	-6.282932148	0.750737
7.251345	74	0.195767	-0.85684	-6.213222366	0.73417
7.2570027	75	0.198413	-0.8473	-6.14888346	0.717923
7.2584122	76	0.201058	-0.83785	-6.081438721	0.701988
7.2584122	77	0.203704	-0.82846	-6.013336127	0.686353

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.2654297	78	0.206349	-0.81915	-5.951510128	0.671014
7.2654297	79	0.208995	-0.80991	-5.884374171	0.655961
7.2723984	80	0.21164	-0.80074	-5.823313909	0.641188
7.2723984	81	0.214286	-0.79164	-5.757105689	0.62669
7.2793188	82	0.216931	-0.7826	-5.696792935	0.612462
7.2793188	83	0.219577	-0.77362	-5.631448581	0.598493
7.2861917	84	0.222222	-0.76471	-5.571823422	0.584781
7.2868764	85	0.224868	-0.75586	-5.507829516	0.571318
7.2896105	86	0.227513	-0.74706	-5.445785342	0.5581
7.2930177	87	0.230159	-0.73832	-5.384604526	0.545121
7.2997974	88	0.232804	-0.72964	-5.326239659	0.532378
7.3065314	89	0.23545	-0.72102	-5.268122881	0.519863
7.3065314	90	0.238095	-0.71244	-5.205491385	0.507576
7.3132204	91	0.240741	-0.70392	-5.147933901	0.495506
7.3132204	92	0.243386	-0.69545	-5.085993342	0.483653
7.3158835	93	0.246032	-0.68703	-5.02623162	0.47201
7.3172124	94	0.248677	-0.67866	-4.965885655	0.460577
7.333023	95	0.251323	-0.67033	-4.915566129	0.449346
7.3372624	96	0.253968	-0.66205	-4.85765676	0.438314
7.3427792	97	0.256614	-0.65382	-4.800854604	0.42748
7.3524411	98	0.259259	-0.64563	-4.746955262	0.416838
7.3524411	99	0.261905	-0.63748	-4.687064763	0.406386
7.3524411	100	0.26455	-0.62938	-4.627475178	0.396118
7.3556411	101	0.267196	-0.62132	-4.570183083	0.386035
7.3556411	102	0.269841	-0.61329	-4.511161294	0.376128
7.3588309	103	0.272487	-0.60531	-4.454371365	0.3664
7.3588309	104	0.275132	-0.59736	-4.39589287	0.356842
7.3588309	105	0.277778	-0.58945	-4.33769882	0.347457
7.3651801	106	0.280423	-0.58158	-4.28347346	0.33824
7.3651801	107	0.283069	-0.57375	-4.225765088	0.329188
7.3651801	108	0.285714	-0.56595	-4.168316285	0.320298
7.3651801	109	0.28836	-0.55818	-4.111110307	0.311567
7.3664451	110	0.291005	-0.55045	-4.054860231	0.302995
7.3714893	111	0.293651	-0.54275	-4.000876244	0.294578
7.3714893	112	0.296296	-0.53508	-3.944358738	0.286314
7.374629	113	0.298942	-0.52745	-3.889715155	0.278199
7.3777589	114	0.301587	-0.51984	-3.835253355	0.270234
7.3783837	115	0.304233	-0.51226	-3.779687236	0.262415
7.3839895	116	0.306878	-0.50472	-3.726835348	0.254741
7.3839895	117	0.309524	-0.4972	-3.671321699	0.247208
7.3839895	118	0.312169	-0.48971	-3.616017915	0.239816
7.3898727	119	0.314815	-0.48225	-3.563752804	0.232563
7.3901814	120	0.31746	-0.47481	-3.508954789	0.225447
7.3901814	121	0.320106	-0.4674	-3.454192746	0.218466
7.3901814	122	0.322751	-0.46002	-3.399623941	0.211617
7.3951075	123	0.325397	-0.45266	-3.34746983	0.204901
7.3963353	124	0.328042	-0.44532	-3.29377291	0.198314

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.4021466	125	0.330688	-0.43801	-3.242250665	0.191857
7.4024515	126	0.333333	-0.43073	-3.188440147	0.185526
7.4085306	127	0.335979	-0.42346	-3.13723863	0.179321
7.4085306	128	0.338624	-0.41622	-3.083587152	0.17324
7.4085306	129	0.34127	-0.409	-3.030087279	0.167281
7.4115563	130	0.343915	-0.4018	-2.977971594	0.161444
7.4115563	131	0.346561	-0.39462	-2.924770057	0.155727
7.4145729	132	0.349206	-0.38746	-2.872880584	0.150128
7.4145729	133	0.351852	-0.38033	-2.819952422	0.144648
7.4145729	134	0.354497	-0.37321	-2.767167561	0.139283
7.4160778	135	0.357143	-0.36611	-2.715068519	0.134033
7.4175804	136	0.359788	-0.35903	-2.663099083	0.128899
7.4199799	137	0.362434	-0.35196	-2.611542123	0.123876
7.4205789	138	0.365079	-0.34491	-2.55946524	0.118966
7.4205789	139	0.367725	-0.33789	-2.507304083	0.114166
7.4211775	140	0.37037	-0.33087	-2.455467537	0.109477
7.4235684	141	0.373016	-0.32388	-2.404312764	0.104895
7.4265491	142	0.375661	-0.3169	-2.353438043	0.100423
7.4265491	143	0.378307	-0.30993	-2.301716171	0.096057
7.4265491	144	0.380952	-0.30298	-2.250095615	0.091797
7.4265491	145	0.383598	-0.29605	-2.198593262	0.087643
7.4271441	146	0.386243	-0.28912	-2.14736427	0.083593
7.4280361	147	0.388889	-0.28222	-2.096312155	0.079646
7.4280361	148	0.391534	-0.27532	-2.045103498	0.075802
7.4301141	149	0.39418	-0.26844	-1.994554021	0.072061
7.4383835	150	0.396825	-0.26157	-1.945679923	0.06842
7.4383835	151	0.399471	-0.25472	-1.894687451	0.064881
7.4383835	152	0.402116	-0.24787	-1.843779544	0.061441
7.4383835	153	0.404762	-0.24104	-1.792956201	0.058101
7.4383835	154	0.407407	-0.23422	-1.742217423	0.054859
7.4383835	155	0.410053	-0.22741	-1.691554753	0.051715
7.4386776	156	0.412698	-0.22061	-1.641041523	0.048668
7.4407337	157	0.415344	-0.21382	-1.590977165	0.045719
7.4424927	158	0.417989	-0.20704	-1.540891071	0.042865
7.4442486	159	0.420635	-0.20027	-1.490856673	0.040108
7.4442486	160	0.42328	-0.19351	-1.440526434	0.037446
7.4442486	161	0.425926	-0.18676	-1.390255436	0.034878
7.4500796	162	0.428571	-0.18001	-1.341101778	0.032404
7.4500796	163	0.431217	-0.17328	-1.29092692	0.030025
7.4500796	164	0.433862	-0.16655	-1.240802882	0.027739
7.4500796	165	0.436508	-0.15983	-1.190738131	0.025545
7.4552985	166	0.439153	-0.15312	-1.141523297	0.023444
7.4558767	167	0.441799	-0.14641	-1.091618314	0.021436
7.4587627	168	0.444444	-0.13971	-1.042061907	0.019519
7.4587627	169	0.44709	-0.13302	-0.992142317	0.017694
7.4616404	170	0.449735	-0.12633	-0.942628665	0.015959
7.4730691	171	0.452381	-0.11965	-0.894142071	0.014316

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.4730691	172	0.455026	-0.11297	-0.844245674	0.012763
7.4787348	173	0.457672	-0.1063	-0.794994028	0.0113
7.4787348	174	0.460317	-0.09963	-0.745136323	0.009927
7.4787348	175	0.462963	-0.09297	-0.695312628	0.008644
7.4821189	176	0.465608	-0.08631	-0.645806532	0.00745
7.4843686	177	0.468254	-0.07966	-0.596199046	0.006346
7.4899709	178	0.470899	-0.07301	-0.546831917	0.00533
7.4899709	179	0.473545	-0.06636	-0.497044063	0.004404
7.4938739	180	0.47619	-0.05972	-0.44751483	0.003566
7.4955419	181	0.478836	-0.05307	-0.397823641	0.002817
7.4983159	182	0.481481	-0.04644	-0.348187213	0.002156
7.5010821	183	0.484127	-0.0398	-0.298530701	0.001584
7.5010821	184	0.486772	-0.03316	-0.248754265	0.0011
7.5049421	185	0.489418	-0.02653	-0.199088752	0.000704
7.5065918	186	0.492063	-0.0199	-0.149345119	0.000396
7.5131635	187	0.494709	-0.01326	-0.099644883	0.000176
7.5175209	188	0.497354	-0.00663	-0.049851336	4.4E-05
7.5283318	189	0.5	0	0	0
7.5323559	190	0.502646	0.006631	0.049949713	4.4E-05
7.5336937	191	0.505291	0.013263	0.099917168	0.000176
7.5336937	192	0.507937	0.019895	0.149884317	0.000396
7.538495	193	0.510582	0.026528	0.199978834	0.000704
7.5422135	194	0.513228	0.033162	0.250118281	0.0011
7.5443321	195	0.515873	0.039798	0.300251979	0.001584
7.5496092	196	0.518519	0.046435	0.350569037	0.002156
7.5574729	197	0.521164	0.053075	0.401110608	0.002817
7.5652753	198	0.52381	0.059717	0.451778737	0.003566
7.5704433	199	0.526455	0.066361	0.502384311	0.004404
7.5719884	200	0.529101	0.073009	0.5528199	0.00533
7.5794234	201	0.531746	0.079659	0.603771037	0.006346
7.5806998	202	0.534392	0.086313	0.654315371	0.00745
7.5806998	203	0.537037	0.092972	0.704792507	0.008644
7.5806998	204	0.539683	0.099634	0.755295498	0.009927
7.5857888	205	0.542328	0.106301	0.806373933	0.0113
7.5857888	206	0.544974	0.112972	0.856979819	0.012763
7.5857888	207	0.547619	0.119649	0.907628827	0.014316
7.5857888	208	0.550265	0.12633	0.95831233	0.015959
7.5883237	209	0.55291	0.133017	1.009376132	0.017694
7.6009025	210	0.555556	0.13971	1.061920219	0.019519
7.6009025	211	0.558201	0.14641	1.112851603	0.021436
7.6009025	212	0.560847	0.153116	1.163817552	0.023444
7.6009025	213	0.563492	0.159829	1.21484399	0.025545
7.6009025	214	0.566138	0.166549	1.265922274	0.027739
7.6009025	215	0.568783	0.173277	1.317061048	0.030025
7.6009025	216	0.571429	0.180012	1.368251669	0.032404
7.6026509	217	0.574074	0.186756	1.419837956	0.034878
7.603898	218	0.57672	0.193509	1.471419956	0.037446

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.603898	219	0.579365	0.20027	1.522829578	0.040108
7.60589	220	0.582011	0.20704	1.574720786	0.042865
7.60589	221	0.584656	0.21382	1.626290873	0.045719
7.6061387	222	0.587302	0.220609	1.677985006	0.048668
7.6083745	223	0.589947	0.227409	1.73021221	0.051715
7.6088706	224	0.592593	0.23422	1.782148894	0.054859
7.6108528	225	0.595238	0.241041	1.834528382	0.058101
7.6123368	226	0.597884	0.247874	1.886897991	0.061441
7.6143121	227	0.600529	0.254718	1.939499572	0.064881
7.6152983	228	0.603175	0.261573	1.991956052	0.06842
7.6157911	229	0.60582	0.268442	2.044397492	0.072061
7.6157911	230	0.608466	0.275322	2.096796628	0.075802
7.6207051	231	0.611111	0.282216	2.150686476	0.079646
7.6207051	232	0.613757	0.289124	2.203327352	0.083593
7.624619	233	0.616402	0.296045	2.257230884	0.087643
7.6255951	234	0.619048	0.30298	2.310402566	0.091797
7.6255951	235	0.621693	0.309931	2.363406654	0.096057
7.6255951	236	0.624339	0.316895	2.416514772	0.100423
7.6255951	237	0.626984	0.323876	2.469744262	0.104895
7.6255951	238	0.62963	0.330873	2.52310379	0.109477
7.6280311	239	0.632275	0.337885	2.577399126	0.114166
7.6294899	240	0.634921	0.344914	2.631521677	0.118966
7.6304613	241	0.637566	0.351961	2.685623305	0.123876
7.6304613	242	0.640212	0.359025	2.739528699	0.128899
7.6304613	243	0.642857	0.366106	2.793555541	0.134033
7.6304613	244	0.645503	0.373207	2.84773853	0.139283
7.6314317	245	0.648148	0.380326	2.902429385	0.144648
7.6319165	246	0.650794	0.387464	2.957093432	0.150128
7.6328855	247	0.653439	0.394623	3.012111642	0.155727
7.6343372	248	0.656085	0.401801	3.067485227	0.161444
7.6353039	249	0.65873	0.409	3.122837513	0.167281
7.6353039	250	0.661376	0.416221	3.177975005	0.17324
7.6353039	251	0.664021	0.423463	3.233268742	0.179321
7.6353039	252	0.666667	0.430728	3.288736086	0.185526
7.6362696	253	0.669312	0.438015	3.344800036	0.191857
7.6379574	254	0.671958	0.445325	3.401373256	0.198314
7.6401232	255	0.674603	0.45266	3.458378618	0.204901
7.6401232	256	0.677249	0.460019	3.514601895	0.211617
7.6413244	257	0.679894	0.467403	3.571577705	0.218466
7.6415644	258	0.68254	0.474813	3.628314731	0.225447
7.6415644	259	0.685185	0.482248	3.685130674	0.232563
7.6430036	260	0.687831	0.489711	3.742859904	0.239816
7.6444408	261	0.690476	0.4972	3.800818162	0.247208
7.6446801	262	0.693122	0.504718	3.858410703	0.254741
7.6449193	263	0.695767	0.512265	3.916224094	0.262415
7.6449193	264	0.698413	0.51984	3.974134006	0.270234
7.6449193	265	0.701058	0.527446	4.032278583	0.278199

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.6449193	266	0.703704	0.535083	4.090666515	0.286314
7.6449193	267	0.706349	0.54275	4.14928042	0.294578
7.6449193	268	0.708995	0.55045	4.208146371	0.302995
7.6458758	269	0.71164	0.558182	4.267789569	0.311567
7.648263	270	0.714286	0.565949	4.328526771	0.320298
7.6496926	271	0.716931	0.573749	4.389003862	0.329188
7.6496926	272	0.719577	0.581584	4.448941475	0.33824
7.6501687	273	0.722222	0.589455	4.509429311	0.347457
7.6501687	274	0.724868	0.597363	4.569927277	0.356842
7.6515956	275	0.727513	0.60531	4.631584649	0.3664
7.6520707	276	0.730159	0.613293	4.692959442	0.376128
7.6525457	277	0.732804	0.621317	4.754654881	0.386035
7.6544432	278	0.73545	0.629379	4.817549104	0.396118
7.6544432	279	0.738095	0.637484	4.879586335	0.406386
7.6544432	280	0.740741	0.64563	4.941936842	0.416838
7.6544432	281	0.743386	0.65382	5.00462673	0.42748
7.6561006	282	0.746032	0.662053	5.068744581	0.438314
7.6563372	283	0.748677	0.670333	5.132294222	0.449346
7.6565737	284	0.751323	0.678658	5.196195924	0.460577
7.6582275	285	0.753968	0.68703	5.261432241	0.47201
7.6591714	286	0.756614	0.695452	5.326585624	0.483653
7.6591714	287	0.759259	0.703922	5.391456274	0.495506
7.6638773	288	0.761905	0.712444	5.460080148	0.507576
7.6638773	289	0.76455	0.721016	5.525774809	0.519863
7.6638773	290	0.767196	0.729642	5.591887685	0.532378
7.6638773	291	0.769841	0.738323	5.658418776	0.545121
7.6685611	292	0.772487	0.747061	5.728884631	0.5581
7.6685611	293	0.775132	0.755856	5.796328197	0.571318
7.6713609	294	0.777778	0.76471	5.866366154	0.584781
7.6732231	295	0.780423	0.773623	5.936182002	0.598493
7.6732231	296	0.783069	0.7826	6.005062322	0.612462
7.6824824	297	0.785714	0.791638	6.081743739	0.62669
7.6921133	298	0.78836	0.800742	6.159397241	0.641188
7.6923415	299	0.791005	0.809914	6.230136066	0.655961
7.7007478	300	0.793651	0.819155	6.308102926	0.671014
7.7146775	301	0.796296	0.828464	6.391335708	0.686353
7.7186855	302	0.798942	0.837847	6.467077354	0.701988
7.7200179	303	0.801587	0.847303	6.541197866	0.717923
7.7248884	304	0.804233	0.856837	6.61897203	0.73417
7.7664169	305	0.806878	0.866451	6.729216513	0.750737
7.7782115	306	0.809524	0.876144	6.814829667	0.767627
7.783224	307	0.812169	0.885918	6.895300787	0.784851
7.7915228	308	0.814815	0.89578	6.979486584	0.802421
7.7956465	309	0.81746	0.905729	7.060746211	0.820346
7.8119734	310	0.820106	0.915768	7.153954827	0.838631
7.8143996	311	0.822751	0.925902	7.235368142	0.857294
7.8160138	312	0.825397	0.936129	7.316799205	0.876338

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
7.8399194	313	0.828042	0.946457	7.420143159	0.89578
7.8407065	314	0.830688	0.956886	7.502663778	0.915631
7.8407065	315	0.833333	0.96742	7.585259523	0.935902
7.8461988	316	0.835979	0.978064	7.674082881	0.956609
7.8477625	317	0.838624	0.988821	7.760031063	0.977767
7.8477625	318	0.84127	0.999689	7.84532417	0.999379
7.8555447	319	0.843915	1.010681	7.939446096	1.021475
7.8555447	320	0.846561	1.021795	8.026752818	1.044064
7.8671055	321	0.849206	1.033036	8.127002526	1.067163
7.8747391	322	0.851852	1.044409	8.224449563	1.09079
7.8785342	323	0.854497	1.055919	8.319092384	1.114965
7.8785342	324	0.857143	1.067569	8.410882249	1.139704
7.8823149	325	0.859788	1.07937	8.507935217	1.16504
7.8898338	326	0.862434	1.091321	8.610340333	1.190981
7.8898338	327	0.865079	1.103429	8.705867664	1.217555
7.8898338	328	0.867725	1.1157	8.802686633	1.244786
7.8972965	329	0.87037	1.128144	8.909288021	1.272709
7.8972965	330	0.873016	1.140763	9.008945893	1.301341
7.8995245	331	0.875661	1.153569	9.112646338	1.330721
7.9047039	332	0.878307	1.166566	9.221356083	1.360875
7.9047039	333	0.880952	1.17976	9.325654654	1.391834
7.9094895	334	0.883598	1.193166	9.437334725	1.423645
7.913521	335	0.886243	1.20679	9.549960639	1.456343
7.9193562	336	0.888889	1.220642	9.666698258	1.489967
7.9266026	337	0.891534	1.23473	9.787214084	1.524558
7.9409398	338	0.89418	1.249068	9.918775265	1.560171
7.948032	339	0.896825	1.263668	10.04367254	1.596856
7.9620673	340	0.899471	1.278543	10.17984256	1.634671
7.9759084	341	0.902116	1.293706	10.31848202	1.673676
7.9827577	342	0.904762	1.309172	10.45080405	1.713932
7.9827577	343	0.907407	1.324956	10.57680614	1.75551
7.9827577	344	0.910053	1.341082	10.70553083	1.7985
7.9895604	345	0.912698	1.357562	10.84632218	1.842974
7.9895604	346	0.915344	1.374419	10.98100607	1.889028
7.9929445	347	0.917989	1.391672	11.12356042	1.936752
7.9963172	348	0.920635	1.409358	11.26966996	1.986289
8.0063676	349	0.92328	1.427488	11.42899614	2.037723
8.0063676	350	0.925926	1.446106	11.57805354	2.091222
8.0063676	351	0.928571	1.465232	11.73118872	2.146906
8.0096954	352	0.931217	1.484914	11.89370725	2.204969
8.0096954	353	0.933862	1.505191	12.05612132	2.2656
8.0130121	354	0.936508	1.526105	12.22869644	2.328996
8.0130121	355	0.939153	1.547705	12.4017815	2.395392
8.0196128	356	0.941799	1.570056	12.59124244	2.465076
8.0228969	357	0.944444	1.593216	12.78221118	2.538339
8.0228969	358	0.94709	1.617268	12.97517458	2.615556
8.0237162	359	0.949735	1.642293	13.17729114	2.697126

Table D-50. TDS Combined Background Data Set, Shapiro-Francia Test of Shapiro-Francia Test of Normality Analysis (censored data set) (continued)

TDS (lognormal)	Count	i/(n+1)	Mi	Mi * Xi	Mi^2
8.0242075	360	0.952381	1.668391	13.38751333	2.783528
8.0261702	361	0.955026	1.695676	13.60978068	2.875316
8.0261702	362	0.957672	1.724284	13.8393946	2.973154
8.0294328	363	0.960317	1.754379	14.08666755	3.077845
8.0420564	364	0.962963	1.786157	14.36437249	3.190356
8.042378	365	0.965608	1.819844	14.635876	3.311833
8.042378	366	0.968254	1.855733	14.92450618	3.443745
8.0439844	367	0.970899	1.894177	15.23673296	3.587908
8.0481491	368	0.973545	1.93565	15.57840213	3.746742
8.0487883	369	0.97619	1.980752	15.94265455	3.923379
8.0583273	370	0.978836	2.030283	16.36068665	4.12205
8.0586437	371	0.981481	2.085353	16.80511778	4.348698
8.0677762	372	0.984127	2.14759	17.32627418	4.612142
8.0709061	373	0.986772	2.219458	17.91303798	4.925994
8.0802374	374	0.989418	2.305042	18.62528308	5.313217
8.0833286	375	0.992063	2.411834	19.49565025	5.816945
8.0955987	376	0.994709	2.556189	20.69388382	6.534104
8.1107276	377	0.997354	2.788802	22.61921163	7.777415