

Shapiro-Wilk Test of Normality
Barium Detected in Krum Complex Soils
Camp Stanley Storage Activity, Texas

| Number of Samples, n | Reverse | | | | | ln of Reverse | | | | |
|----------------------|--------------------------------|------------------------------------|-----------------------------|-----------------------|--------------------------|---|---------------------------------------|------------------------------------|-----------------------|-----------------------------|
| | Ordered Concentrations x(i) | Ordered Concentrations x(n-i+1) | Difference x(n-i+1)-x(i) | a(n-i+1) ^a | b(i) ^b | ln of Ordered Concentrations ln x(i) | Ordered Concentrations ln x(n-i+1) | Difference ln x(n-i+1)- ln x(i) | a(n-i+1) ^a | b(i) ^b |
| 1 | 34 | 133 | 99 | 0.5739 | 56.82 | 3.53 | 4.89 | 1.36 | 0.5739 | 0.78 |
| 2 | 36 | 100 | 64 | 0.3291 | 21.06 | 3.58 | 4.61 | 1.03 | 0.3291 | 0.34 |
| 3 | 43 | 100 | 57 | 0.2141 | 12.20 | 3.76 | 4.61 | 0.85 | 0.2141 | 0.18 |
| 4 | 62 | 91 | 29 | 0.1224 | 3.55 | 4.13 | 4.51 | 0.38 | 0.1224 | 0.05 |
| 5 | 78 | 91 | 13 | 0.0399 | 0.52 | 4.36 | 4.51 | 0.15 | 0.0399 | 0.01 |
| 6 | 91 | 78 | -13 | | b= 94.15 | 4.51 | 4.36 | -0.15 | | b= 1.36 |
| 7 | 91 | 62 | -29 | | | 4.51 | 4.13 | -0.38 | | |
| 8 | 100 | 43 | -57 | | W ^c = 0.933 | 4.61 | 3.76 | -0.85 | | W ^c = 0.904 |
| 9 | 100 | 36 | -64 | | W(0.05,10)= 0.842 | 4.61 | 3.58 | -1.03 | | W(0.05,10)= 0.842 |
| 10 | 133 | 34 | -99 | | Normality= Normal | 4.89 | 3.53 | -1.36 | | Normality= Lognormal |

*** Distribution is normal because of higher W value.

^a From An Analysis of Variance Test for Normality (complete samples), by S.S. Shapiro and M.B. Wilk, Biometrika, vol. 52, pp. 591-611.

^b $b(i) = [x(n-i+1) - x(i)] * a(n-i+1)$

^c $W = b*b/S*S*n$