

**Table B.3**  
**Detected Only Probability Plot Correlation Coefficient**  
**Arsenic Concentrations Detected in All Soils**  
**Camp Stanley Storage Activity, Texas**

Order(i)	Uniform Order Statistic Medians	Normal Order Statistic Medians	Mi-Mavg	(Mi-Mavg)^2	Lognormal				
					Ln of Ordered Concentrations (mg/kg)				
1	0.01	-2.27	-2.27	5.17	0.75	-1.11	1.24	2.53	
2	0.03	-1.91	-1.91	3.66	0.96	-0.91	0.83	1.74	
3	0.04	-1.70	-1.70	2.89	0.97	-0.90	0.80	1.52	
4	0.06	-1.55	-1.55	2.39	0.99	-0.87	0.76	1.35	
5	0.08	-1.42	-1.42	2.02	1.10	-0.77	0.59	1.09	
6	0.09	-1.32	-1.32	1.73	1.16	-0.70	0.49	0.92	
7	0.11	-1.22	-1.22	1.50	1.33	-0.53	0.28	0.65	
8	0.13	-1.14	-1.14	1.30	1.34	-0.53	0.28	0.61	
9	0.14	-1.06	-1.06	1.13	1.35	-0.51	0.26	0.55	
10	0.16	-0.99	-0.99	0.99	1.39	-0.48	0.23	0.48	
11	0.18	-0.93	-0.93	0.86	1.46	-0.41	0.17	0.38	
12	0.19	-0.86	-0.86	0.75	1.46	-0.41	0.17	0.35	
13	0.21	-0.81	-0.81	0.65	1.46	-0.41	0.16	0.33	
14	0.23	-0.75	-0.75	0.56	1.47	-0.39	0.15	0.30	
15	0.24	-0.70	-0.70	0.48	1.48	-0.38	0.15	0.27	Undetected
16	0.26	-0.64	-0.64	0.41	1.53	-0.34	0.12	0.22	Undetected
17	0.28	-0.59	-0.59	0.35	1.55	-0.32	0.10	0.19	Undetected
18	0.29	-0.54	-0.54	0.30	1.55	-0.32	0.10	0.17	Undetected
19	0.31	-0.50	-0.50	0.25	1.59	-0.28	0.08	0.14	Undetected
20	0.33	-0.45	-0.45	0.20	1.61	-0.26	0.07	0.12	Undetected
21	0.34	-0.41	-0.41	0.16	1.62	-0.25	0.06	0.10	Undetected
22	0.36	-0.36	-0.36	0.13	1.67	-0.20	0.04	0.07	Undetected
23	0.38	-0.32	-0.32	0.10	1.68	-0.19	0.04	0.06	
24	0.39	-0.27	-0.27	0.07	1.68	-0.18	0.03	0.05	
25	0.41	-0.23	-0.23	0.05	1.68	-0.18	0.03	0.04	
26	0.43	-0.19	-0.19	0.04	1.68	-0.18	0.03	0.03	Undetected
27	0.44	-0.15	-0.15	0.02	1.73	-0.13	0.02	0.02	
28	0.46	-0.10	-0.10	0.01	1.75	-0.12	0.01	0.01	
29	0.48	-0.06	-0.06	0.00	1.75	-0.12	0.01	0.01	
30	0.49	-0.02	-0.02	0.00	1.77	-0.09	0.01	0.00	
31	0.51	0.02	0.02	0.00	1.82	-0.04	0.00	0.00	
32	0.52	0.06	0.06	0.00	1.82	-0.04	0.00	0.00	
33	0.54	0.10	0.10	0.01	1.83	-0.03	0.00	0.00	
34	0.56	0.15	0.15	0.02	1.89	0.02	0.00	0.00	
35	0.57	0.19	0.19	0.04	1.92	0.06	0.00	0.01	
36	0.59	0.23	0.23	0.05	1.92	0.06	0.00	0.01	
37	0.61	0.27	0.27	0.07	1.93	0.06	0.00	0.02	
38	0.62	0.32	0.32	0.10	1.94	0.07	0.01	0.02	
39	0.64	0.36	0.36	0.13	1.95	0.08	0.01	0.03	
40	0.66	0.41	0.41	0.16	1.96	0.09	0.01	0.04	
41	0.67	0.45	0.45	0.20	1.96	0.10	0.01	0.04	
42	0.69	0.50	0.50	0.25	1.97	0.10	0.01	0.05	
43	0.71	0.54	0.54	0.30	1.97	0.10	0.01	0.06	
44	0.72	0.59	0.59	0.35	2.01	0.14	0.02	0.09	
45	0.74	0.64	0.64	0.41	2.05	0.19	0.04	0.12	
46	0.76	0.70	0.70	0.48	2.25	0.39	0.15	0.27	
47	0.77	0.75	0.75	0.56	2.29	0.42	0.18	0.32	
48	0.79	0.81	0.81	0.65	2.29	0.43	0.18	0.34	
49	0.81	0.86	0.86	0.75	2.30	0.43	0.19	0.37	
50	0.82	0.93	0.93	0.86	2.31	0.44	0.19	0.41	Undetected
51	0.84	0.99	0.99	0.99	2.41	0.54	0.29	0.54	
52	0.86	1.06	1.06	1.13	2.41	0.55	0.30	0.58	
53	0.87	1.14	1.14	1.30	2.45	0.59	0.35	0.67	Undetected
54	0.89	1.22	1.22	1.50	2.53	0.66	0.44	0.81	
55	0.91	1.32	1.32	1.73	2.76	0.89	0.80	1.18	
56	0.92	1.42	1.42	2.02	3.00	1.13	1.28	1.61	
57	0.94	1.55	1.55	2.39	3.00	1.13	1.28	1.75	
58	0.96	1.70	1.70	2.89	3.04	1.18	1.39	2.00	
59	0.97	1.91	1.91	3.66	3.22	1.35	1.83	2.59	
60	0.99	2.27	2.27	5.17	3.26	1.39	1.94	3.17	Undetected
M <sub>avg</sub> = -4.81097E-16					56.381				
M <sub>avg</sub> =					Sum: 18.235 31.386236				
					X <sub>avg</sub> = 1.8661				
					r = 0.978854				

**Probability Plot Correlation Coefficient<sup>a,b</sup>**

$$r = \frac{\sum_{i=1}^n (X_i - X_{avg}) * (M_i - M_{avg})}{\sqrt{\sum_{i=1}^n (X_i - X_{avg})^2 * \sum_{i=1}^n (M_i - M_{avg})^2}}$$

$M_i = \Phi^{-1}(m_i) = \text{ith Normal order statistic median}$   
 where  $\Phi^{-1} = \text{inverse of standard Normal cumulative distribution}$   
 $= f(z, 0, 1)^{-1} = \sqrt{2p} e^{z^2/2}$

$$m_i = \begin{cases} 1 - (.5)^{1/n} & \text{for } i = 1 \\ (i - .3175) / (n + .365) & \text{for } 1 < i < n \\ (.5)^{1/n} & \text{for } i = n \end{cases}$$

$M_{avg} = \text{average of } M_i$   
 $X_{avg} = \text{average of } X_i$

<sup>a</sup> The Probability Plot Correlation Coefficient Test for Normality, James J. Filliben, Technometrics, Vol. 17, No. 1, February 1975

<sup>b</sup> Statistical Training Course for Ground-Water Monitoring Data Analysis-Draft Addendum to Interim Final Guidance, EPA /530-R-93-003, 1992