APPENDIX 3

Basic statistics for petrophysical parameters groups from cluster analysis

Statistics	Pycnometry		Permeameter	Electic	Ultrasonic	NMR				CT		Hg porosimetry			XRD	Gamma spectrometry			Compression test
	Bulk density (δb)	Total porosity (Kp)	Absolute permeability (k)	Cementation factor (m)	P- and S-wave velocity ratio (Vp/Vs ratio)	Clay-bound water ($kp1$)	Capillary-bound water ($Kp2$)	Moveable water ($Kp3$)	Logarithmic T_2 mean (T_2ML)	Total porosity (Kp μ-CT)	Homogeneity parameter (J)	Effective porosity (Kp mp ef)	Average pore diameter (D av)	Swanson parameter ($S1$)	Clay content (Vc)	Potassium content (K)	Uranium content (U)	Thorium content (Th)	Compressional strength (Rc)
	[g/cm³]	[%]	[mD]	[-]	[-]	[%]	[%]	[%]	[us]	[%]	[-]	[%]	[um]	[frac/psia]	[%]	[%]	[ppm]	[ppm]	[MPa]
Model 1																			
Min	2.57	0.13	0	1.14	1.76	0.31	0.05	0.03	1.29	0.4	0.24	0.09	0.02	2.89E-14	1	1.32	2.3	7.61	26
Max	2.7	4.41	0.28	1.82	2.08	5.05	3.02	0.65	9.55	3.7	2.01	4.44	2.66	7.93E-03	41	3.08	3.91	11.32	167
Av	2.64	2.17	0.05	1.58	1.96	1.77	0.72	0.21	2.66	1.44	0.73	0.69	0.32	8.90E-04	14.66	2.12	2.97	9.41	87
St. Dev.	0.05	1.24	0.08	0.2	0.1	1.56	0.97	0.21	2.56	0.97	0.49	1.27	0.78	2.34E-03	13.89	0.93	0.69	1.53	41
Model 2																			
Min	2.56	0.42	0.01	1.27	1.62	0.66	0.12	0.04	1.12	0.4	0.29	0.13	0.03	1.41E-04	1	0.16	0.73	1.12	45
Max	2.73	2.42	0.13	1.74	1.79	3.21	1.42	0.64	9.23	1.7	1.37	0.79	1.05	1.46E-03	42	4.94	2.3	7.65	126
Av	2.66	1.25	0.03	1.52	1.72	1.19	0.62	0.23	3.77	1.11	0.64	0.33	0.37	4.12E-04	19.8	1.84	1.43	3.55	89
St. Dev.	0.06	0.68	0.04	0.18	0.06	0.83	0.46	0.21	2.77	0.52	0.38	0.21	0.41	4.42E-04	16.03	1.74	0.61	2.86	29
Model 3																			
Min	2.3	1.5	0.01	1.55	1.65	0.84	1.41	0.1	3.22	0.6	0.16	0.03	0.07	5.82E-05	1	0.14	1.43	1.77	34
Max	2.64	13.31	94.43	2.23	1.9	3.51	3.98	10.19	126.77	12.4	0.64	2.45	50.02	1.02E-03	16	1.39	3.33	9.27	227
Av	2.46	8.42	13.69	1.81	1.82	2.43	2.87	3.46	29.88	4.67	0.46	1.4	5.74	4.91E-04	7.58	0.58	1.94	5.64	87
St. Dev.	0.11	4.21	31.56	0.21	0.09	1.11	1.11	4.54	45.1	3.68	0.15	0.8	16.6	3.64E-04	5.52	0.56	0.93	3.49	68

Min – minimum value, Max – maximum value, Av – average value, St. Dev. – standard deviation, others as in Appendix 2