

Table S1. Quantitative EDS analysis result of ankerite grains in ankerite concretions

Points	C (wt%)	O (wt%)	Mg (wt%)	Ca (wt%)	Mn (wt%)	Fe (wt%)	Total	Mn/Fe
No. 001	12.41	49.64	8.89	20.60	0.98	7.33	99.85	0.13
No. 002	12.13	48.53	8.62	20.02	1.10	7.36	97.77	0.15
No. 003	11.97	47.87	8.35	19.88	1.08	7.43	96.57	0.15
No. 004	12.16	48.63	8.39	20.45	1.02	7.49	98.14	0.14
No. 005	11.86	47.45	8.17	19.75	0.97	7.66	95.87	0.13
No. 006	12.04	48.15	8.37	19.80	1.24	7.66	97.25	0.16
No. 007	12.14	48.55	8.18	20.55	1.07	7.69	98.17	0.14
No. 008	12.27	49.08	8.18	20.98	1.09	7.69	99.29	0.14
No. 009	11.90	47.59	7.93	20.17	1.00	7.76	96.35	0.13
No. 010	12.18	48.72	8.40	20.38	0.89	7.80	98.37	0.11
No. 011	11.79	47.17	8.06	19.52	1.07	7.81	95.43	0.14
No. 012	12.00	48.00	8.21	19.88	1.18	7.81	97.08	0.15
No. 013	12.28	49.11	8.77	20.06	0.92	7.81	98.95	0.12
No. 014	12.25	49.00	8.41	20.59	0.88	7.82	98.95	0.11
No. 015	12.36	49.42	8.58	20.53	1.03	7.85	99.77	0.13
No. 016	11.97	47.87	8.18	19.70	1.25	7.91	96.88	0.16
No. 017	12.63	50.53	8.69	21.31	0.90	7.92	101.98	0.11
No. 018	11.95	47.79	8.16	19.67	1.17	7.99	96.73	0.15
No. 019	12.21	48.83	8.39	20.11	1.22	8.00	98.76	0.15
No. 020	12.29	49.17	8.29	20.49	1.29	8.02	99.55	0.16
No. 021	12.13	48.51	8.20	20.12	1.24	8.03	98.23	0.15
No. 022	11.82	47.27	7.94	19.61	1.11	8.04	95.79	0.14
No. 023	12.05	48.22	7.83	20.59	1.10	8.04	97.83	0.14
No. 024	11.84	47.35	8.30	19.00	1.18	8.07	95.73	0.15
No. 025	12.53	50.12	8.63	20.71	1.25	8.07	101.31	0.15
No. 026	11.74	46.97	7.89	19.58	0.88	8.08	95.14	0.11
No. 027	11.85	47.38	7.98	19.60	1.12	8.08	96.01	0.14
No. 028	12.20	48.79	8.07	20.26	1.62	8.08	99.02	0.20
No. 029	12.16	48.63	8.10	20.40	1.16	8.09	98.53	0.14
No. 030	12.47	49.89	8.39	21.08	1.01	8.09	100.93	0.12
No. 031	12.20	48.82	8.37	20.06	1.22	8.10	98.77	0.15
No. 032	12.21	48.85	8.16	20.72	0.83	8.10	98.87	0.10
No. 033	12.30	49.19	8.49	20.34	0.98	8.10	99.39	0.12
No. 034	12.26	49.04	8.02	20.94	1.07	8.10	99.44	0.13
No. 035	12.49	49.97	8.52	20.51	1.58	8.10	101.18	0.20
No. 036	12.11	48.43	8.24	20.03	1.05	8.16	98.01	0.13
No. 037	12.28	49.10	8.40	20.32	1.05	8.17	99.32	0.13
No. 038	12.21	48.83	8.09	20.58	1.08	8.18	98.97	0.13
No. 039	12.52	50.09	8.48	20.85	1.26	8.18	101.38	0.15
No. 040	12.04	48.15	8.30	19.67	1.06	8.19	97.41	0.13
No. 041	12.23	48.94	8.31	20.12	1.29	8.22	99.11	0.16
No. 042	12.44	49.78	8.33	20.67	1.45	8.22	100.89	0.18
No. 043	11.76	47.03	7.86	19.51	0.97	8.23	95.36	0.12
No. 044	12.28	49.12	8.30	20.33	1.22	8.24	99.49	0.15
No. 045	12.31	49.24	8.40	20.34	1.09	8.26	99.64	0.13
No. 046	12.26	49.04	8.14	20.49	1.24	8.27	99.44	0.15
No. 047	12.26	49.04	8.14	20.49	1.24	8.27	99.44	0.15

No. 048	12.61	50.45	8.52	21.08	1.17	8.27	102.10	0.14
No. 049	12.04	48.15	7.97	20.13	1.09	8.29	97.67	0.13
No. 050	12.15	48.60	8.05	20.25	1.25	8.29	98.59	0.15
No. 051	12.33	49.33	8.46	20.24	1.16	8.30	99.83	0.14
No. 052	12.15	48.60	8.23	19.95	1.23	8.31	98.47	0.15
No. 053	12.34	49.36	8.40	20.19	1.37	8.32	99.97	0.16
No. 054	12.04	48.18	8.18	19.70	1.18	8.34	97.62	0.14
No. 055	12.13	48.51	8.30	19.88	1.04	8.34	98.20	0.12
No. 056	12.42	49.68	8.41	20.49	1.29	8.34	100.63	0.15
No. 057	12.34	49.35	8.48	20.41	0.85	8.35	99.78	0.10
No. 058	12.02	48.07	8.10	19.67	1.26	8.36	97.48	0.15
No. 059	12.33	49.32	8.18	20.67	1.14	8.36	100.01	0.14
No. 060	12.30	49.19	8.27	20.46	1.06	8.37	99.65	0.13
No. 061	12.41	49.63	8.59	20.21	1.15	8.39	100.37	0.14
No. 062	12.45	49.78	8.40	20.62	1.19	8.40	100.84	0.14
No. 063	12.19	48.77	8.08	20.36	1.11	8.41	98.92	0.13
No. 064	12.29	49.16	8.03	20.51	1.47	8.41	99.87	0.17
No. 065	12.44	49.78	8.46	20.45	1.27	8.41	100.81	0.15
No. 066	12.51	50.03	8.20	21.03	1.35	8.42	101.54	0.16
No. 067	12.31	49.23	8.26	20.13	1.52	8.43	99.88	0.18
No. 068	12.37	49.49	8.30	20.40	1.35	8.44	100.36	0.16
No. 069	12.27	49.08	8.14	20.44	1.17	8.46	99.56	0.14
No. 070	12.41	49.64	8.52	20.42	0.97	8.46	100.42	0.11
No. 071	12.49	49.97	8.50	20.56	1.20	8.46	101.18	0.14
No. 072	12.46	49.84	8.35	20.84	0.99	8.48	100.96	0.12
No. 073	11.79	47.14	7.83	19.38	1.05	8.53	95.72	0.12
No. 074	12.52	50.09	8.28	21.03	1.13	8.53	101.59	0.13
No. 075	12.32	49.30	8.09	20.74	1.04	8.54	100.03	0.12
No. 076	12.57	50.30	8.29	21.06	1.29	8.54	102.05	0.15
No. 077	12.64	50.56	8.55	20.82	1.32	8.54	102.43	0.15
No. 078	12.11	48.44	8.10	19.84	1.27	8.55	98.32	0.15
No. 079	12.55	50.19	8.63	20.42	1.26	8.55	101.60	0.15
No. 080	12.10	48.40	8.10	19.98	0.97	8.61	98.16	0.11
No. 081	12.35	49.41	8.33	20.19	1.29	8.63	100.20	0.15
No. 082	12.28	49.12	8.17	20.23	1.25	8.65	99.70	0.14
No. 083	12.59	50.36	8.46	20.85	1.15	8.65	102.06	0.13
No. 084	12.23	48.94	8.30	19.99	1.02	8.70	99.18	0.12
No. 085	12.43	49.73	8.43	20.37	1.10	8.71	100.77	0.13
No. 086	12.53	50.11	8.58	20.48	1.02	8.73	101.45	0.12
No. 087	12.21	48.85	7.87	20.40	1.24	8.81	99.39	0.14
No. 088	12.42	49.68	8.15	20.67	1.09	8.90	100.91	0.12
No. 089	12.50	50.01	8.36	20.54	1.16	8.90	101.47	0.13
No. 090	12.22	48.89	8.09	20.02	1.18	8.93	99.33	0.13
No. 091	12.31	49.25	8.04	20.21	1.32	9.06	100.19	0.15
No. 092	12.50	49.99	8.63	21.66	0.97	6.87	100.61	0.14
No. 093	12.36	49.44	8.72	21.02	0.96	6.93	99.43	0.14
No. 094	12.51	50.05	8.66	21.57	0.93	7.05	100.78	0.13
No. 095	12.48	49.93	8.30	21.96	0.85	7.28	100.81	0.12
No. 096	12.53	50.12	8.80	21.18	0.94	7.33	100.90	0.13
No. 097	12.24	48.95	8.01	21.24	1.15	7.51	99.09	0.15

No. 098	12.23	48.90	8.12	21.05	1.11	7.51	98.91	0.15
No. 099	12.28	49.11	8.61	20.41	0.95	7.66	99.01	0.12
No. 100	12.29	49.18	8.29	20.95	1.00	7.69	99.40	0.13
No. 101	12.29	49.16	8.34	20.65	1.26	7.70	99.40	0.16
No. 102	12.30	49.19	8.84	19.90	1.17	7.71	99.11	0.15
No. 103	12.32	49.30	8.33	20.79	1.16	7.79	99.69	0.15
No. 104	12.35	49.39	8.41	20.50	1.43	7.85	99.93	0.18
No. 105	12.20	48.81	7.79	21.24	1.08	7.93	99.05	0.14
No. 106	12.31	49.23	8.69	20.11	1.05	7.93	99.31	0.13
No. 107	12.37	49.47	8.71	20.33	0.94	7.97	99.78	0.12
No. 108	12.32	49.26	8.77	19.90	1.11	8.03	99.38	0.14
No. 109	12.17	48.66	8.13	20.23	1.40	8.05	98.65	0.17
No. 110	12.33	49.32	8.32	20.41	1.43	8.11	99.92	0.18
No. 111	12.10	48.41	8.00	20.46	1.01	8.14	98.11	0.12
No. 112	12.32	49.30	8.42	20.29	1.26	8.18	99.77	0.15
No. 113	12.28	49.13	8.69	20.02	0.80	8.20	99.12	0.10
No. 114	12.25	49.01	7.85	20.73	1.61	8.20	99.67	0.20
No. 115	12.30	49.21	8.34	20.26	1.34	8.21	99.67	0.16
No. 116	12.42	49.68	8.55	20.45	1.13	8.23	100.47	0.14
No. 117	12.28	49.11	8.09	20.61	1.31	8.24	99.63	0.16
No. 118	12.42	49.68	8.52	20.36	1.29	8.27	100.52	0.16
No. 119	12.28	49.11	8.36	20.18	1.20	8.31	99.43	0.14
No. 120	12.31	49.24	8.32	20.03	1.44	8.53	99.86	0.17
No. 121	12.25	49.01	7.98	20.41	1.42	8.54	99.62	0.17
No. 122	12.21	48.86	8.16	19.89	1.46	8.63	99.21	0.17
Average	12.26	49.05	8.30	20.38	1.15	8.14	99.29	0.14
SD	0.20	0.78	0.24	0.48	0.17	0.41	1.58	0.02