



Th mg/kg	Ti %	V mg/kg	Y mg/kg	Zn mg/kg	S <sub>total</sub> %	S <sub>SO4</sub> %	S <sub>acid-volitic</sub> %	S <sub>disulfide</sub> %	S <sub>organic</sub> %	δ <sup>34</sup> S <sub>SO4</sub> ‰ (CDT)	δ <sup>34</sup> S <sub>acid-volitic</sub> ‰ (CDT)	δ <sup>34</sup> S <sub>disulfide</sub> ‰ (CDT)	δ <sup>34</sup> S <sub>organic</sub> ‰ (CDT)	C <sub>carbonate</sub> %	δ <sup>13</sup> C <sub>calcite</sub> ‰ (PDB)	δ <sup>18</sup> O <sub>calcite</sub> ‰ (PDB)	δ <sup>18</sup> O <sub>calcite</sub> ‰ (SMOW) <sup>2</sup>	δ <sup>13</sup> C <sub>dolomite</sub> ‰ (PDB)	δ <sup>18</sup> O <sub>dolomite</sub> ‰ (PDB)	δ <sup>18</sup> O <sub>dolomite</sub> ‰ (SMOW) <sup>2</sup>	δ <sup>13</sup> C <sub>water soluble</sub> ‰ (PDB)	δ <sup>18</sup> O <sub>water soluble</sub> ‰ (PDB)	δ <sup>18</sup> O <sub>water soluble</sub> ‰ (SMOW) <sup>2</sup>
6	0.20	57	13	55	1.8	0.15	0.02	1.40	0.02	52.1	insuff	23.8	insuff	2.1	1.3	-7.3	23.3	1.5	-6.9	23.8	-14.0	-19.0	11.2
<4	0.07	51	5	25	1.5	0.12	0.01	1.10	0.15	22.2	insuff	11.8	19.4	5.1	3.2	-5.0	25.7	7.4	-7.5	23.1	-2.4	-23.1	7.0
15	0.17	65	41	43	0.56	0.03	0.01	0.36	0.20	13.0	insuff	5.4	11.3	4.4	9.8	-8.4	22.2	10.1	-3.0	27.8	-16.7	-12.0	18.5
6	0.18	75	7	64	1.2	0.05	0.01	0.65	0.26	insuff	insuff	32.5	37.7	5.6	3.3	-1.3	29.5	4.3	-0.6	30.3	-24.4	-22.7	7.5
<4	0.11	63	7	31	0.79	0.16	0.01	0.27	0.26	25.5	insuff	26.4	15.0	7.2	7.7	-2.5	28.3	8.6	-2.3	28.5	-9.7	-19.1	11.1
<4	0.05	7	13	44	1.2	0.34	0.01	0.65	0.14	2.9	insuff	3.9	13.0	0.2	-3.0	-9.9	20.6	-1.5	-4.0	26.7	-28.8	-19.3	11.0
8	0.07	75	9	32	1.1	0.04	0.01	0.87	0.12	19.0	insuff	19.7	16.7	7.7	5.4	-2.9	27.9	5.7	-3.1	27.7	-20.8	-16.3	14.0
<4	0.13	55	10	60	0.61	0.01	0.34	0.17	0.03	insuff	27.4	27.7	20.9	6.2	3.2	-6.3	24.4	4.0	-1.7	29.1	-0.7	-11.9	18.6
<4	0.05	35	4	28	0.68	0.01	0.01	0.38	0.18	insuff	insuff	37.2	29.1	7.9	1.5	-4.7	26.0	1.8	-1.1	29.7	-2.2	-12.1	18.3
<4	0.07	49	6	38	0.75	0.01	0.01	0.09	0.02	insuff	insuff	23.2	insuff	6.9	1.4	-4.5	26.2	2.2	-1.7	29.1	-2.7	-11.8	18.7
<4	0.08	42	5	44	0.60	0.01	0.01	0.51	0.04	insuff	insuff	23.5	28.1	7.2	0.9	-5.6	25.1	1.8	-2.4	28.4	-2.9	-11.6	18.9
v	0.12	49	8	47	0.75	0.01	0.01	0.61	0.03	insuff	insuff	31.0	insuff	7.3	1.1	-5.6	25.1	2.3	-2.1	28.7	-2.0	-10.5	20.0
6.5	0.11	43	16	37	1.2	0.01	0.01	1.00	0.06	insuff	insuff	39.3	insuff	7.2	1.2	-6.6	24.1	2.5	-3.5	27.2	-1.7	-10.5	20.0
<4	0.03	22	4	6	0.02	0.01	0.01	0.01	0.02	insuff	insuff	17.8	insuff	9.9	1.5	-6.6	24.1	2.7	-2.7	28.1	-1.3	-10.8	19.7
4	0.02	12	4	4	0.02	0.01	0.01	0.01	0.01	insuff	insuff	insuff	insuff	11	2.2	-6.5	24.2	2.9	-2.1	28.7	-0.4	-10.6	20.0
<4	0.30	76	6	89	0.32	0.01	0.07	0.18	0.01	insuff	25.7	23.4	insuff	1.2	0.8	-5.3	25.4	1.3	-2.8	28.0	-4.7	-11.0	19.5
10	0.15	61	15	53	0.18	0.01	0.01	0.17	0.01	insuff	insuff	24.3	insuff	5.4	1.1	-4.4	26.3	1.9	-2.0	28.8	-1.9	-8.4	22.2
<4	0.12	55	8	28	0.02	0.01	0.01	0.01	0.01	insuff	insuff	insuff	insuff	5.7	1.5	-2.9	27.8	2.2	-1.7	29.1	-2.8	-10.0	20.6
<4	0.06	27	4	24	0.25	0.01	0.01	0.19	0.04	insuff	insuff	22.2	25.2	7.7	1.6	-3.1	27.7	2.1	-2.0	28.8	-2.3	-9.0	21.6
4	0.32	91	6	100	0.02	0.01	0.01	0.01	0.01	insuff	insuff	insuff	insuff	1.1	-0.9	-6.4	24.3	-0.9	-4.4	26.3	insuff	insuff	
5	0.09	38	12	32	0.97	0.01	0.01	0.83	0.04	insuff	insuff	27.6	20.6	7.6	2.7	-6.1	24.6	3.6	-2.7	28.1	-0.2	-13.5	17.0
<4	0.05	17	6	13	0.51	0.01	0.01	0.39	0.01	insuff	insuff	32.7	insuff	9.1	3.4	-7.7	22.9	4.3	-3.9	26.9	1.2	-15.6	14.8
7	0.10	44	10	34	0.32	0.01	0.01	0.22	0.10	insuff	insuff	33.8	30.6	7.1	3.0	-1.9	28.9	3.1	-2.2	28.6	-6.0	-16.5	13.9
10	0.09	49	19	28	0.02	0.02	0.01	0.01	0.01	insuff	insuff	insuff	insuff	8.1	1.0	-7.0	23.6	3.7	-2.4	28.4	-1.9	-9.1	21.5
9	0.30	85	25	82	0.97	0.08	0.01	0.77	0.01	33.8	insuff	28.7	insuff	2.3	-0.9	-9.9	20.7	-0.4	-4.1	26.6	-3.3	-16.8	13.6
9	0.10	32	6	20	0.26	0.02	0.01	0.21	0.01	insuff	insuff	8.1	insuff	7.6	-0.4	-5.1	25.6	0.5	-2.0	28.8	-1.3	-14.6	15.8
38	0.14	47	7	36	0.13	0.01	0.01	0.10	0.03	insuff	insuff	14.8	20.1	4.7	-0.9	-8.3	22.3	-0.5	-7.8	22.8	-2.8	-17.7	12.6
28	0.16	54	16	51	0.86	0.08	0.01	0.56	0.12	insuff	insuff	33.8	insuff	6.0	-0.1	-7.2	23.5	1.3	-2.2	28.6	-3.1	-13.0	17.4
14	0.23	75	20	74	8.5	0.06	0.01	7.40	0.01	18.7	insuff	20.7	insuff	2.7	1.8	-7.4	23.2	2.5	-4.9	25.9	-1.8	-14.8	15.6
7	0.23	110	17	70	0.97	0.02	0.80	0.01	0.02	17.2	17.6	16.4	40.9	4.5	2.3	-7.1	23.6	3.2	-4.6	26.1	-2.7	-15.9	14.5
10	0.19	70	15	63	1.1	0.01	0.02	0.87	0.16	insuff	insuff	20.9	22.7	2.3	4.0	-5.1	25.6	4.0	-5.4	25.3	insuff	insuff	
10	0.16	95	13	55	1.7	0.01	0.01	1.40	0.13	insuff	insuff	18.0	21.6	3.2	9.2	-3.7	27.0	9.4	-2.7	28.1	insuff	insuff	
10	0.18	84	17	70	2.2	0.06	0.01	1.90	0.30	11.9	11.9	5.5	16.1	3.9	2.0	-8.5	22.1	1.8	-10.1	20.4	-4.6	-16.9	13.4
14	0.14	74	12	46	1.5	0.01	0.01	1.10	0.23	insuff	insuff	22.3	21.8	7.0	8.7	-1.0	29.8	9.1	-0.8	30.0	insuff	insuff	
7	0.08	28	7	31	2.8	0.07	0.01	1.70	0.15	10.0	10.0	7.8	7.5	7.4	-3.7	-7.5	23.1	-3.9	-8.5	22.1	-5.2	-10.0	20.5