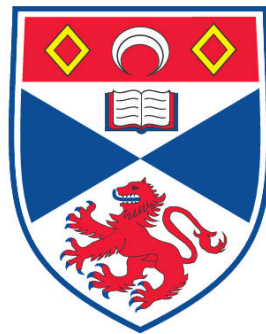


**PETROLOGY AND PETROGENESIS OF THE MOTZFELDT
TA-MINERALISATION, GARDAR PROVINCE,
SOUTH GREENLAND**

Appendix F

Jamie Alan McCreath

**A Thesis Submitted for the Degree of PhD
at the
University of St. Andrews**



2009

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Appendix F: Fluid inclusion microthermometric data

Analytical instrumentation, analysis procedure and standardisation can be found in appendix B.6.

P/S – primary or secondary inclusion determined from textural relations; n – number of inclusions analysed in sample; $T_{(me)}$ – eutectic (first) melting; $T_{(m)} H_2O$ – final melting of ice; $T_{(h)} H_2O$ – total homogenisation temperature to liquid. Fluid type: L-V – liquid-vapour two-phase aqueous inclusion; L-V-S – liquid-vapour-solid three-phase aqueous inclusion; salinities have been calculated using the equation of Bodnar (1993).

Those inclusions which have no homogenisation temperature and calculated salinity decrepitated before the homogenisation temperature was reached.

Motzfeldt Sø Formation

Sample	Mineral	Type	P/S	T _(mc) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-48	Fluorite	L-V	p	ca. -40	-1.79	103.74	3.05
GJM06-48	Fluorite	L-V	S	ca. -41	-1.40	182.56	2.40
GJM06-48	Fluorite	L-V	S	ca. -42	-0.70	96.06	1.22
GJM06-48	Fluorite	L-V	S	ca. -30	-1.79	104.13	3.05
GJM06-48	Fluorite	L-V-S	S	-	-3.59	258.59	5.84
GJM06-48	Fluorite	L-V	S	-	-3.59	258.59	5.84
GJM06-48	Fluorite	L-V	S	-	-4.19	-	-
GJM06-48	Fluorite	L-V	S	-	-4.19	250.52	6.72
GJM06-48	Fluorite	L-V	S	ca. -25	-3.49	122.67	5.69
GJM06-48	Fluorite	L-V	S	ca. -25	-3.89	139.51	6.28
GJM06-48	Fluorite	L-V	S	ca. -25	-3.89	134.93	6.28
GJM06-48	Fluorite	L-V	S	ca. -25	-6.48	194.02	9.83
GJM06-48	Fluorite	L-V	S	ca. -25	-4.58	195.21	7.28
GJM06-48	Fluorite	L-V	S	ca. -25	-4.58	185.65	7.28
GJM06-48	Fluorite	L-V	S	ca. -25	-5.28	206.08	8.25
GJM06-48	Fluorite	L-V	S	ca. -25	-3.99	129.74	6.43
GJM06-48	Fluorite	L-V	S	ca. -25	-4.48	131.54	7.14
GJM06-48	Fluorite	L-V	P/S	ca. -30	-5.38	267.46	8.39
GJM06-48	Fluorite	L-V	P/S	ca. -25	-4.98	-	-
GJM06-48	Fluorite	L-V	S	ca. -25	-8.47	127.85	12.24
GJM06-48	Fluorite	L-V	S	ca. -25	-2.79	119.48	4.63
GJM06-48	Fluorite	L-V	S	ca. -35	-5.68	108.42	8.79
GJM06-48	Fluorite	L-V	S	ca. -35	-6.28	109.02	9.57
GJM06-48	Fluorite	L-V	S	ca. -15	-3.59	135.72	5.84
GJM06-48	Fluorite	L-V	S	ca. -15	-3.79	133.13	6.14
GJM06-48	Fluorite	L-V	S	ca. -15	-3.59	135.82	5.84
GJM06-48	Fluorite	L-V	S	ca. -40	-16.04	255.90	19.48
GJM06-48	Fluorite	L-V	S	ca. -40	-16.64	-	-
GJM06-48	Fluorite	L-V-S	S	ca. -40	-15.94	355.35	19.40
GJM06-48	Fluorite	L-V-S	S	ca. -40	-16.34	366.81	19.72
GJM06-48	Fluorite	L-V-S	S	ca. -40	-16.74	262.68	20.02
GJM06-48	Fluorite	L-V-S	S	ca. -40	-17.04	-	-
GJM06-48	Fluorite	L-V-S	S	ca. -40	-19.63	254.41	22.12
GJM06-48	Fluorite	L-V-S	S	ca. -40	-15.65	284.30	19.16
GJM06-48	Fluorite	L-V	S	ca. -15	-3.52	177.95	5.75
GJM06-48	Fluorite	L-V	S	ca. -15	-3.32	171.51	5.45
GJM06-48	Fluorite	L-V	S	ca. -15	-3.42	196.69	5.60
GJM06-48	Fluorite	L-V	S	ca. -15	-3.52	162.95	5.75
GJM06-48	Fluorite	L-V	S	ca. -15	-3.32	181.48	5.45

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-48	Fluorite	L-V	S	ca. -20	-2.22	80.27	3.73
GJM06-48	Fluorite	L-V	S	ca. -10	-1.31	88.93	2.26
GJM06-48	Fluorite	L-V	S	ca. -10	-5.14	122.77	8.05
GJM06-48	Fluorite	L-V	S	ca. -10	-5.34	111.49	8.33
GJM06-48	Fluorite	L-V	S	ca. -35	-4.13	-	-
GJM06-48	Fluorite	L-V	S	ca. -35	-4.13	127.30	6.64
GJM06-48	Fluorite	L-V	S	ca. -35	-4.23	134.55	6.78
GJM06-48	Fluorite	L-V	S	ca. -35	-4.23	133.14	6.78
GJM06-48	Fluorite	L-V	S	ca. -35	-5.04	-	-

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-68	Fluorite	L-V	S	ca. -37	-13.60	-	-
GJM06-68	Fluorite	L-V	S	ca. -37	-13.60	120.40	17.43
GJM06-68	Fluorite	L-V	S	ca. -34	-13.70	144.20	17.52
GJM06-68	Fluorite	L-V	S	ca. -34	-14.10	-	-
GJM06-68	Fluorite	L-V	S	ca. -34	-14.00	-	-
GJM06-68	Fluorite	L-V	S	ca. 51	-23.00	101.40	24.34
GJM06-68	Fluorite	L-V	S	ca. -8	-0.60	212.00	1.05
GJM06-68	Fluorite	L-V	S	ca. -31	-10.10	-	-
GJM06-68	Fluorite	L-V	S	ca. -31	-10.30	114.70	14.25
GJM06-68	Fluorite	L-V	S	ca. -38	-12.90	138.20	16.80
GJM06-68	Fluorite	L-V	S	ca. -38	-13.80	128.10	17.61
GJM06-68	Fluorite	L-V	S	ca. -38	-5.10	128.10	8.00
GJM06-68	Fluorite	L-V	S	ca. -38	-13.20	136.60	17.08
GJM06-68	Fluorite	L-V	S	ca. -38	-3.50	143.10	5.71
GJM06-68	Fluorite	L-V	S	ca. -38	-3.50	-	-
GJM06-68	Fluorite	L-V	S	ca. -38	-13.50	183.50	17.34
GJM06-68	Fluorite	L-V	S	ca. -37	-4.60	-	-
GJM06-68	Fluorite	L-V	S	ca. -28	-14.50	128.50	18.22
GJM06-68	Fluorite	L-V	S	ca. -28	-14.10	134.30	17.87
GJM06-68	Fluorite	L-V	S	ca. -28	-14.70	129.90	18.38
GJM06-68	Fluorite	L-V	S	ca. -28	-14.40	129.90	18.13
GJM06-68	Fluorite	L-V	S	ca. -28	-14.40	128.00	18.13
GJM06-68	Fluorite	L-V	S	ca. -28	-14.20	128.60	17.96
GJM06-68	Fluorite	L-V	S	-	-2.89	-	-
GJM06-68	Fluorite	L-V	S	-	-2.59	237.07	4.32
GJM06-68	Fluorite	L-V	S	-	-2.89	232.08	4.79
GJM06-68	Fluorite	L-V	S	-	-2.69	234.08	4.48
GJM06-68	Fluorite	L-V	S	ca. -38	-13.95	136.72	17.74
GJM06-68	Fluorite	L-V	S	ca. -38	-9.67	136.82	13.58
GJM06-68	Fluorite	L-V	S	ca. -38	-14.15	110.71	17.92
GJM06-68	Fluorite	L-V	S	ca. -38	-6.48	172.39	9.83
GJM06-68	Fluorite	L-V	S	ca. -32	-13.95	-	-
GJM06-68	Fluorite	L-V	S	ca. -32	-9.67	114.50	13.58
GJM06-68	Fluorite	L-V	S	ca. -32	-12.16	113.80	16.11
GJM06-68	Fluorite	L-V	S	ca. -27	-9.07	143.70	12.92
GJM06-68	Fluorite	L-V	S	ca. -27	-9.07	141.80	12.92
GJM06-68	Fluorite	L-V	S	ca. -27	-9.47	-	-
GJM06-68	Fluorite	L-V	S	ca. -27	-9.07	143.80	12.92
GJM06-68	Fluorite	L-V	S	ca. -27	-9.17	143.80	13.03
GJM06-68	Fluorite	L-V	S	ca. -28	-9.07	137.62	12.92
GJM06-68	Fluorite	L-V	S	ca. -30	-9.17	143.40	13.03
GJM06-68	Fluorite	L-V	S	ca. -30	-9.17	144.99	13.03

Sample	Mineral	Type	p/s	T _(m) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-68	Fluorite	L-V	S	ca. -30	-9.17	144.89	13.03
GJM06-68	Fluorite	L-V	S	ca. -30	-9.17	137.52	13.03
GJM06-68	Fluorite	L-V	S	ca. -30	-9.67	143.40	13.58
GJM06-68	Fluorite	L-V	S	ca. -30	-9.67	144.39	13.58
GJM06-68	Fluorite	L-V	S	-	-12.46	-	-
GJM06-68	Fluorite	L-V	S	-	-12.46	121.67	16.39
GJM06-68	Fluorite	L-V	S	-	-14.75	135.52	18.42
GJM06-68	Fluorite	L-V	S	-	-14.75	124.16	18.42
GJM06-68	Fluorite	L-V	S	-	-14.85	135.13	18.51
GJM06-68	Fluorite	L-V	S	-	-1.40	121.57	2.40
GJM06-68	Fluorite	L-V	S	-	-13.65	-	-
GJM06-68	Fluorite	L-V	S	-	-13.15	98.85	17.03
GJM06-68	Fluorite	L-V	S	-	-13.15	92.67	17.03
GJM06-68	Fluorite	L-V	S	-	-13.25	92.67	17.12
GJM06-68	Fluorite	L-V	S	-	-12.16	100.05	16.11
GJM06-68	Fluorite	L-V	S	-	-12.16	105.63	16.11
GJM06-68	Fluorite	L-V	S	-	-12.16	116.79	16.11
GJM06-68	Fluorite	L-V	S	-	-12.16	114.40	16.11
GJM06-68	Fluorite	L-V-S	S	-	-1.59	213.75	2.73
GJM06-68	Fluorite	L-V-S	S	-	-1.59	215.64	2.73
GJM06-68	Fluorite	L-V-S	S	-	-1.69	191.13	0.00
GJM06-68	Fluorite	L-V-S	S	-	-1.69	188.34	2.89
GJM06-68	Fluorite	L-V	S	ca. -26	-12.36	146.49	16.30
GJM06-68	Fluorite	L-V	S	ca. -26	-14.45	140.31	18.17
GJM06-68	Fluorite	L-V	S	ca. -26	-14.45	144.69	18.17
GJM06-68	Fluorite	L-V	S	ca. -26	-14.45	140.31	18.17
GJM06-68	Fluorite	L-V	S	ca. -26	-14.05	140.31	17.83
GJM06-68	Fluorite	L-V	S	ca. -26	-14.45	129.84	18.17
GJM06-68	Quartz	L-V	P	ca. -35	-13.95	179.17	17.74
GJM06-68	Quartz	L-V	P	ca. -35	-14.05	106.73	17.83
GJM06-68	Quartz	L-V	P	-	-3.89	-	-
GJM06-68	Quartz	L-V	P	-	-7.67	118.78	11.31
GJM06-68	Quartz	L-V	P	-	-15.94	-	-
GJM06-68	Quartz	L-V	P	-	-3.29	178.27	5.40
GJM06-68	Quartz	L-V	P	-	-4.19	178.27	6.72
GJM06-68	Quartz	L-V	P	ca. -29	-11.46	159.34	15.43
GJM06-68	Quartz	L-V	P	ca. -29	-11.26	160.14	15.23
GJM06-68	Quartz	L-V	P	ca. -20	-4.68	-	-
GJM06-68	Quartz	L-V	P	ca. -20	-4.58	209.46	7.28
GJM06-68	Quartz	L-V	P	ca. -20	-4.68	212.55	7.42
GJM06-68	Quartz	L-V	P	ca. -30	-12.16	149.97	16.11

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-68	Fluorite	L-V	S	ca. -27	-12.66	163.82	16.58
GJM06-68	Fluorite	L-V	S	ca. -27	-12.46	163.82	16.39
GJM06-68	Fluorite	L-V	S	ca. -27	-12.56	165.42	16.48
GJM06-68	Fluorite	L-V	S	ca. -27	-12.46	164.02	16.39
GJM06-68	Fluorite	L-V	S	ca. -27	-13.65	-	-
GJM06-68	Fluorite	L-V	S	ca. -27	-12.26	165.12	16.20
GJM06-68	Fluorite	L-V	S	ca. -27	-12.36	-	-
GJM06-68	Fluorite	L-V	S	ca. -27	-12.36	-	-
GJM06-68	Quartz	L-V	P	-	-3.69	219.03	5.99
GJM06-68	Quartz	L-V	P	-	-3.69	-	-
GJM06-68	Quartz	L-V	P	-	-2.19	-	-
GJM06-68	Quartz	L-V	P	-	-4.38	234.08	7.00

Sample	Mineral	Type	p/s	T _(m) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-69	Fluorite	L-V	P	ca. -27	-7.89	-	-
GJM06-69	Fluorite	L-V	S	ca. -40	-8.09	134.31	11.80
GJM06-69	Fluorite	L-V	S	ca. -40	-8.18	131.55	11.91
GJM06-69	Fluorite	L-V	P	ca. -49	-10.85	141.41	14.82
GJM06-69	Fluorite	L-V	P	ca. -37	-9.96	153.34	13.89
GJM06-69	Fluorite	L-V	S	ca. -29	3.25	-	-
GJM06-69	Fluorite	L-V	S	ca. -29	0.30	-	-
GJM06-69	Fluorite	L-V	P	ca. -46	-12.13	-	-
GJM06-69	Fluorite	L-V	P	ca. -54	-8.68	-	-
GJM06-69	Fluorite	L-V	P	ca. -32	-10.75	-	-
GJM06-69	Fluorite	L-V	P	ca. -38	-7.59	-	-
GJM06-69	Fluorite	L-V	P	ca. -28	-1.18	-	-
GJM06-69	Fluorite	L-V	P	ca. -28	-1.97	-	-
GJM06-69	Fluorite	L-V	P	ca. -54	-14.20	-	-
GJM06-69	Fluorite	L-V	P	ca. -52.6	-5.82	-	-
GJM06-69	Fluorite	L-V	P	ca. -28	-2.17	-	-
GJM06-69	Fluorite	L-V	S	ca. -28	-12.23	-	-
GJM06-69	Fluorite	L-V	P	ca. -28	-2.66	-	-
GJM06-69	Fluorite	L-V-S	P	ca. -24	-1.87	166.65	3.18
GJM06-69	Fluorite	L-V	S	ca. -24	-1.78	163.40	3.02
GJM06-69	Fluorite	L-V-S	P	ca. -24	-1.87	223.35	3.18
GJM06-69	Fluorite	L-V-S	P	ca. -24	-1.87	225.23	3.18
GJM06-69	Fluorite	L-V-S	P	ca. -24	-2.27	-	-
GJM06-69	Fluorite	L-V-S	P	ca. -40.5	-13.02	-	-
GJM06-69	Fluorite	L-V-S	P	ca. -24	-2.27	-	-
GJM06-69	Fluorite	L-V-S	P	ca. -24	-2.07	-	-
GJM06-69	Fluorite	L-V-S	S	ca. -24	-3.06	-	-
GJM06-69	Fluorite	L-V	S	ca. -24	-2.37	175.03	3.97
GJM06-69	Fluorite	L-V	S	ca. -38	-23.00	-	-
GJM06-69	Fluorite	L-V	S	ca. -22	-9.40	138.60	13.29
GJM06-69	Fluorite	L-V	S	ca. -22	-9.00	140.80	12.85
GJM06-69	Fluorite	L-V	S	ca. -22	-9.70	140.20	13.62
GJM06-69	Fluorite	L-V	P	ca. -19	-0.90	234.10	1.57
GJM06-69	Fluorite	L-V	S	ca. -22	-9.00	137.80	12.85
GJM06-69	Fluorite	L-V-S	S	ca. -22	-8.90	-	-
GJM06-69	Fluorite	L-V	S	ca. -28	-14.40	130.30	18.13
GJM06-69	Fluorite	L-V	S	ca. -28	-14.50	138.80	18.22
GJM06-69	Fluorite	L-V	S	ca. -28	-14.50	138.00	18.22
GJM06-69	Fluorite	L-V	S	ca. -28	-14.50	138.80	18.22
GJM06-69	Fluorite	L-V	P	ca. -42	-12.10	120.20	16.05

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-69	Fluorite	L-V	S	ca. -36	-9.20	140.80	13.07
GJM06-69	Fluorite	L-V	S	ca. -36	-9.20	141.50	13.07
GJM06-69	Fluorite	L-V	S	ca. -36	-9.10	141.60	12.96
GJM06-69	Fluorite	L-V	S	ca. -38	-3.10	149.60	5.11
GJM06-69	Fluorite	L-V	S	ca. -36	-9.20	146.80	13.07
GJM06-69	Fluorite	L-V	S	ca. -38	-12.20	126.10	16.15
GJM06-69	Fluorite	L-V	S	ca. -36	-9.30	140.50	13.18
GJM06-69	Fluorite	L-V	S	ca. -36	-9.20	123.90	13.07
GJM06-69	Fluorite	L-V	S	ca. -36	-9.50	141.60	13.40
GJM06-69	Fluorite	L-V	S	ca. -36	-9.50	137.70	13.40
GJM06-69	Fluorite	L-V	S	ca. -25	-9.50	130.80	13.40
GJM06-69	Fluorite	L-V	S	ca. -25	-9.60	159.10	13.51
GJM06-69	Fluorite	L-V	S	ca. -25	-9.60	145.60	13.51
GJM06-69	Fluorite	L-V	S	ca. -36	-10.50	125.80	14.46
GJM06-69	Fluorite	L-V	S	ca. -31	-9.30	123.40	13.18
GJM06-69	Fluorite	L-V	S	-	-14.10	137.00	17.87
GJM06-69	Fluorite	L-V	S	-	-14.20	136.80	17.96
GJM06-69	Fluorite	L-V	P	ca. -38.3	-12.90	144.00	16.80
GJM06-69	Fluorite	L-V	S	ca. -29	-11.90	153.20	15.86
GJM06-69	Fluorite	L-V	S	ca. -29	-11.90	153.20	15.86
GJM06-69	Fluorite	L-V	S	ca. -29	-11.90	153.20	15.86
GJM06-69	Fluorite	L-V	S	ca. -29	-12.20	154.40	16.15
GJM06-69	Fluorite	L-V	S	ca. -29	-11.60	160.10	15.57
GJM06-69	Fluorite	L-V	S	ca. -29	-12.10	-	-
GJM06-69	Fluorite	L-V	S	ca. -29	-12.00	154.60	15.96
GJM06-69	Fluorite	L-V	S	ca. -29	-12.20	157.80	16.15
GJM06-69	Fluorite	L-V-S	S	ca. -10.2	-3.00	226.20	4.96
GJM06-69	Fluorite	L-V-S	S	ca. -33	-12.20	-	-
GJM06-69	Fluorite	L-V	S	ca. -33	-11.90	125.40	15.86
GJM06-69	Fluorite	L-V	S	ca. -33	-12.00	-	-
GJM06-69	Fluorite	L-V	S	ca. -33	-12.20	125.90	16.15
GJM06-69	Fluorite	L-V	S	ca. -32	-12.10	-	-
GJM06-69	Fluorite	L-V	S	ca. -32	-12.00	116.30	15.96
GJM06-69	Fluorite	L-V	S	ca. -30	-12.00	117.00	15.96
GJM06-69	Fluorite	L-V	S	ca. -31	-12.10	119.40	16.05
GJM06-69	Fluorite	L-V	S	ca. -28	-12.20	227.50	16.15
GJM06-69	Fluorite	L-V	S	ca. -29	-4.10	219.10	6.59
GJM06-69	Fluorite	L-V	S	ca. -29	-4.10	219.20	6.59
GJM06-69	Fluorite	L-V	S	ca. -29	-4.20	219.10	6.74
GJM06-69	Fluorite	L-V	S	ca. -29	-4.10	223.60	6.59
GJM06-69	Fluorite	L-V-S	P/S	ca. -29	-4.10	236.10	6.59

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-69	Fluorite	L-V	S	ca. -25	-8.30	136.70	12.05
GJM06-69	Fluorite	L-V	S	ca. -25	-3.70	188.50	6.01
GJM06-69	Fluorite	L-V	S	ca. -39	-14.20	130.10	17.96
GJM06-69	Fluorite	L-V	S	ca. -40	-8.40	-	-
GJM06-69	Fluorite	L-V	S	ca. -44	-13.50	-	-

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-70	Fluorite	L-V	S	ca. -23	-3.69	-	-
GJM06-70	Fluorite	L-V	S	ca. -23	-3.69	224.31	5.99
GJM06-70	Fluorite	L-V	S	ca. -23	-5.08	199.30	7.98
GJM06-70	Fluorite	L-V	S	ca. -20	-3.89	160.24	6.28
GJM06-70	Fluorite	L-V	S	ca. -20	-3.89	173.19	6.28
GJM06-70	Fluorite	L-V	S	ca. -20	-3.69	160.24	5.99
GJM06-70	Fluorite	L-V	S	ca. -20	-4.58	137.72	7.28
GJM06-70	Fluorite	L-V	S	ca. -20	-4.78	161.73	7.56
GJM06-70	Fluorite	L-V	S	ca. -20	-4.88	248.03	7.70
GJM06-70	Fluorite	L-V	P	ca. -20	-3.79	-	-
GJM06-70	Fluorite	L-V	P	ca. -20	-4.78	173.69	7.56
GJM06-70	Fluorite	L-V	S	ca. -40	-18.63	111.41	21.43
GJM06-70	Fluorite	L-V	P/S	ca. -20	-4.88	128.15	7.70
GJM06-70	Fluorite	L-V	P/S	ca. -20	-2.89	-	-
GJM06-70	Fluorite	L-V	S	ca. -22	-1.69	84.40	2.89
GJM06-70	Fluorite	L-V	S	ca. -22	-3.39	213.85	5.55
GJM06-70	Fluorite	L-V	S	ca. -22	-3.59	208.27	5.84
GJM06-70	Fluorite	L-V	S	ca. -22	-1.59	189.83	2.73
GJM06-70	Fluorite	L-V	S	-	-14.75	127.75	18.42
GJM06-70	Fluorite	L-V	S	-	-14.65	127.65	18.34
GJM06-70	Fluorite	L-V	S	ca. -36	-14.45	127.75	18.17
GJM06-70	Fluorite	L-V	P	ca. -20	-1.20	-	-
GJM06-70	Fluorite	L-V	P	ca. -20	-1.00	-	-
GJM06-70	Fluorite	L-V	P	ca. -20	-0.30	185.35	0.53
GJM06-70	Fluorite	L-V	S	ca. -25	-8.17	127.95	11.90
GJM06-70	Fluorite	L-V	S	ca. -25	-8.27	137.12	12.01
GJM06-70	Fluorite	L-V	S	ca. -25	-9.27	137.22	13.14
GJM06-70	Fluorite	L-V	S	ca. -25	-0.10	113.20	0.18
GJM06-70	Fluorite	L-V	S	ca. -25	-8.47	138.71	12.24
GJM06-70	Fluorite	L-V	S	ca. -22	-3.99	103.54	6.43
GJM06-70	Fluorite	L-V	S	ca. -20	-0.20	113.00	0.35
GJM06-70	Fluorite	L-V	S	ca. -22	-3.49	108.82	5.69
GJM06-70	Fluorite	L-V	S	ca. -22	-3.49	116.69	5.69
GJM06-70	Fluorite	L-V	S	ca. -22	-3.29	119.88	5.40
GJM06-70	Fluorite	L-V	S	ca. -22	-3.99	-	-
GJM06-70	Fluorite	L-V	S	ca. -22	-3.99	103.64	6.43
GJM06-70	Fluorite	L-V	S	ca. -22	-3.99	103.64	6.43

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-70	Fluorite	L-V	S	ca. -25	-2.20	150.67	3.71
GJM06-70	Fluorite	L-V	S	ca. -25	-2.20	150.47	3.71
GJM06-70	Fluorite	L-V	S	ca. -25	-2.20	140.95	3.71
GJM06-70	Fluorite	L-V	S	ca. -25	-2.20	150.47	3.71
GJM06-70	Fluorite	L-V	S	ca. -25	-2.20	140.95	3.71
GJM06-70	Fluorite	L-V	S	ca. -25	-2.40	140.95	4.03
GJM06-70	Fluorite	L-V	S	ca. -25	-2.20	140.95	3.71
GJM06-70	Fluorite	L-V	S	ca. -25	-2.30	140.95	3.87
GJM06-70	Fluorite	L-V	P	ca. -25	-2.10	116.21	3.55
GJM06-70	Fluorite	L-V	P	ca. -25	-2.00	116.51	3.39
GJM06-70	Fluorite	L-V	P	ca. -25	-1.00	97.78	1.74
GJM06-70	Fluorite	L-V	P	ca. -25	-1.30	109.70	2.24
GJM06-70	Fluorite	L-V	S	-	-23.24	98.68	24.49
GJM06-70	Fluorite	L-V	S	-	-23.74	100.78	24.80
GJM06-70	Fluorite	L-V	S	-	-23.24	98.68	24.49
GJM06-70	Fluorite	L-V	S	-	-23.74	97.88	24.80
GJM06-70	Fluorite	L-V	S	ca.-23	-0.50	-	-
GJM06-70	Fluorite	L-V	S	ca.-23	-1.50	148.37	2.58
GJM06-70	Fluorite	L-V	S	ca.-23	-1.10	146.06	1.91
GJM06-70	Fluorite	L-V	S	ca.-23	-1.30	118.31	2.24
GJM06-70	Fluorite	L-V	S	ca.-23	-0.40	108.70	0.71
GJM06-70	Fluorite	L-V	P	-	-3.81	239.53	6.17
GJM06-70	Fluorite	L-V	P/S	-	-5.41	164.40	8.42
GJM06-70	Fluorite	L-V	P	ca. -35	-1.70	164.40	2.91
GJM06-70	Fluorite	L-V	P	ca. - 30	-12.52	164.40	16.45
GJM06-70	Fluorite	L-V	S	-	-9.42	228.11	13.31
GJM06-70	Fluorite	L-V	P/S	ca. -25	-1.00	123.72	1.74
GJM06-70	Fluorite	L-V	P/S	ca. -25	-1.90	153.88	3.23
GJM06-70	Fluorite	L-V	S	ca. -25	-2.40	143.66	4.03

Sample	Mineral	Type	p/s	T _(m) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-81	Fluorite	L-V	s	ca.-22	-0.20	122.52	0.35
GJM06-81	Fluorite	L-V	s	ca.-22	-1.20		
GJM06-81	Fluorite	L-V	s	ca.-22	-0.90	134.84	1.57
GJM06-81	Fluorite	L-V	s	ca.-22	-1.00	134.54	1.74
GJM06-81	Fluorite	L-V	s	ca.-22	-0.90	99.28	1.57
GJM06-81	Fluorite	L-V	s	ca.-28	-2.40	140.65	4.03
GJM06-81	Fluorite	L-V	s	ca.-28	-2.40	104.59	4.03
GJM06-81	Fluorite	L-V	s	ca.-28	-2.20	149.97	3.71
GJM06-81	Fluorite	L-V	s	ca.-28	-1.40	143.46	2.41
GJM06-81	Fluorite	L-V	s	-	-2.70	150.57	4.50
GJM06-81	Fluorite	L-V-S	s	ca. -10	-2.40	226.11	4.03
GJM06-81	Fluorite	L-V	s	ca. -10	-1.70	201.06	2.91
GJM06-81	Fluorite	L-V	s	ca. -10	-1.90	-	-
GJM06-81	Fluorite	L-V	s	ca. -10	-1.70	-	-
GJM06-81	Fluorite	L-V	s	ca. -10	-3.51	171.91	5.72
GJM06-81	Fluorite	L-V	s	ca. -10	-3.01	-	-
GJM06-81	Fluorite	L-V	s	-	-8.21	119.51	11.95
GJM06-81	Fluorite	L-V	s	-	-4.91	116.91	7.74
GJM06-81	Fluorite	L-V	s	-	-0.50	118.01	0.88
GJM06-81	Fluorite	L-V	s	-	-2.30	261.17	3.87
GJM06-81	Fluorite	L-V	s	ca. -10	-1.20	140.25	2.08
GJM06-81	Fluorite	L-V	s	ca. -10	-0.40	139.45	0.71
GJM06-81	Fluorite	L-V	s	ca. -10	2.60	141.65	-4.95
GJM06-81	Fluorite	L-V	s	ca. -10	-2.20	139.05	3.71
GJM06-81	Fluorite	L-V	s	-	-6.41	308.15	9.74
GJM06-81	Fluorite	L-V	s	-	-3.01	110.10	4.97
GJM06-81	Fluorite	L-V-S	s	ca. -18	-0.20	82.85	0.35
GJM06-81	Fluorite	L-V	s	ca. -18	-1.50	84.35	2.58
GJM06-81	Fluorite	L-V	s	ca. -20	-4.11	119.82	6.60
GJM06-81	Fluorite	L-V	s	ca. -20	-4.11	120.72	6.60
GJM06-81	Fluorite	L-V	s	ca. -20	-3.91	124.62	6.31
GJM06-81	Fluorite	L-V	s	ca. -20	-3.01	130.73	4.97
GJM06-81	Fluorite	L-V	s	ca.-22	-4.81	148.67	7.60
GJM06-81	Fluorite	L-V	s	ca.-22	-2.20	329.49	3.71
GJM06-81	Fluorite	L-V	s	ca. -18	-1.30	166.50	2.24
GJM06-81	Fluorite	L-V	s	ca. -18	-0.90	185.13	1.57
GJM06-81	Fluorite	L-V	s	ca. -18	-0.80	151.77	1.40
GJM06-81	Fluorite	L-V	s	ca. -18	-1.00	156.48	1.74

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-81	Fluorite	L-V	p/s	ca.-20	2.30	114.81	4.34
GJM06-81	Fluorite	L-V	p/s	ca.-20	1.40	139.25	2.58
GJM06-81	Fluorite	L-V	p/s	ca.-20	-0.10	203.17	0.18
GJM06-81	Fluorite	L-V	s	ca.-20	-0.10	139.95	0.18
GJM06-81	Fluorite	L-V	s	ca.-20	-2.91	157.68	4.81
GJM06-81	Fluorite	L-V	s	ca.-20	-0.50	120.12	0.88
GJM06-81	Fluorite	L-V	s	ca.-20	-2.70	223.40	4.50
GJM06-81	Fluorite	L-V	s	ca.-20	-5.21	167.20	8.15
GJM06-81	Fluorite	L-V	s	ca.-20	-2.81	187.84	4.66
GJM06-81	Fluorite	L-V	s	ca.-20	-2.81	167.10	4.66
GJM06-81	Fluorite	L-V	s	ca.-20	-2.20	127.93	3.71
GJM06-81	Fluorite	L-V	s	ca.-20	-1.30	126.53	2.24

Flinks Dal Formation

Sample	Mineral	Type	p/s	T _(mc) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-96	Fluorite	L-V	s	-	-2.92	114.91	4.84
GJM06-96	Fluorite	L-V	s	-	-0.10	-	-
GJM06-96	Fluorite	L-V	s	-	-2.52	103.33	4.21
GJM06-96	Fluorite	L-V	s	ca. -35	-4.73	105.85	7.49
GJM06-96	Fluorite	L-V	s	ca. -30	-16.42	108.57	19.77
GJM06-96	Fluorite	L-V	s	ca. -30	-16.42	105.64	19.77
GJM06-96	Fluorite	L-V	s	ca. -30	-16.21	105.54	19.62
GJM06-96	Fluorite	L-V	s	-	-8.36	237.27	12.12
GJM06-96	Fluorite	L-V	s	-	-7.45	206.25	11.04
GJM06-96	Fluorite	L-V	s	-	-7.45	148.04	11.04
GJM06-96	Fluorite	L-V	s	-	-8.56	152.27	12.35
GJM06-96	Fluorite	L-V	s	-	0.30	-	-
GJM06-96	Fluorite	L-V	s	ca. -30	-5.24	83.99	8.19
GJM06-96	Fluorite	L-V	p	ca. -30	-5.24	92.96	8.19
GJM06-96	Fluorite	L-V	s	ca. -35	-5.44	77.55	8.46
GJM06-96	Fluorite	L-V	s	ca. -40	-8.76	90.64	12.58
GJM06-96	Fluorite	L-V	s	ca. -40	-7.75	99.20	11.41
GJM06-96	Fluorite	L-V	s	ca. -40	-6.55	84.90	9.91
GJM06-96	Fluorite	L-V	s	ca. -25	-1.21	111.39	2.09
GJM06-96	Fluorite	L-V	s	-	-31.22	85.50	29.44
GJM06-96	Fluorite	L-V	s	ca. -30	-17.42	98.49	20.54
GJM06-96	Fluorite	L-V	s	ca. -40	-7.15	120.65	10.67
GJM06-96	Fluorite	L-V	s	ca. -40	-7.25	122.06	10.80
GJM06-96	Fluorite	L-V	s	ca. -40	-6.85	116.62	10.30
GJM06-96	Fluorite	L-V	s	ca. -35	-3.73	-	-
GJM06-96	Fluorite	L-V	s	ca. -35	-17.93	-	-
GJM06-96	Fluorite	L-V	s	ca. -35	-17.83	223.98	20.84
GJM06-96	Fluorite	L-V	s	ca. -40	-16.72	82.38	20.01
GJM06-96	Fluorite	L-V	s	-	-1.51	96.88	2.59
GJM06-96	Fluorite	L-V	p	-	-0.30	157.41	0.53
GJM06-96	Fluorite	L-V	s	-	-2.92	96.98	4.84
GJM06-96	Fluorite	L-V	s	ca. -25	0.30	-	-
GJM06-96	Fluorite	L-V	s	ca. -25	-2.22	-	-
GJM06-96	Fluorite	L-V	s	ca. -25	-1.51	153.28	2.59
GJM06-96	Fluorite	L-V	s	ca. -30	-4.03	-	-
GJM06-96	Fluorite	L-V	s	-	-0.50	158.32	0.89
GJM06-96	Fluorite	L-V	s	-	-2.01	-	-
GJM06-96	Fluorite	L-V	s	-	-0.60	-	-

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-96	Fluorite	L-V	p	ca. -10	0.50	132.13	-0.91
GJM06-96	Fluorite	L-V	p	ca. -10	0.30	170.70	-0.54
GJM06-96	Fluorite	L-V	s	ca. -30	-17.93	-	-
GJM06-96	Fluorite	L-V	s	ca. -30	-13.60	70.50	17.43
GJM06-96	Fluorite	L-V	s	ca. -15	-0.50	115.21	0.89
GJM06-96	Fluorite	L-V	s	ca. -15	-2.01	106.35	3.41
GJM06-96	Fluorite	L-V	s	ca. -15	0.30	-	-
GJM06-96	Fluorite	L-V	s	ca. -15	-0.60	98.60	1.06
GJM06-96	Fluorite	L-V	s	ca. -50	-10.27	78.76	14.22
GJM06-96	Fluorite	L-V	s	ca. -50	-10.27	87.52	14.22
GJM06-96	Fluorite	L-V	s	ca. -50	-10.88	82.18	14.85
GJM06-96	Fluorite	L-V	s	ca. -50	-10.37	75.53	14.33
GJM06-96	Fluorite	L-V	s	ca. -50	-10.27	92.85	14.22

Sample	Mineral	Type	p/s	T _(me) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-100	Fluorite	L-V	S	ca.-18	-0.30	91.66	0.53
GJM06-100	Fluorite	L-V	S	ca.-18	-2.91	94.27	4.81
GJM06-100	Fluorite	L-V	S	ca.-18	-2.91	80.64	4.81
GJM06-100	Fluorite	L-V	S	ca.-18	-3.11	83.75	5.12
GJM06-100	Fluorite	L-V	S	ca.-18	-2.91	119.51	4.81
GJM06-100	Fluorite	L-V	S	ca. -10	-0.20	147.77	0.35
GJM06-100	Fluorite	L-V	S	ca. -10	-0.20	124.62	0.35
GJM06-100	Fluorite	L-V	S	ca.-18	-3.71	133.34	6.02
GJM06-100	Fluorite	L-V	S	ca.-18	-4.61	174.71	7.32
GJM06-100	Fluorite	L-V	S	ca.-18	-3.91	147.77	6.31
GJM06-100	Fluorite	L-V	S	-	-2.70	185.13	4.50
GJM06-100	Fluorite	L-V	S	-	-2.81	-	-
GJM06-100	Fluorite	L-V	S	-	0.40	-	-
GJM06-100	Fluorite	L-V	s	-	-0.80	146.66	1.40
GJM06-100	Fluorite	L-V	s	-	-0.30	168.60	0.53
GJM06-100	Fluorite	L-V	s	-	-0.50	142.46	0.88
GJM06-100	Fluorite	L-V	s	-	-2.70	153.48	4.50
GJM06-100	Fluorite	L-V	s	-	-0.50	125.73	0.88
GJM06-100	Fluorite	L-V-S	s	ca. - 30	-4.91	154.38	7.74
GJM06-100	Fluorite	L-V	s	-	-2.10	138.25	3.55
GJM06-100	Fluorite	L-V	s	-	-0.70	133.04	1.23
GJM06-100	Fluorite	L-V	s	ca. -15	-0.30	185.23	0.53
GJM06-100	Fluorite	L-V	s	ca. -15	-1.10	127.53	1.91
GJM06-100	Fluorite	L-V	s	ca. -15	-0.20	251.55	0.35
GJM06-100	Fluorite	L-V	s	ca. -15	-0.10	151.27	0.18
GJM06-100	Fluorite	L-V	s	ca. -15	-0.10	120.52	0.18
GJM06-100	Fluorite	L-V	s	-	-4.01	162.69	6.46
GJM06-100	Fluorite	L-V	s	-	-5.11	157.78	8.01
GJM06-100	Fluorite	L-V	s	-	-4.01	146.06	6.46
GJM06-100	Fluorite	L-V	s	-	-4.01	177.62	6.46
GJM06-100	Fluorite	L-V	s	-	-4.21	123.92	6.75
GJM06-100	Fluorite	L-V	s	-	-5.21	170.91	8.15
GJM06-100	Fluorite	L-V	s	-	-5.21	170.81	8.15
GJM06-100	Fluorite	L-V	s	-	-4.21	175.31	6.75
GJM06-100	Fluorite	L-V	s	-	-3.91	124.72	6.31
GJM06-100	Fluorite	L-V	s	-	-4.11	-	-
GJM06-100	Fluorite	L-V	s	ca. -4	-0.10	208.37	0.18
GJM06-100	Fluorite	L-V	s	ca. -4	-0.10	111.90	0.18

Sample	Mineral	Type	p/s	T _(m) H ₂ O (°C)	T _(m) H ₂ O (°C)	T _(h) H ₂ O (°C)	Salinity (wt. % NaCl eq.)
GJM06-100	Fluorite	L-V	s	-	-1.00	-	-
GJM06-100	Fluorite	L-V	s	-	-1.60	132.34	2.74
GJM06-100	Fluorite	L-V	s	-	-0.60	117.51	1.05
GJM06-100	Fluorite	L-V	s	-	-	-	-
GJM06-100	Fluorite	L-V	s	-	-	-	-
GJM06-100	Fluorite	L-V	s	-	-	-	-
GJM06-100	Fluorite	L-V	s	-	-3.31	132.44	5.42
GJM06-100	Fluorite	L-V	s	ca. -10	0.70	113.50	-1.28
GJM06-100	Fluorite	L-V	s	ca. -10	-0.91	124.28	1.58
GJM06-100	Fluorite	L-V	s	ca. -10	-0.91	120.05	1.58
GJM06-100	Fluorite	L-V	s	ca. -10	-0.40	139.79	0.71
GJM06-100	Fluorite	L-V	s	ca. -10	-0.60	-	-
GJM06-100	Fluorite	L-V	s	ca. -20	-3.02	102.93	4.99
GJM06-100	Fluorite	L-V	s	ca. -20	-2.01	283.20	3.41
GJM06-100	Fluorite	L-V	s	ca. -20	-2.01	102.93	3.41
GJM06-100	Fluorite	L-V	s	ca. -20	-2.01	99.40	3.41