Datashare 43:
Paleohydrogeological and thermal events recorded by fluid inclusions and stable isotopes of diagenetic minerals in Lower Cretaceous sandstones, offshore Nova Scotia, Canada

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APPENDIX 1 (ONLINE DATA)

Fluid inclusion data from primary and secondary inclusions in different cements in sandstones from Chebucto K-90 well and Glenelg and Thebaud fields. Available on AAPG Datashare.

Appendix 1. Fluid-Inclusion Data*

Well	Sample	Inclusion Number	Type	Hosted Grain	Melting Temperature (°C)	Homogenization Temperature (°C)	Salinity**	Eutectic Temperature (°C)	Fluorescence
Glenelg N-49	3000.66B	1	Secondary	Detrital quartz	–0.6	160.4	1.1		Yes
Glenelg N-49	3000.66B	2	Secondary	Detrital quartz		Couldn't see the bubble			Yes
Glenelg N-49	3000.66B	3	Secondary	Detrital quartz	–0.6	114.3	1.1		Yes
Glenelg N-49	3000.66B	4	Primary	Quartz overgrowth	–12.9	113.4	16.8		No
Glenelg N-49	3000.66B	5	Primary	Quartz overgrowth	–16.5	115	19.8		No
Glenelg N-49	3000.66B	6	Secondary	Detrital quartz	–3.3	>200	5.4		Yes
Glenelg N-49	3000.66B	7	Secondary	Detrital quartz	–1.6	?167	3.6		Yes
Glenelg N-49	3000.66B	8	Secondary	Detrital quartz		104.3			Yes
Glenelg N-49	3000.66B	9	Secondary	Quartz overgrowth	–3.6	>200	5.9		Yes
Glenelg N-49	3000.66B	10	Secondary	Quartz overgrowth	–2.0	>200	3.4		Yes
Glenelg N-49	3000.66B	11	Secondary	Detrital quartz		119.3			Yes
Glenelg N-49	3000.66B	12	Secondary	Quartz overgrowth	–2.1	98.3	3.6		No
Glenelg N-49	3000.66B	13	Secondary	Quartz overgrowth	–0.6	92	1.1		No
Glenelg N-49	3000.66B	14	Secondary	Quartz overgrowth	–1.5	91.5	2.6		No
Glenelg N-49	3000.66B	15	Primary	Quartz overgrowth	–16.1	Couldn't see the bubble	19.5		No
Glenelg N-49	3000.66B	16	Primary	Quartz overgrowth	–17.6	Min 118.7	20.7		No
Glenelg N-49	3000.66B	18	Primary	Silica cement	–11.2	119	15.2		No
Glenelg N-49	3000.66B	19	Primary	Silica cement	–11.5	Min 100.4	15.5		No
Glenelg N-49	3624.29A	20	Primary	Quartz overgrowth	–17.7	123.9	21.4	Min –45.5	No
Glenelg N-49	3624.29A	21	Primary	Quartz overgrowth	–17.4		21.1		No
Glenelg N-49	3624.29A	22	Primary	Quartz overgrowth	–18.7		22.2		No
Glenelg N-49	3624.29A	23	Primary	Quartz overgrowth	–18.7		22.2		No
Glenelg N-49	3624.29A	24	Primary	Quartz overgrowth	–19.5	118.8	22.8		No
Glenelg N-49	3624.29A	25	Primary	Quartz overgrowth	–17.2	113.8	21.0		No
Glenelg N-49	3624.29A	26	Primary	Quartz overgrowth	–23.5		25.8		No
Glenelg N-49	3624.29A	27	Secondary	Quartz	–3.7	125.6	6.0		No
Glenelg N-49	3624.29B	28	Primary	Quartz overgrowth	–17.5	114.6	21.2	–51.1	No
Glenelg N-49	3624.29B	29	Primary	Quartz overgrowth	–17.9	115.3	21.5		No
Glenelg N-49	3624.29B	30	Primary	Quartz overgrowth	–18.1		22.2	–45.5	No
Glenelg N-49	3624.29B	31	Primary	Quartz overgrowth	–18.0	118.2	22.8	–47.4	No
Glenelg N-49	3624.29B	32	Primary	Quartz overgrowth	–17.4	111.9	21.1		No
Glenelg N-49	3624.29B	33	Primary	Quartz overgrowth	–17.8	114.2	21.5		No
Glenelg N-49	3624.29B	34	Secondary	Fracture in quartz	–2.7	131.3	4.5		Yes

Glenelg N-49	3624.29B	35	Secondary	Fracture in quartz	–3.3	133.4	5.4		Yes
Glenelg N-49	3624.29B	36	Secondary	Fracture in quartz	–3.4	135.3	5.6		No
Glenelg N-49	3624.29B	37	Secondary	Fracture in quartz	–3.4	126.7	5.6		No
Glenelg N-49	3624.29B	38	Secondary	Fracture in quartz	–1.9		3.2		No
Glenelg N-49	3624.29B	39	Secondary	Fracture in quartz	–2.3	129.1	3.9		Yes
Glenelg N-49	3624.29B	40	Secondary	Fracture in quartz	–2.5	120.7	4.2		Yes
Glenelg N-49	3624.29B	41	Secondary	Fracture in quartz	–2.6	119.7	4.4		No
Glenelg E-58	2994.33A	42	Secondary	Detrital quartz	0.8	Min 79.9	14.7		Yes
Glenelg E-58	2994.33A	43	Secondary	Detrital quartz		85.4			Yes
Glenelg E-58	2994.33A	44	Secondary	Detrital quartz		77.4			Yes
Glenelg E-58	2994.33A	45	Secondary	Detrital quartz	5.7	84.2	7.9		Yes
Glenelg E-58	3000.92A	46	Secondary	Detrital quartz	–3.6	124.9	5.9		No
Glenelg E-58	3000.92A	47	Secondary	Detrital quartz	–0.8	128.6	1.4		No
Glenelg E-58	3000.92A	48	Secondary	Detrital quartz	–0.8	115.7	1.4		No
Glenelg E-58	3000.92A	49	Secondary	Detrital quartz		Min 113.6			No
Glenelg E-58	3000.92A	50	Secondary	Detrital quartz		No bubble			Yes
Glenelg E-58	3000.92A	51	Secondary	Detrital quartz		No bubble			Yes
Glenelg E-58	3000.92A	52	Secondary	Detrital quartz	2.4	91.5	13.3		No
Glenelg E-58	3000.92A	53	Secondary	?Quartz overgrowth	3.5	72	11.2		No
Glenelg E-58	3000.92A	54	Secondary	Detrital quartz		No bubble			Yes
Glenelg E-58	3000.92A	55	Secondary	Detrital quartz		No bubble			Yes
Glenelg E-58	3000.92A	56	Secondary	Detrital quartz		No bubble			Yes
Glenelg E-58	3000.92A	57	Secondary	Detrital quartz		No bubble			No
Glenelg E-58	3000.92A	58	Secondary	Detrital quartz	–4.7	>200	7.5		No
Glenelg E-58	3000.92A	60	Secondary	Detrital quartz		165.2			No
Glenelg E-58	3000.92A	61	Primary	Quartz overgrowth	–14.2	112.3	18.0		No
Glenelg E-58	3000.92A	62	Primary	Quartz overgrowth	–12.5	113.5	16.4		No
Glenelg E-58	3000.92A	63	Secondary	Quartz overgrowth	0.4	No bubble	15.2		No
Glenelg E-58	3000.92A	64	Primary	Quartz overgrowth	–11.8	86.9	15.8		No
Glenelg E-58	3000.92A	65	Secondary	Quartz overgrowth	–1.1	108.7	1.9		No
Glenelg E-58	3000.92A	66	Primary	Quartz overgrowth	–6.8	82.2	10.2		No
Glenelg E-58	3000.92A	67	Primary	Quartz overgrowth	–8.7		13.2		No
Glenelg E-58	3000.92A	68	Primary	Quartz overgrowth	–8.1	81.5	11.8		No
Glenelg E-58	3525.79A/B	69	Primary	Late ankerite cement	–18.5	129.1	22.0	–61	No
Glenelg E-58	3525.79A/B	70	Primary	Late ankerite cement	–18.5	127.1	22.0	–61	No
Glenelg E-58	3525.79A/B	71	Primary	Late ankerite cement	–18.1	130.4	21.7		??
Glenelg E-58	3525.79A/B	72	Secondary	Fracture in quartz	–4.1	132.1	6.6		No
Glenelg E-58	3525.79A/B	73	Secondary	Fracture in quartz	–3.9	132.6	6.3		Yes

Glenelg E-58	3525.79A/B	74	Secondary	Fracture in quartz	–3.3	129.9	5.4		No
Glenelg E-58	3525.79A/B	75	Secondary	Fracture in quartz	–3.1	129.7	5.1		No
Glenelg E-58	3525.79A/B	76	Primary	Quartz overgrowth	–17.4	110.7	21.1	–46	No
Glenelg E-58	3525.79A/B	77	Primary	Quartz overgrowth	–17.4		21.1		No
Glenelg E-58	3525.79A/B	78	Primary	Late ankerite cement	–19.1	135.5	22.5	–65	No
Glenelg E-58	3525.79A/B	79	Primary	Late ankerite cement	–18.7	136.3	22.2		No
Glenelg E-58	3525.79A/B	80	Primary	Late ankerite cement	–18.5	129.1	22.0	–63	No
Glenelg E-58	3525.79A/B	81	Primary	Late ankerite cement	–18.5		22.0		No
Glenelg E-58	3525.79A/B	82	Primary	Late ankerite cement	–18.4	127.1	21.9		No
Glenelg E-58	3525.79A/B	83	Primary	Late ankerite cement	–18.6		22.1		No
Chebucto K-90	4283.72A	84	Primary	Late Fe-calcite cement	–18.2	130.1	21.8	–67	No
Chebucto K-90	4283.72A	85	Primary	Late Fe-calcite cement	–18.8	131.6	22.2	–66.6	No
Chebucto K-90	4283.72A	86	Primary	Late Fe-calcite cement	–18.6	129.2	22.1	Min –56	No
Chebucto K-90	4283.72A	87	Primary	Late Fe-calcite cement	–18.7	134	22.2		No
Chebucto K-90	4283.72A	88	Primary	Late Fe-calcite cement	–18.3	134.7	21.9	–69	No
Chebucto K-90	4283.72A	89	Primary	Late Fe-calcite cement	–18.7	128	22.2		No
Chebucto K-90	4283.72A	90	Primary	Late Fe-calcite cement	–18.6	127	22.1		No
Chebucto K-90	4283.72A	91	Primary	Late Fe-calcite cement	–18.3	135	21.9	–69	No
Chebucto K-90	4283.72A	92	Primary	Late Fe-calcite cement	–18.6	Min 120.6	22.1	Min –56	No
Chebucto K-90	4283.72A	93	Primary	Late Fe-calcite cement	–18.7	132.6	22.2		No
Chebucto K-90	4283.72A	94	Secondary	Fracture in quartz	–3.3	131.2	5.4		Yes
Chebucto K-90	4283.72A	95	Primary	Late Fe-calcite cement	–18.1		21.7		No
Chebucto K-90	4283.72A	96	Primary	Late Fe-calcite cement	–18.1	131.1	21.7	–66	No
Chebucto K-90	4283.72A	97	Primary	Late Fe-calcite cement	–18.3	129.9	21.9		No
Chebucto K-90	4283.72A	98	Primary	Late Fe-calcite cement	–18.4		21.9		No
Chebucto K-90	4283.72A	99	Primary	Late Fe-calcite cement	–18.3	129.9	21.9	–65.5	No
Chebucto K-90	4283.72A	100	Primary	Late Fe-calcite cement	–18.7		22.2		No
Chebucto K-90	4283.72A	101	Primary	Late Fe-calcite cement	–18.9		22.3		No
Chebucto K-90	4283.72A	102	Primary	Late Fe-calcite cement	–18.8	133.8	22.2	–68	No
Chebucto K-90	4283.72A	103	Primary	Late Fe-calcite cement	–18.5	134.1	22.0		No
Chebucto K-90	4283.72A	104	Primary	Late Fe-calcite cement	–18.4		21.9		No
Chebucto K-90	4283.72A	105	Primary	Late Fe-calcite cement	–18.1		21.7		No
Chebucto K-90	4283.72A	106	Primary	Late Fe-calcite cement	–17.9	129.6	21.5		No
Chebucto K-90	4283.72A	107	Primary	Quartz overgrowth	–17.4		21.1		No
Chebucto K-90	4283.72A	108	Primary	Quartz overgrowth	–17.1		20.9		No
Chebucto K-90	4283.72A	109	Primary	Quartz overgrowth	–17		20.8		No
Chebucto K-90	4283.72A	110	Primary	Quartz overgrowth	–16.5	110.6	20.4		No
Chebucto K-90	4283.72A	111	Primary	Quartz overgrowth	–16.9	109.6	20.7		No

Chebucto K-90	4283.72A	112	Primary	Quartz overgrowth	–16.7		20.6		No
Chebucto K-90	4283.72A	113	Primary	Quartz overgrowth	–16.8	114.5	20.6		No
Chebucto K-90	4283.72A	114	Primary	Quartz overgrowth	–15.6	117.4	19.6		??
Chebucto K-90	4283.72A	115	Primary	Quartz overgrowth	–17.5	118.1	21.2		No
Chebucto K-90	4283.72A	116	Primary	Quartz overgrowth	–17.9	116	21.5		No
Chebucto K-90	4283.72A	117	Primary	Quartz overgrowth	–17.1		20.9		No
Chebucto K-90	4283.72A	118	Secondary	Fracture in quartz	–5.1	131.1	8.1		Yes
Chebucto K-90	4283.72A	119	Secondary	Fracture in quartz	–4.4	133.5	7.1		No
Chebucto K-90	4283.72A	120	Secondary	Fracture in quartz	–4.7	121.6	7.5		No
Chebucto K-90	4279.5A	121	Secondary	Fracture in quartz	–4.1	130.4	6.6		No
Chebucto K-90	4279.5A	122	Secondary	Fracture in quartz	–4.4	129.5	7.1		No
Chebucto K-90	4279.5A	123	Secondary	Fracture in quartz	–4.1	131.1	6.6		No
Chebucto K-90	4279.5A	124	Secondary	Fracture in quartz	–4.4	130	7.1		No
Chebucto K-90	4279.5A	125	Secondary	Fracture in quartz	–3.1		5.1		No
Chebucto K-90	4279.5A	126	Secondary	Fracture in quartz	–2.9	129.1	4.8		No
Chebucto K-90	4279.5A	127	Secondary	Fracture in quartz	–2.2		3.7		No
Chebucto K-90	4279.5A	128	Secondary	Fracture in quartz		129.4		–44	Yes
Chebucto K-90	4279.5A	129	Secondary	Fracture in quartz		129.6			Yes
Chebucto K-90	4279.5A	130	Secondary	Fracture in quartz	–3.1	121.5	5.1	–47	Yes
Chebucto K-90	4279.5A	131	Secondary	Fracture in quartz	–3.1	134.1	5.1	–46	No
Chebucto K-90	4279.5A	132	Secondary	Fracture in quartz	–4.3		6.9		No
Chebucto K-90	4279.5A	133	Secondary	Fracture in quartz	–4.4	132.3	7.1		No
Chebucto K-90	4279.5A	134	Secondary	Fracture in quartz	–2.9	129.7	4.8		No
Chebucto K-90	4279.5A	135	Secondary	Fracture in quartz	–3.4		5.6		No
Chebucto K-90	4279.5A	136	Secondary	Fracture in quartz	–2.9	121.1	4.8		No
Chebucto K-90	4279.5A	137	Secondary	Fracture in quartz	–3		5.0		Yes
Chebucto K-90	4279.5A	138	Secondary	Fracture in quartz	–3.1	134.3	5.1		No
Chebucto K-90	4279.5A	139	Secondary	Fracture in quartz	–3.1	132.3	5.1		Yes
Thebaud I93	3067A	140	Primary	Quartz overgrowth	–16.5	110.5	20.4	–46	No
Thebaud I93	3067A	141	Primary	Quartz overgrowth	–16.7	109.6	20.6		No
Thebaud I93	3067A	141	Primary	Quartz overgrowth	–16.3		20.2		??
Thebaud I93	3067A	142	Primary	Quartz overgrowth	–16	114.5	20.0	Min –41	No
Thebaud I93	3067A	142	Primary	Quartz overgrowth	–17.1	113.4	20.9		No
Thebaud I93	3067A	143	Primary	Quartz overgrowth	–15.6		19.6		No
Thebaud I93	3067A	143	Primary	Quartz overgrowth	–16.7		20.6		No
Thebaud I93	3067A	144	Secondary	Fracture in quartz	–5.1	131.4	8.1	–41	No
Thebaud I93	3067A	144	Secondary	Fracture in quartz	–4.1	136.7	6.6		No
Thebaud I93	3067A	145	Secondary	Fracture in quartz	–3.5	134.5	5.7		No

Thebaud I93	3067A	145	Secondary	Fracture in quartz	–3.2	129.9	5.3		Yes
Thebaud I93	3067A	146	Secondary	Fracture in quartz	–5.4	125.7	8.5		No
Thebaud I93	3067A	146	Secondary	Fracture in quartz	–3.2	126.7	5.3		No
Thebaud I93	3067A	147	Secondary	Fracture in quartz	–4.5		7.2		No
Thebaud I93	3916.06A	148	Primary	Quartz overgrowth	–17.1	111.5	20.9		No
Thebaud I93	3916.06A	149	Primary	Quartz overgrowth	–17.4		21.1		No
Thebaud I93	3916.06A	150	Primary	Late Fe-calcite cement	–18.5	132.3	22.0	–61.1	No
Thebaud I93	3916.06A	151	Primary	Late Fe-calcite cement	–18.4	129.9	21.9	–65.1	No
Thebaud I93	3916.06A	152	Primary	Late Fe-calcite cement	–14.1	128.5	18.3		No
Thebaud I93	3916.06A	153	Primary	Late Fe-calcite cement	–18.9	128.7	22.3		No
Thebaud I93	3916.06A	154	Primary	Late Fe-calcite cement	–17.5		21.2		No
Thebaud I93	3916.06A	155	Primary	Late Fe-calcite cement	–17	127.6	20.8	Min –60	No
Thebaud I93	3916.06A	156	Primary	Late Fe-calcite cement		131.4			No
Thebaud I93	3916.06A	157	Primary	Late Fe-calcite cement		131.6			No
Thebaud I93	3916.06A	158	Primary	Late Fe-calcite cement	–16.9	128.6	20.7		No
Thebaud I93	3916.06A	159	Primary	Late Fe-calcite cement	–19.1	127.6	22.5		No
Thebaud I93	3916.06A	160	Primary	Late Fe-calcite cement	–17.1	127	20.9	Min –59	No
Thebaud I93	3916.06A	161	Primary	Late Fe-calcite cement	–16.9		20.7		No
Thebaud I93	3916.06A	162	Secondary	Fracture in quartz	–3.1	131.4	5.1		Yes
Thebaud I93	3916.06A	163	Secondary	Fracture in quartz	–3.6	131.5	5.9		No
Thebaud I93	3916.06A	164	Primary	Late Fe-calcite cement	–17.8	129.9	21.5		No
Thebaud I93	3916.06A	165	Primary	Late Fe-calcite cement	–18.8	129.9	22.2		No
Thebaud I93	3916.06A	166	Primary	Late Fe-calcite cement	–18.1		21.7		No
Thebaud I93	3916.06A	167	Primary	Late Fe-calcite cement	–18.3	131.4	21.9		No
Thebaud I93	3916.06A	168	Primary	Late Fe-calcite cement		131		–62.3	No
Thebaud I93	3916.06A	169	Primary	Late Fe-calcite cement	–18.5		22.0	–60.6	No
Thebaud I93	3916.06A	170	Primary	Late Fe-calcite cement	–18.6	Min 120.5	22.1		No
Thebaud I93	3916.06A	171	Primary	Late Fe-calcite cement	–18.3	Min 120.1	21.9		No
Thebaud I93	3916.06A	172	Primary	Late Fe-calcite cement	–18.7	129.5	22.2	Min –57	No
Thebaud I93	3916.06A	173	Primary	Late Fe-calcite cement		126.5			No
Thebaud I93	3916.06A	174	Primary	Late Fe-calcite cement	–15.6	128.8	19.6		No
Thebaud I93	3916.06A	175	Primary	Late Fe-calcite cement	–17.6	127.1	21.3		No
Thebaud I93	3916.06A	176	Primary	Late Fe-calcite cement		121.6			No
Thebaud I93	3916.06A	177	Primary	Late Fe-calcite cement	–17.5	128.4	21.2		No
Thebaud I93	3916.06A	178	Primary	Late Fe-calcite cement		127.9			??
Thebaud 5	4922.67B	179	Primary	Quartz overgrowth	–9.1	Couldn't see the bubble	13.0		No
Thebaud 5	4922.67B	180	Secondary	Detrital quartz	–6.5	179.3	9.9		Yes
Thebaud 5	4922.67B	181	Secondary	Detrital quartz	–10.5	174.2	14.5		Yes

Thebaud 5	4922.67B	182	Secondary	Detrital quartz	−7.4	159.3	11.0	Yes
Thebaud 5	4922.67B	183	Primary	Late calcite cement	−14.1	140.5	17.9	No
Thebaud 5	4922.67B	184	Primary	Late calcite cement	−16.0	Min 106.7	19.5	No
Thebaud 5	4922.67B	185	Secondary	Detrital quartz	4.7	124.4	9.4	Yes
Thebaud 5	4922.67B	186	Secondary	Detrital quartz	−0.5	117.9	0.9	Yes
Thebaud 5	4922.67B	187	Secondary	Detrital quartz	−0.3	128.7	0.5	Yes
Thebaud 5	4922.67B	188	Secondary	Detrital quartz	−0.3	126.7	0.5	Yes
Thebaud 5	4948.7B	189	Secondary	Quartz overgrowth	−2.2	139.3	3.7	Yes
Thebaud 5	4948.7B	190	Secondary	Detrital quartz	3.5	136.9	8.5	Yes
Thebaud 5	4948.7B	191	Secondary	Quartz overgrowth	−4.7	125	7.5	Yes
Thebaud 5	4948.7B	192	Secondary	Quartz overgrowth	0.4	129.3	15.6	Yes
Thebaud 5	4948.7B	193	Secondary	Quartz overgrowth	−2.0	130.1	3.4	Yes
Thebaud 5	4948.7B	194	Secondary	Quartz overgrowth	−2.0	154.5	3.4	Yes
Thebaud 5	4948.7B	195	Primary	Quartz overgrowth	−16.5	157.9	19.8	No
Thebaud 5	4948.7B	196	Primary	Quartz overgrowth	−16.9	Min 109.1	20.2	No
Thebaud 5	4948.7B	197	Secondary	Detrital quartz	−0.1	150.7	0.2	Yes
Thebaud 5	4948.7B	198	Primary	Limit detrital quartz/quartz overgrowth	−3.8	137.3	6.2	No
Thebaud 5	4948.7B	199	Primary	Limit detrital quartz/quartz overgrowth	−5.4	Min 119.5	8.4	No
Thebaud 5	4948.7B	200	Primary	Late calcite cement	−7.1	134.8	10.6	No
Thebaud 5	4948.7B	201	Primary	Late calcite cement	−5.4	127.2	8.4	No
Thebaud 5	4948.7B	202	Primary	Late calcite cement	−8.2	134.8	11.9	No
Thebaud 5	4948.7B	203	Primary	Late calcite cement	−20.2	152.9	22.5	No
Thebaud 5	4948.7B	204	Primary	Late calcite cement		Min 122.6		No
Thebaud 5	4948.7B	205	Primary	Late calcite cement		Min 128.4		No
Thebaud 5	4948.7B	206	Primary	Late calcite cement	−19.8	147.8	22.2	No
Thebaud 5	4948.7B	207	Primary	Late calcite cement	−19.3	129.3	21.9	No

*The size of the primary inclusions is from 2 to 5 μm; vapor is 5 to 8% vapor. For the final heating for the melting temperature, we used 1 to 2°C/min at the point of phase change. For the final heating for the homogenization temperature, we used 2°C/min at the point of phase change. For the eutectic temperature, we used 5°C/min. There are no hydrocarbons in the primary inclusions and inconsistent hydrocarbons in secondary inclusions. There are hydrocarbons in the secondary inclusions in the fractures. Melting temperature (°C) = temperature of last ice melting; eutectic temperature (°C) = temperature of the first liquid formation; homogenization temperature (°C) = temperature when the bubble disappears.

**From Bodnar and Vityk (1994).