Saskatchewan
Energy and Mines

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Geological Survey

Geology of Rare Element Pegmatites in the Hanson Lake Area (NTS 63L-10,-15)

Sheet 2: Pegmatites 91-G and 91-H

Preliminary Geological Map (1991)

by: **D. G. MacDougall**

(S-2)

Legend:

3	pegmatite
2	amphibolite
1	quartz-diorite gneiss

SYMBOLS:

Topographic

	Sphagnum bog
	Jackpine and spruce scrub

Geologic - General

	Limit of outcrop
	Lithologic contact; visible on outcrop; probable in overburdened area
15cm	Narrow pegmatite vein; width indicated

Geologic - Structural

60	Strike of foliation; with dip; no dip measured
	Outcrop pattern of local foliation
60	Axis of minor fold with plunge
45	Dip of pegmatite contact surface
30cm	Fracture with displacement

Mineralogic/Petrographic

●	Beryl
1;2.1·5;3.3	Notation for number and size of beryls: first figure denotes number of crystals; second figure denotes crystal diameter in centimetres; single figure denotes diameter of single crystal
×	Spodumene
△	Columbite
■	Magnetite
	Conspicuous club-shaped K-feldspars
	Prominent banded aplite zone (also apz)
ap	Aplite
p	Pegmatite

Miscellaneous

+20mN	Base line marker showing metres north of origin
	Sample channel cut by diamond saw
0091	Grab sample or small channel sample site and number

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CHANNEL 7(west branch of 91 H at 483mN)

SAMPLE No.	0056	0057	0058	0059
ppm				
Be	42.0	14.1	6.4	96.2
Li	88	16	14	190
Nb	80	116	225	68
Ta	20	63	171	35
Sn	26	16	30	30
Sr	89	25	20	118
Rb	1420	1620	1600	1230
Cs	13	13	12	20

CHANNEL 6(east branch of 91-H at 476mN)

SAMPLE No.	0049	0050	0051	0052	0053	0054	0055	0060
ppm								
Be	138.3	5.5	44.5	93.9	813.0	74.5	9.8	13.2
Li	43	38	30	30	62	37	177	1033
Nb	101	96	106	81	39	27	195	34
Ta	31	24	43	73	108	22	36	9
Sn	70	40	33	26	43	40	300	70
Sr	12	12	12	24	13	36	23	472
Rb	220	430	1010	2820	1470	4370	1330	1190
Cs	5	5	12	46	51	73	27	86

CHANNEL 4 (west branch of 91-H at 226mN)

0034	0035	0036	0037
8.1	6.0	6.4	7.0
113	37	67	158
89	61	41	117
17	11	7	21
75	37	62	81
85	10	15	129
770	1310	2510	900
10	13	23	10

CHANNEL 3a,b,c(three separate 30 cm channels at 224mN-226mN)

SAMPLE No.	0028	0029	0030
ppm			
Be	19.6	56.2	227.8
Li	106	777	394
Nb	74	174	83
Ta	31	85	109
Sn	32	140	60
Sr	27	21	33
Rb	3000	1920	3550
Cs	152	205	437

Analytical methods; Be, Li by HF-HNO$_3$ HCLO$_4$-HCl extraction and Atomic Absorption. Nb, Sn, Sr by X-ray Fluorescence. Ta, Rb, Cs by Neutron Activation. Analyst; Bondar-Clegg & Co.

CHANNEL 5(east branch of 91-H at 226mN)

SAMPLE No.	0038	0039	0040	0041	0042	0043	0044	0045	0046	0047	0048
ppm											
Be	105.5	6.4	6.5	4.6	4.7	19.2	15.0	7.8	7.4	4.9	12.5
Li	46	69	194	134	63	105	56	283	297	73	81
Nb	124	94	240	103	109	153	114	140	211	60	87
Ta	106	17	36	18	22	34	48	20	23	8	22
Sn	29	18	56	44	29	64	27	300	90	65	74
Sr	44	13	3	10	18	5	7	16	16	36	70
Rb	2320	1720	290	1440	2430	730	720	2410	2080	3400	1590
Cs	159	48	12	25	65	14	10	32	22	25	15

CHANNEL 2 (181mN)

0015	0016
18.8	203.8
50	73
76	87
14	21
54	54
88	100
1440	590
16	14

CHANNEL 8 (interior of 91-H at 133.5mN)

0065	0061	0062	0063	0064
6.5	5.6	4.4	230.4	6.6
42	199	38	45	126
61	150	17	18	165
12	26	4	3	26
26	100	27	19	115
8	7	28	25	9
980	570	3690	4540	1360
8	8	31	78	12

CHANNEL 1 (90mN)

SAMPLE No.	0013	0014
ppm		
Be	69.5	297.3
Li	14	50
Nb	73	121
Ta	25	31
Sn	70	53
Sr	27	78
Rb	2190	650
Cs	29	17

CHANNEL 10 (91-H at 19mN)

SAMPLE No	0068	0069	0070	0071	0072	0073	0074	0075	0076	0077
ppm										
Be	303.6	116.0	22.5	13.2	10.8	140.0	100.0	12.1	49.2	40.5
Li	56	91	75	148	28	182	148	175	305	283
Nb	115	78	111	133	72	117	133	134	161	34
Ta	112	20	30	28	21	59	99	26	28	10
Sn	18	51	48	96	< 5	165	175	120	190	36
Sr	66	17	9	6	1	12	10	8	14	181
Rb	2020	2130	1130	650	210	1630	1350	1170	1420	1720
Cs	37	25	25	15	17	47	36	12	14	22

Project A.148 of 1991, Database No. 9133

The area was geologically mapped by D.G. MacDougall (project leader) with the assistance of Donald Williams (1991)

This preliminary map was printed from the geologist's manuscript and is issued with the Summary of Investigations 1991, Saskatchewan Geological Survey.

Sheet 1: Pegmatite 91-H, at 1:20 scale
Sheet 2: Pegmatites 91-G and 91-H, at 1:500 scale
Sheet 3: Hanson Lake Pegmatite Field, at 1:5000 scale

The project was funded by the Province of Saskatchewan under the Canada-Saskatchewan Partnership Agreement on Mineral Development 1990-1995.

This map may be referenced as part of the following publication:
MacDougall, D.G. (1991): Rare element pegmatites in the Hanson Lake pegmatite field; in Summary of Investigations 1991, Saskatchewan Geological Survey; Saskatchewan Energy and Mines, Miscellaneous Report 91-4.