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Geological Report on the Kutatush River Area - Reeves, Sewell, Penhorwood, Kenogaming Townships

for

Robert S. Middleton Exploration Services Inc.

May 1987

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Maps
(in pocket)

Geologicial Report on the Kukatush River Area - Reeves, Sewell, Penhorwood, Kenogaming Townships.

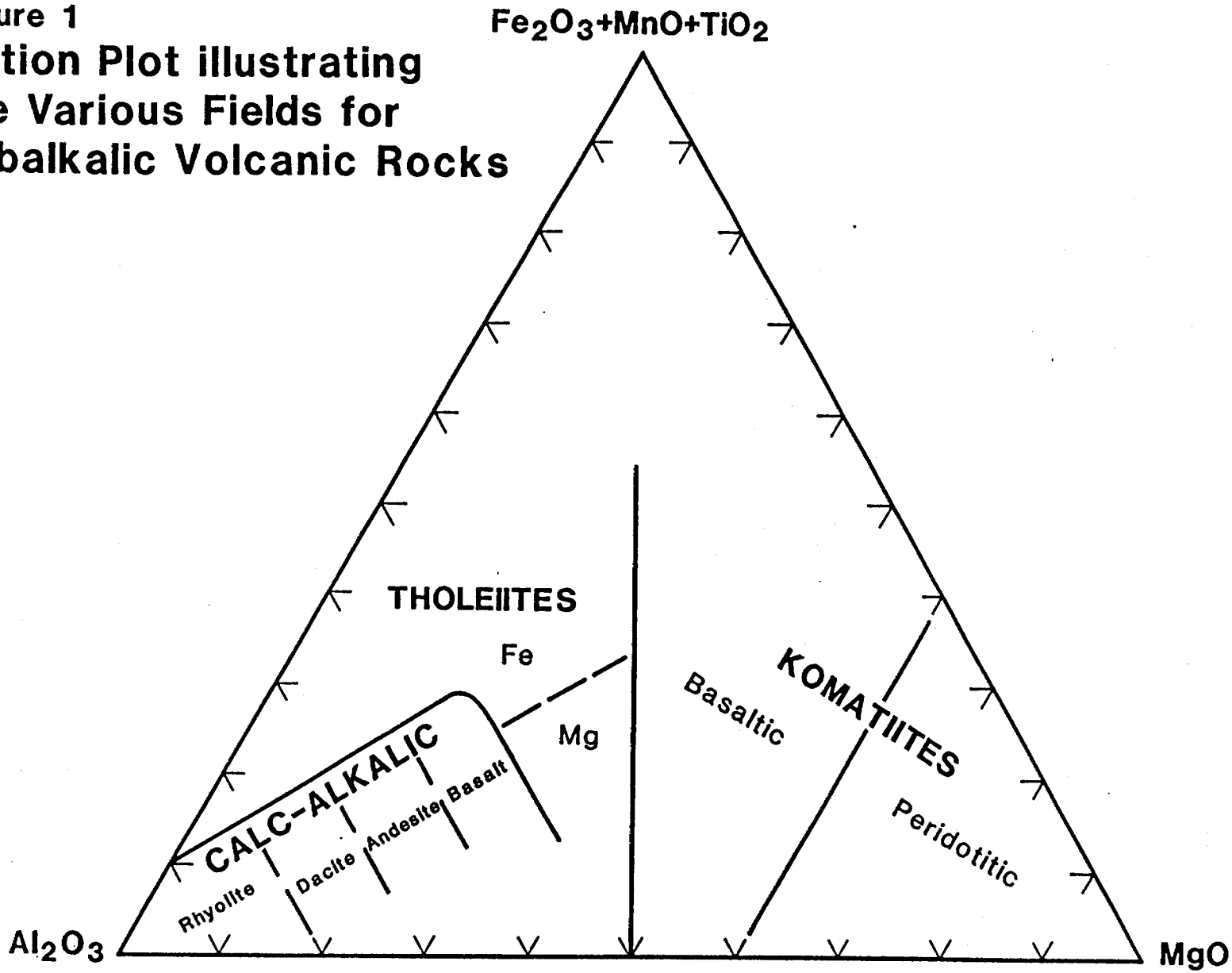
General Statement

This report summarizes the findings of ten days geolgical field work in the 4 - corners area of Reeves - Sewell - Penhorwood - Kenogaming Townships. Field work was divided equally between examining outcrops on the mining claims outlined on Plan 1, and the network of logging roads located in NE Penhorwood Township. A number of samples were taken for whole rock chemical analyses, the locations of which are shown on Plan 1. In addition, a few samples taken by the writer in 1984-85 are also incorporated in the report. All the analyses have been plotted on cation diagrams for which the various volcanic fields are illustrated in Figure 1.

The purpose of the work was to interpret the geology of a region somewhat larger than the claim blocks depicted on Plan 2. In this regard, it would have been advantageous to examine much of the general Kukatush area; however, the information gleaned from the limited field work, together with the general geology as outlined by Milne (1972), suffices to give a preliminary interpretation.

Figure 1

Cation Plot illustrating the Various Fields for Subalkalic Volcanic Rocks



Introduction

The Kukatush River area, although only 35 miles from Timmins, has been largely severed from the mainstream of volcanics extending westward from the Timmins camp, insofar as large granitic batholiths have intervened. As a result, only narrow, disjointed remnants of greenstone occur over a distance of 20 - 25 miles in the general Denton - Keefer - Eastern Sewell area. Nevertheless, a stratigraphic pattern similar to that of Timmins has emerged, and therefore the terminology from the Timmins area is carried over to the Kukatush area - ie. the Deloro and overlying Tisdale Group volcanic rocks, and the Porcupine Group sedimentary rocks.

Local Geology

The geology of the area examined is shown on Plan 1. Extending from Highway 101 south, the volcanic sequence appears to be one essentially composed of iron tholeiites, herein included in the Tisdale Group. Minor Deloro Group volcanics may be updomed at the south margin of the Nat River Batholith, but the area was not examined.

Pillowed variolitic flows, within the Fe-tholeiite package, occur near the west margin of claims P848133 and P932076, and are morphologically similar to those of the Vipond Group in Timmins. If carefully mapped

these flows may prove to be a valuable marker within the general area.

Tholeiitic dacites outcrop near the north boundary of Penhorwood Township. Typically these tholeiites are much lighter coloured both on fresh and weathered surfaces than the tholeiitic basalts, and may form a continuous unit across much of the northern claim block.

Mg-tholeiitic basalt appears to overlie the iron-rich tholeiitic sequence in NE Penhorwood Township (Plan 1). This apparent anomaly, Mg-tholeiites capping an iron-rich succession, may possibly be explained by the proximity of a major fault zone, whereby the Mg-tholeiites lie within a narrow upfaulted wedge.

A major tectonic zone extends through the south part of the area examined, and is interpreted to be the Destor - Porcupine Fault (DPF). Polysutured ultramafic flows, iron formation and dacitic pyroclastic rocks outcrop immediately south of the fault zone and are typical of the Deloro - Tisdale group contact south of the DPF in the Timmins area. The fault zone itself appears to be largely occupied by highly sheared and carbonatized ultramafic rocks, probably of extrusive origin, although there are little or no primary textures preserved. Quartz veins and lesser dikes of albitic granite and quartz-feldspar porphyry are common in the fault zone. Highly sheared basalts at the 4 - corners are interpreted to form part of a westerly-trending fault zone formed as a splay off the DPF (Plan 2). The continuity of this and other faults in the area is largely based on aeromagnetic and/or topographic lineaments.

Regional Geology

The regional geology is depicted on Plan 2. Here, the volcanic rocks are subdivided into the older Deloro Group and overlying Tisdale Group; all the sediments are termed Porcupine Group.

This interpretation is largely based on three suppositions: 1) the major areas of komatiitic volcanics form the base of the Tisdale Group; 2) the iron formation and spatially associated felsic volcanic rocks are part of the Deloro Group; and 3) laterally continuous volcanics of tholeiitic affinity, locally containing coarse variolitic flow units, are typical of Tisdale Group volcanism.

Chemistry

All the rocks for which chemical analyses were done are listed in the appendix. The only plots of the data presented are the cation percentages, which tend best to show the general spread in compositions (Figures 2 and 3). The coding of CA, Fe, Mg and TD as used in Plan 1 is taken from the general field in which an analysis plots on the cation diagram.

Several other plots were done on the data, specifically bivariate plots, using most of the major oxides and various ratios of these oxides. None proved entirely satisfactory in isolating particular trends or fields, so have not been included with the report.

Figure 2
Cation Plot of Analyses
Kukatush Area - 1986

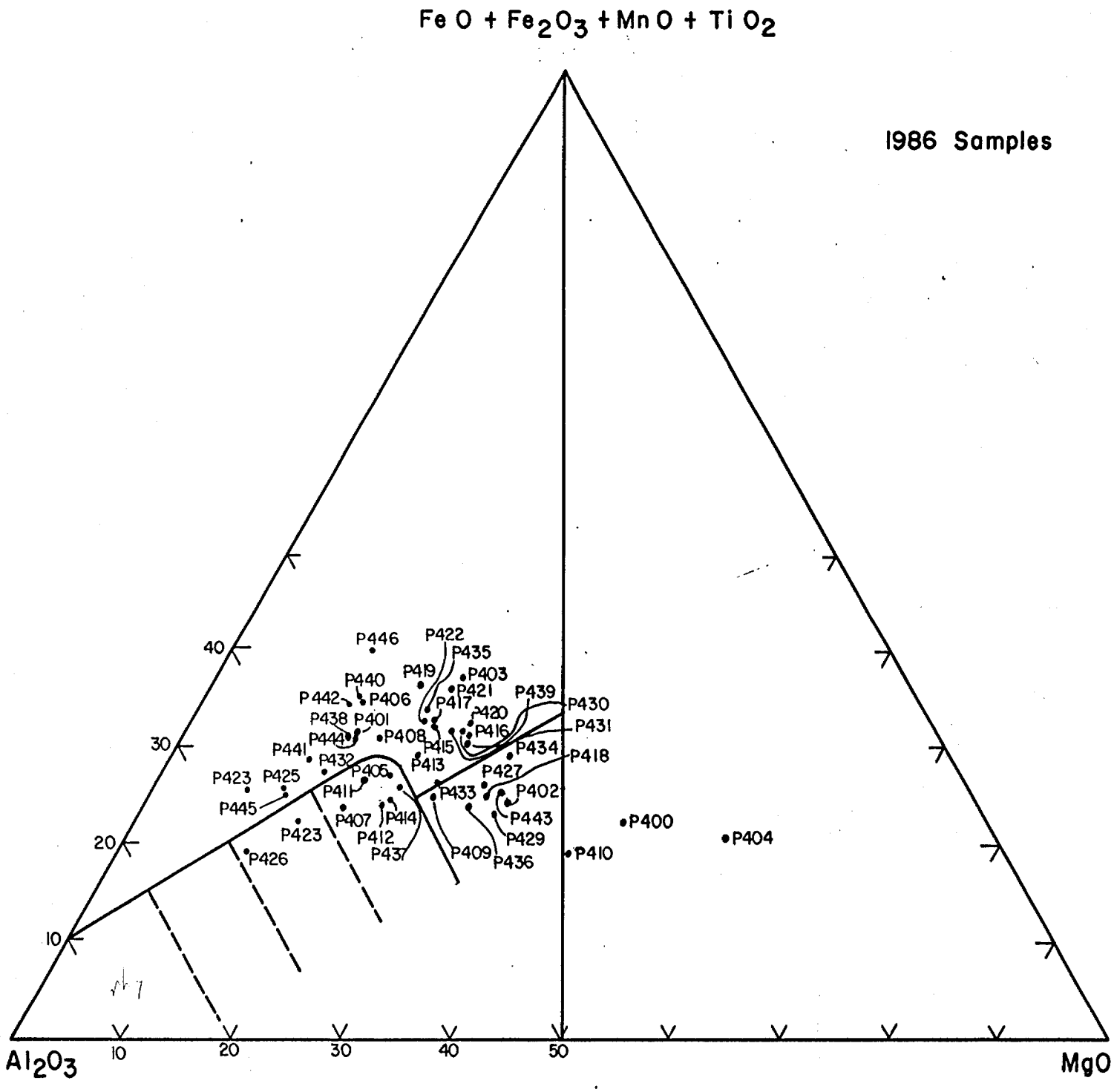
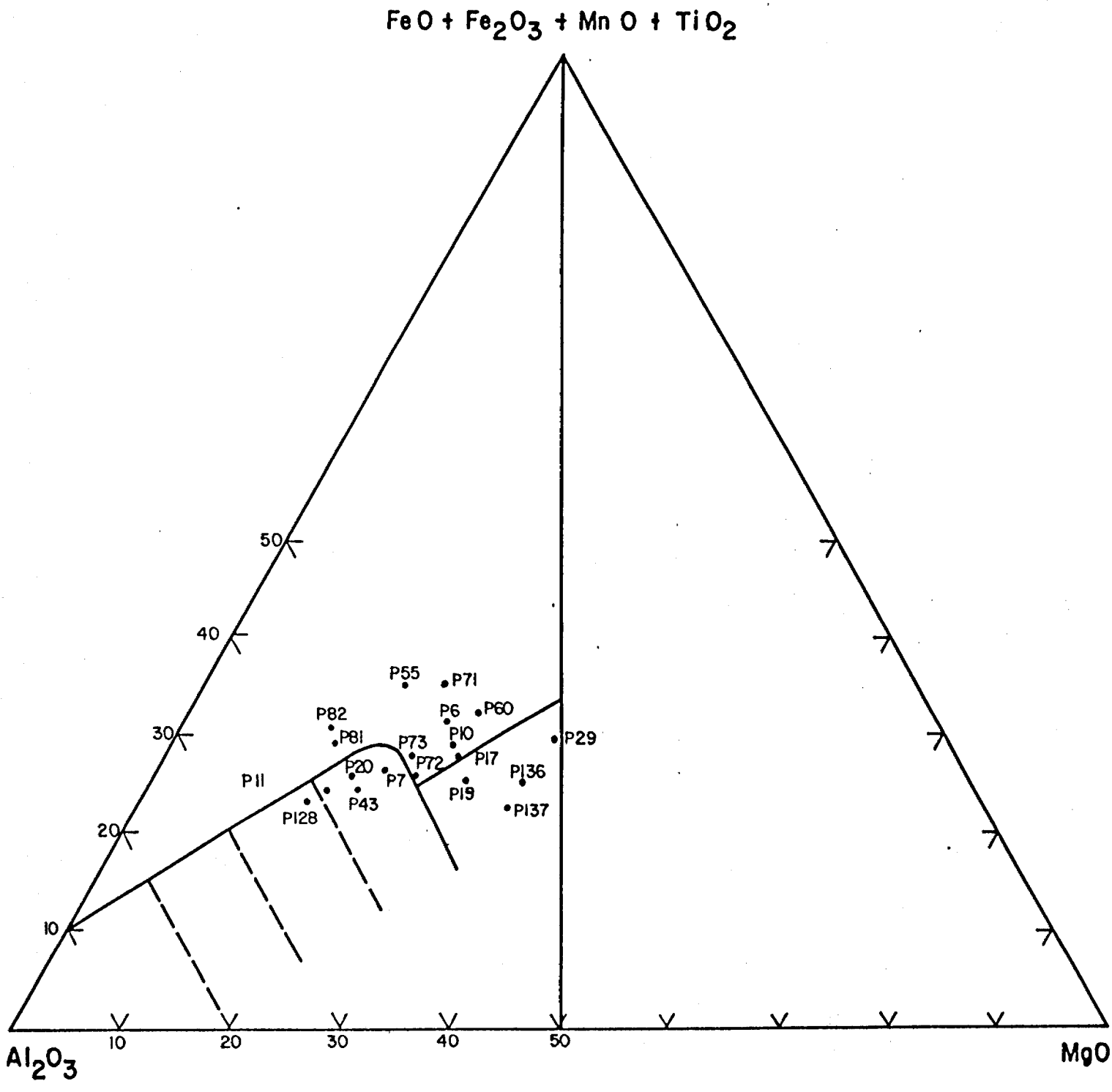


Figure 3
Cation Plot of Analyses
Kukatush Area 1984/85



Basically the data shows that the area sampled is underlain mainly by iron tholeiites with lesser Mg-tholeiites and minor intercalated calc - alkaline basalt - andesite. It is likely that the few rocks which analyzed calc-alkaline basalt are probably altered tholeiitic basalts. However, this question as to their affinity would be best answered through REE chemistry.

Economic Considerations

Given that the regional interpretation is correct and the analogy with the Timmins area is valid, then the most favorable area for gold exploration would be that north of the DPF. The area south of the DPF zone would be largely equivalent to the Shaw Dome of Timmins, where to date, only minor economic worth has been realized. However, it might be noted that the Joburke mine, a few miles west in Keith Township, is the areas only past producer, and lies within Deloro Group rocks. Nevertheless, it is the area north of the proposed DPF which contains the more favorable stratigraphy (Tisdale Group), alteration (carbonate-chlorite) and structure (major shearing) which would appear most conducive to gold mineralization.

References

Milne, V. G. 1972: Geology of the Kukatush - Sewell Lake Area, District of Sudbury; Ontario Division Mines, Geological Report 97, 116p.

APPENDIX

Table 1

Samples submitted for whole rock chemical analyses.

P400-86	Basalt, pillowed, suggestion of polysuturing
P401-86	Mafic volcanic, sheared
P402-86	Basalt, massive
P403-86	Sheared mafic volcanic, partly carbonated
P404-86	Komatiite, basaltic
P405-86	Basalt, pillowed, medium green, minor plagioclase phenocrysts
P406-86	Basalt, pillowed, komatiitic?
P407-86	Basalt - andesite, light green, pillowed?
P408-86	Basalt, pillowed, dark green
P409-86	Flow - breccia, basaltic
P410-86	Sheared, carbonatized basalt
P411-86	Basalt, pillowed, light grey green
P412-86	Basalt, massive
P413-86	Basalt, massive, carbonatized
P414-86	Basalt, pillowed, medium grey
P415-86	Basalt, massive, vesicular, dark green
P416-86	Basalt, massive
P417-86	Basalt, massive, medium grained, dark green
P418-86	Basalt, massive, fine grained, pillowed, dark green grey
P419-86	Basalt, fine grained, massive
P420-86	Basalt, fine grained, massive

P421-86	Basalt, fine grained, massive, dark grey green
P422-86	Basalt, pillowed, vesicular, dark grey
P423-86	Basalt, massive, light-medium grey green
P425-86	Basalt, massive, medium-dark grey
P426-86	Basalt, pillowed, light-medium grey, vesicular
P427-86	Basalt, massive, well foliated, dark green
P428-86	Basalt, pillowed, medium grey, strong carbonate alteration
P429-86	Basalt, massive, fine grained
P430-86	Basalt, pillowed
P431-86	Basalt, massive, medium green, medium grained
P432-86	Basalt, pillowed
P433-86	Basalt, variolitic, pillowed
P434-86	Basalt, variolitic, pillowed
P435-86	Basalt, pillowed, vesicular, medium green
P436-86	Basalt, foliated, light grey green
P437-86	Basalt, pillowed, light grey green
P438-86	Basalt, pillowed, dark green
P440-86	Basalt, pillowed, dark green
P441-86	Basalt, massive, medium green grey
P442-86	Basalt, well foliated, dark green
P443-86	Serpentinite? sheared
P444-86	Basalt, pillowed, light grey
P445-86	Andesite - dacite, fine grained, medium grey
P446-86	Basalt, sheared, probably variolitic

P43-84	Basalt, variolitic, pillowed, medium grey-green
P55-84	Carbonatized mafic volcanic
P60-84	Basalt, massive, medium grey
P71-84	Basalt, well foliated, medium green
P72-84	Basalt, massive, variolitic
P73-84	Basalt, massive, variolitic
P81-84	Basalt, pillowed, dark green
P82-84	Basalt, pillowed, dark green
P128-84	Mafic volcanic, schistose (see file T-2867)
P129-84	Chlorite schist (see file T-2867)
P136-84	Foliated mafic volcanic (see file T-2867)
P137-84	Foliated mafic volcanic (see file T-2867)
P6 -85	Basalt, pillowed
P7-85	Basalt, pillowed, light-medium green
P10-85	Basalt, pillowed
P11-85	Sericitic schist (see file T-2867)
P17-85	Basalt, massive, medium grey-green
P19-85	Basalt, massive, minor plagioclase phenocrysts
P20-85	Basalt, pillowed

X-RAY ASSAY LABORATORIES 26-JUN-85 REPORT 24558 REFERENCE FILE 20107 PAGE 1

SAMPLE	SIO2	AL2O3	CAO	MGO	NA2O	K2O	FE2O3	MNO	TIO2	P2O5	CR2O3	LOI	SUM
P43-84	53.9	14.4	9.70	3.84	3.46	0.03	8.34	0.18	1.09	0.12	0.06	4.47	99.6
P55-84	30.8	17.0	8.54	5.38	2.85	0.44	17.4	0.33	1.46	0.07	0.02	15.3	99.6
P60-84	43.0	12.8	7.20	6.37	2.22	0.22	13.6	0.20	1.19	0.09	0.02	12.9	99.9
P71-84	49.5	12.4	6.59	4.93	2.39	0.37	14.1	0.15	1.08	0.09	<0.01	8.23	99.9
P72-84	49.4	13.1	11.9	4.74	1.30	0.02	9.48	0.20	1.01	0.12	0.03	8.16	99.5
P73-84	49.6	14.0	9.02	5.18	2.90	0.02	10.4	0.19	1.11	0.19	0.04	7.47	100.1
P81-84	53.1	15.7	8.98	3.22	3.18	0.90	10.7	0.27	1.36	0.28	0.02	2.00	99.7
P82-84	48.3	14.6	11.6	3.17	2.34	0.10	10.9	0.25	1.28	0.14	0.02	7.16	99.9
P128-84	57.4	15.4	4.89	3.01	3.32	0.30	7.87	0.08	1.06	0.21	<0.01	6.39	100.0
P129-84	39.4	14.1	6.53	10.7	0.92	0.05	16.2	0.19	1.11	0.07	0.02	11.0	100.3
P-136-84-ROCK	50.7	13.6	8.26	8.91	1.01	0.08	12.1	0.16	0.81	0.07	0.02	3.62	99.4
P-137-84-ROCK	48.1	15.4	9.04	9.56	1.88	0.17	11.2	0.17	0.58	0.06	0.01	3.93	100.1
P440-86	48.5	14.6	10.4	3.82	0.80	0.05	13.8	0.23	1.29	0.10	0.02	6.62	100.3
P441-86	48.9	15.3	7.99	3.07	3.49	0.78	9.85	0.22	1.35	0.11	0.03	8.77	99.9
P442-86	52.0	15.8	2.35	4.11	3.92	0.05	14.8	0.20	1.75	0.27	<0.01	4.23	99.5
P443-86	48.9	14.0	4.78	8.23	2.67	0.12	11.8	0.08	1.02	0.11	0.06	8.16	100.0
P444-86	48.9	14.7	10.6	3.59	1.58	0.18	11.7	0.23	1.28	0.11	0.03	6.54	99.5
P445-86	55.5	16.3	7.68	2.80	2.66	1.48	8.68	0.24	1.37	0.11	0.03	2.93	99.9
P446-86	44.8	13.8	13.5	3.32	1.42	1.11	16.3	0.36	1.17	0.09	0.02	4.16	100.1
P-6-85	42.5	12.5	12.3	5.28	1.33	0.17	12.6	0.19	0.73	0.08	0.02	12.8	100.5
P-7-85	48.1	14.0	12.6	4.37	2.06	0.01	9.90	0.15	0.75	0.07	0.02	8.60	100.7
P-10-85	49.2	14.5	10.1	6.54	2.54	0.06	12.9	0.21	0.91	0.09	0.01	3.16	100.2
P-11-85	48.0	15.3	8.20	3.36	2.12	0.79	8.40	0.17	0.95	0.15	0.01	13.0	100.5
P-17-85	46.2	15.8	11.7	7.29	1.63	0.06	13.2	0.17	0.90	0.08	0.04	3.23	100.3
P-19-85	48.3	15.0	10.8	7.37	1.54	0.04	11.7	0.17	0.87	0.08	0.04	3.70	99.6
P-20-85	49.4	15.7	12.1	4.18	1.41	0.04	10.1	0.23	0.78	0.06	0.05	6.16	100.2

[redacted]LE	RB	SR	Y	ZR	NB	BA
P43-84	20	140	20	80	20	
P55-84	20	70	10	90	20	
P60-84	20	140	30	70	30	
P71-84	30	70	10	60	20	
P72-84	<10	120	20	60	10	
P73-84	10	140	30	50	10	
P81-84	40	100	20	70	20	
P82-84	10	150	30	40	30	
P128-84	10	270	30	160	20	
P129-84	<10	60	20	50	30	
P-6-85	20	80	10	30	10	50
P-7-85	30	170	10	30	20	30
P-10-85	10	140	<10	20	10	30
P-11-85	70	180	20	90	10	260
P-17-85	20	180	10	30	20	70
P-19-85	10	120	<10	30	<10	70
P-20-85	10	90	10	30	30	40
P440-86	20	190	20	80	20	20
P441-86	60	80	20	80	10	230
P442-86	10	90	20	150	20	60
P443-86	10	40	20	50	20	50
P444-86	10	120	30	70	10	70
P445-86	80	170	10	60	20	1060
P446-86	60	170	20	60	20	210

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SAMPLE	SIO2	AL203	CAO	MGO	NA20	K20	FE203	MNO	TIO2	P205	CR203	LOI	SUM
58501	64.7	15.3	2.73	1.82	3.84	1.82	4.29	0.06	0.61	0.07	0.01	3.54	98.9
58502	62.5	16.5	3.86	1.96	3.45	2.03	4.60	0.07	0.67	0.13	0.02	3.85	99.8
58503	65.4	16.1	2.68	1.23	3.84	2.94	2.98	0.05	0.51	0.11	0.01	3.23	99.2
58504 P400-86	48.0	11.6	8.73	12.2	1.80	0.15	11.2	0.20	0.57	0.08	0.13	3.54	98.2
58505 P401-86	48.9	16.8	3.28	3.90	3.27	0.67	14.1	0.12	1.53	0.12	0.02	5.54	98.3
58506 P402-86	44.6	13.6	8.43	8.25	2.11	0.05	11.4	0.17	0.67	0.05	0.04	10.4	99.8
58507 P403-86	37.0	8.13	19.8	3.62	0.21	0.15	11.0	0.25	0.43	0.04	0.01	19.8	100.4
58508 P404-86	42.7	9.76	6.83	17.6	<0.01	0.07	12.3	0.16	0.59	0.05	0.21	8.39	98.7
58509 P405-86	46.9	14.9	13.8	4.73	0.67	0.05	11.2	0.25	0.75	0.06	0.05	6.23	99.6
58510 P406-86	49.0	14.2	10.2	3.44	1.21	0.03	13.6	0.36	1.22	0.10	0.03	6.62	100.0
58511 P407-86	47.6	15.1	11.9	3.81	2.57	0.05	8.66	0.24	0.77	0.07	0.05	8.62	99.5
58512 P408-86	49.4	15.2	8.09	3.73	4.04	0.33	13.7	0.46	1.34	0.11	0.03	2.62	99.1
58513 P409-86	52.5	14.0	6.69	5.90	4.78	0.15	9.86	0.20	1.10	0.12	0.04	3.16	98.5
58514 P410-86	37.0	12.8	8.66	10.4	0.80	2.51	8.66	0.16	0.99	0.12	0.05	18.2	100.5
58515 411-86	50.2	16.0	7.69	4.55	1.91	0.08	11.3	0.26	0.84	0.07	0.06	6.16	99.1
58516 P412-86	54.7	16.3	2.28	5.22	5.15	0.11	10.2	0.13	0.98	0.15	0.01	3.54	98.8
58517 P413-86	43.5	14.5	7.60	5.30	3.18	0.38	12.5	0.21	0.88	0.07	0.02	11.6	99.8
58518 P414-86	41.7	14.8	13.4	4.80	2.47	0.39	9.81	0.20	0.59	0.06	0.05	12.0	100.3
58519 P415-86	45.6	14.0	8.10	5.47	1.26	0.21	14.2	0.17	1.20	0.10	0.02	8.85	99.2
58520 P416-86	48.9	13.4	9.30	6.39	2.49	0.08	13.9	0.19	1.18	0.10	0.02	2.47	98.4
58521 P417-86	49.4	13.3	7.65	5.25	2.79	0.50	13.9	0.18	1.11	0.09	0.01	4.08	98.3
58522 P418-86	47.9	14.6	11.1	8.03	1.42	0.06	11.8	0.17	0.88	0.07	0.04	3.70	99.8
58523 P419-86	46.2	13.7	5.58	4.67	2.62	0.04	15.9	0.27	1.58	0.12	<0.01	8.00	98.7
58524 P420-86	47.9	13.3	8.30	6.28	3.06	0.14	14.6	0.21	1.37	0.11	0.02	3.16	98.5
58525 P421-86	50.1	13.2	5.67	5.39	4.04	0.13	15.8	0.18	1.38	0.13	0.01	2.70	98.8
58526 P422-86	46.5	13.1	9.06	4.73	2.51	0.08	13.1	0.20	1.12	0.10	0.02	9.31	99.9
58527 P423-86	60.2	15.0	4.39	1.48	4.04	1.71	7.88	0.11	1.04	0.35	<0.01	2.85	99.2

SAMPLE	SIO2	AL203	CAO	MGO	NA20	K20	FE203	MNO	TIO2	P205	CR203	LOI	SUM
58528/P425-86	60.6	15.0	3.82	2.31	4.87	0.62	8.17	0.13	1.22	0.33	<0.01	3.00	100.2
58529/P426-86	57.4	18.6	2.11	2.44	5.44	1.34	6.83	0.09	1.45	0.19	0.03	3.08	99.1
58530/P427-86	48.6	14.3	8.93	8.03	2.96	0.07	12.2	0.16	0.82	0.07	0.02	3.23	99.4
58531/P428-86	49.3	16.4	8.54	3.38	1.73	0.58	7.99	0.21	0.84	0.06	0.05	10.3	99.4
58532/P429-86	44.8	14.8	7.87	8.31	2.29	0.03	11.0	0.20	0.78	0.06	0.05	9.47	99.7
58533/P430-86	47.8	14.1	7.52	6.60	2.30	0.13	15.0	0.22	1.26	0.10	0.02	3.70	98.8
58534/P431-86	46.8	13.4	11.0	6.60	1.86	0.09	13.7	0.20	1.19	0.10	0.02	4.16	99.1
58535/P432-86	51.3	15.1	6.79	2.83	3.86	0.99	9.75	0.24	1.33	0.10	0.03	6.31	98.7
58536/P433-86	49.4	13.4	10.2	5.60	2.95	0.05	10.1	0.20	1.03	0.12	0.06	5.70	98.8
58537/P434-86	49.4	13.2	8.56	7.88	1.20	0.10	13.6	0.24	1.05	0.11	0.06	3.23	98.7
58538/P435-86	47.9	14.4	9.22	4.86	0.19	0.03	15.2	0.24	1.26	0.10	0.03	5.31	98.8
58539/P436-86	47.5	14.9	9.75	7.60	1.23	0.04	11.2	0.22	0.76	0.06	0.05	5.47	98.8
58540/P437-86	47.1	15.1	12.5	4.97	0.26	0.07	11.2	0.21	0.85	0.07	0.05	6.54	99.0
58541/P438-86	46.7	15.0	12.1	3.35	1.19	0.04	12.2	0.29	0.91	0.08	0.02	6.62	98.5
58542	46.5	13.8	9.85	6.12	1.26	0.04	14.4	0.22	1.21	0.10	0.02	5.39	98.9
58543	49.4	14.8	11.5	3.05	1.44	0.05	11.0	0.23	1.25	0.10	0.02	6.08	99.0
58544	51.4	14.7	4.12	3.73	3.32	0.01	13.9	0.19	1.62	0.25	<0.01	5.00	98.3
58545	47.4	12.9	7.93	7.92	1.56	0.04	10.3	0.21	1.63	0.69	0.04	8.00	98.7
58546	47.9	12.4	10.8	6.11	1.28	0.03	11.0	0.18	0.94	0.11	0.08	8.31	99.2
58547	44.8	12.9	8.85	5.96	2.30	0.01	12.2	0.18	1.16	0.09	0.02	10.4	98.9
58548	49.6	12.9	7.02	2.58	3.42	0.12	13.8	0.22	1.48	0.12	<0.01	8.00	99.3
58549	49.2	13.0	9.26	8.00	1.81	0.14	12.3	0.22	1.06	0.11	0.05	3.47	98.6
58550	46.5	14.7	9.06	5.29	0.68	0.04	15.4	0.24	1.31	0.10	0.02	6.93	100.3
58551	49.0	14.8	6.66	3.23	1.08	0.59	12.9	0.14	1.12	0.10	0.05	9.93	99.7
58552	43.2	14.8	8.68	8.16	2.68	0.04	11.0	0.16	0.69	0.06	0.04	10.9	100.5
58553	44.1	14.7	7.10	8.00	2.97	0.04	10.9	0.16	0.70	0.05	0.05	9.70	98.5
58554	51.2	17.7	3.21	2.49	3.49	0.92	16.5	0.23	1.47	0.40	0.01	1.85	99.6

SAMPLE	SIO2	AL2O3	CAO	MGO	NA2O	K2O	FE2O3	MNO	TIO2	P2O5	CR2O3	LOI	SUM
58555	50.0	16.1	9.69	3.78	2.92	0.38	12.2	0.29	1.40	0.11	0.04	2.16	99.1
58556	45.5	14.9	11.6	5.35	1.71	0.56	13.8	0.21	1.13	0.38	0.01	3.47	98.8
58557	49.4	13.9	7.39	7.57	0.97	0.78	13.4	0.25	1.10	0.11	0.06	3.93	99.0
58558	50.6	13.0	9.27	7.56	0.80	0.25	13.8	0.24	1.00	0.10	0.06	3.23	100.0
58559	48.0	12.7	11.2	5.79	1.49	0.08	11.3	0.24	0.97	0.11	0.06	6.85	98.8
58560	48.3	13.7	8.14	7.88	0.46	0.50	13.7	0.25	1.08	0.11	0.05	4.54	98.8
58561	49.6	13.2	10.7	5.92	1.07	0.05	11.1	0.20	1.01	0.11	0.06	6.09	99.1
58562	57.6	14.3	3.12	1.65	2.24	1.95	11.3	0.21	1.61	0.13	0.01	4.93	99.1
58563	46.0	12.7	7.94	2.56	2.21	0.36	16.1	0.28	1.44	0.12	<0.01	9.16	98.9
58564	49.0	13.3	7.55	2.11	3.33	0.62	13.5	0.27	1.50	0.12	<0.01	8.08	99.4
58565	49.1	14.1	6.50	5.16	3.44	0.31	11.4	0.15	1.09	0.17	0.01	7.31	98.8
58566	45.5	13.6	8.53	5.99	0.66	0.91	12.5	0.20	0.86	0.08	0.01	10.2	99.3
58567	45.8	15.2	10.4	3.80	1.58	0.34	9.62	0.26	0.89	0.06	0.05	11.3	99.2
58568	48.0	13.5	9.05	5.20	1.99	0.11	15.9	0.18	1.59	0.12	<0.01	3.06	98.7
58569	47.6	14.3	10.9	5.79	1.26	0.07	13.3	0.22	0.89	0.08	0.02	4.47	98.9
58570	50.9	16.3	9.92	3.80	1.88	0.29	10.1	0.22	0.83	0.07	0.06	5.31	99.7

SAMPLE	RB	SR	Y	ZR	NB	BA
58501	60	250	10	130	20	500
58502	80	400	<10	130	20	470
58503	120	240	<10	140	10	620
58504	40	140	10	40	20	60
58505	40	50	20	70	30	250
58506	<10	120	10	20	<10	40
58507	10	50	10	10	20	<10
58508	20	50	<10	<10	20	80
58509	10	80	10	30	20	40
58510	10	150	20	40	10	40
58511	<10	80	20	30	30	40
58512	40	130	20	60	20	170
58513	<10	80	40	50	10	70
58514	70	190	20	40	10	250
58515	30	80	<10	30	10	60
58516	20	80	20	100	30	120
58517	20	110	20	40	10	90
58518	30	70	10	30	20	110
58519	30	110	20	70	<10	70
58520	30	100	10	50	30	40
58521	40	60	10	50	50	130
58522	20	110	10	30	10	50
58523	10	30	30	70	20	90
58524	20	60	30	70	10	60
58525	10	50	30	80	40	80
58526	20	50	10	40	20	50
58527	100	210	30	200	20	410

SAMPLE	RB	SR	Y	ZR	NB	BA
58528	20	180	40	190	10	260
58529	70	180	20	130	10	320
58530	<10	90	10	20	30	60
58531	50	160	10	30	<10	120
58532	10	50	10	20	20	70
58533	10	120	30	50	20	90
58534	10	130	20	50	<10	40
58535	40	20	20	60	10	560
58536	<10	110	10	60	20	40
58537	<10	100	10	70	10	70
58538	10	170	30	50	20	40
58539	20	70	10	20	<10	30
58540	30	150	10	20	30	40
58541	<10	200	20	50	10	20
58542	<10	110	40	60	20	40
58543	<10	140	30	60	10	50
58544	10	180	30	150	20	70
58545	<10	460	30	150	20	60
58546	10	110	30	50	20	40
58547	<10	170	20	60	<10	70
58548	40	90	20	80	30	80
58549	10	110	20	50	20	50
58550	20	110	20	50	20	60
58551	50	120	20	50	10	570
58552	<10	80	10	50	20	60
58553	10	120	10	20	20	50
58554	70	160	60	270	20	300

SAMPLE	RB	SR	Y	ZR	NB	BA
58555	40	120	30	120	20	160
58556	50	680	10	560	20	210
58557	50	70	10	280	10	400
58558	50	120	20	170	20	120
58559	10	60	20	50	20	50
58560	40	80	<10	40	20	210
58561	10	110	20	50	20	40
58562	100	60	40	90	20	430
58563	30	60	30	80	10	160
58564	40	70	30	80	10	240
58565	30	140	20	110	10	110
58566	30	100	20	30	10	160
58567	20	100	10	20	20	70
58568	20	120	20	60	20	70
58569	20	200	10	30	20	50
58570	20	90	10	50	10	110

SAMPLE	AU PPB	CO2 %	AS PPM
58501	<1	1.64	60.0
58502	1	1.83	0.7
58503	<1	1.79	6.8
58504	2	0.27	1.8
58505	12	2.46	37.0
58506	1	6.21	0.5
58507	1	17.2	0.5
58508	3	2.13	3.6
58509	9	3.33	2.1
58510	2	3.56	1.0
58511	<1	5.36	32.0
58512	4	1.61	28.0
58513	2	0.59	20.0
58514	<1	15.5	8.4
58515	9	2.35	20.0
58516	<1	0.40	8.0
58517	2	8.79	40.0
58518	3	8.76	9.4
58519	<1	4.49	3.2
58520	<1	0.09	5.4
58521	390	1.46	2.8
58522	<1	0.60	10.0
58523	7	4.42	12.0
58524	1	0.86	6.8
58525	2	0.58	1.8
58526	1	5.75	14.0
58527	<1	1.14	0.4
58528	2	0.72	0.6
58529	1	0.24	2.8
58530	5	0.42	0.4
58531	2	6.69	0.7
58532	4	4.93	0.5
58533	5	0.14	0.6
58534	2	1.61	0.5
58535	7	3.68	1.8
58536	2	3.46	0.1
58537	3	0.03	0.1
58538	<1	1.52	0.3
58539	<1	1.72	4.0
58540	2	3.14	0.8
58541	1	3.91	0.5
58542	4	1.93	2.4
58543	1	3.97	3.2
58544	<1	1.80	0.5
58545	<1	3.36	0.3
58546	11	5.02	52.0
58547	<1	6.41	0.3
58548	2	5.46	0.3

SAMPLE	AU PPB	CO2 %	AS PPM
58549	<1	0.44	0.6
58550	2	2.86	52.0
58551	2	6.14	9.5
58552	4	6.03	7.2
58553	6	5.29	10.0
58554	7	0.39	2.2
58555	<1	0.59	4.4
58556	1	0.65	6.4
58557	<1	0.33	0.4
58558	1	0.09	2.2
58559	<1	3.99	11.0
58560	<1	0.57	0.2
58561	6	2.96	0.2
58562	<1	2.46	6.0
58563	1	6.38	0.1
58564	<1	6.08	0.1
58565	<1	4.11	0.3
58566	2	6.47	0.3
58567	1	7.95	21.0
58568	<1	0.41	0.5
58569	3	1.62	0.6
58570	3	2.43	24.0

SAMPLE	AU PPB	AS PPM	SB PPM
58571	5	3.6	<0.1
58572	56	--	--
58573	5	--	--
58574	26	--	--
58575	<1	--	--
58576	41	18.0	0.3
58577	100	72.0	2.4
58578	>10000	2.4	0.3
58579	20	--	--
58580	11	--	--
58581	4	0.9	<0.1
58582	3	0.3	<0.1
58583	6	--	--
58584	7	0.7	<0.1
58585	1500	--	--
58586	14	--	--
58587	360	140.	0.3
58588	11	4.8	<0.1
58589	13	6.4	0.2
58590	5	0.7	0.2
58591	3	--	--
58592	25	20.0	<0.1
58593	3	--	--
58594	<1	--	--
58595	9	0.5	<0.1
58596	3	0.7	<0.1
58597	48	5.2	<0.1
58598	27	84.0	0.5
58599	<1	--	--

> - CONCENTRATION TOO HIGH FOR GEOCHEMICAL ANALYSIS

X-RAY ASSAY LABORATORIES · 26-JAN-87

JENSEN CATION PLOT WITH GRUNSKY MODIFICATION GRAPH 1

D.R. PYKE (REP:21999 - REF:17625)

SAMPLE	SYMBOL	CODE	AL203	MGO	FE203+MNO+TIO2
P40-84	1	AC	67.56	16.06	16.37
P41-84	2	AC	69.93	12.63	17.44
P42-84	3	AC	68.51	15.89	15.60
P43-84	4	BC	56.68	19.11	24.21
P55-84	5	FT	47.11	18.86	34.03
P60-84	6	BT	42.05	26.46	31.49
P71-84	7	FT	43.61	21.93	34.46
P72-84	8	BC	50.51	23.11	26.38
P73-84	9	BT	49.94	23.37	26.70
P81-84	10	AT	56.75	14.72	28.53
P82-84	11	AT	54.96	15.09	29.95
P112-84	12	RC	82.67	7.82	9.51
P114-84	13	RC	84.96	6.38	8.67
P117-84	14	RC	84.39	7.09	8.52
P119-84	15	DC	73.90	11.89	14.21
P120-84	16	RC	80.05	8.40	11.55
P120A-84	17	RC	84.06	6.91	9.03
P121-84	18	RC	86.83	6.17	7.01
P128-84	19	AC	61.69	15.25	23.07
P129-84	20	BT	36.32	34.86	28.82

CODE REFERENCE - JENSEN CATION PLOT

UK - ULTRAMAFIC KOMATIITE	BK - BASALTIC KOMATIITE
FT - IRON RICH BASALT	MT - HIGH MAGNESIUM BASALT
AT - THOLEIITIC ANDESITE	DT - THOLEIITIC DACITE
RT - THOLEIITIC RHYOLITE	BT - THOLEIITIC BASALT
AC - CALC-ALKALINE ANDESITE	BC - CALC-ALKALINE BASALT
RC - CALC-ALKALINE RHYOLITE	DC - CALC-ALKALINE DACITE
** - NOT DEFINED	

L. S. JENSEN (1976): A NEW CATION PLOT FOR CLASSIFYING SUBALKALIC VOLCANIC ROCKS. ONTARIO DIVISION OF MINES, MISC. PAPER 66.

E. C. GRUNSKY (1981): NO. 16 AN ALGORITHM FOR THE CLASSIFICATION OF SUBALKALIC VOLCANIC ROCKS USING THE JENSEN CATION PLOT. SUMMARY OF FIELD WORK. ONTARIO DIV. OF MINES, MISC. PAPER 100.

X-RAY ASSAY LABORATORIES 26-JAN-87

JENSEN CATION PLOT WITH GRUNSKY MODIFICATION GRAPH 1

D.B. PYKE (REP:22563 - REF:18041)

SAMPLE	SYMBOL	CODE	AL203	MGO	FE203+MNO+TIO2
P-136-84-ROCK	1	MT	40.93	33.91	25.15
P-137-84-ROCK	2	MT	43.83	34.41	21.75
P-174-84-ROCK	3	RC	86.60	4.62	8.79
P-182-84-ROCK	4	RC	83.03	7.71	9.26
P-222-84-ROCK	5	AC	65.17	15.75	19.08
P-228-84-ROCK	6	DC	70.03	12.03	17.95
P-245-84-ROCK	7	AT	58.67	9.30	32.03
P-247-84-ROCK	8	AT	50.79	16.08	33.13
P-248-84-ROCK	9	AT	56.29	15.58	28.14
P-249-84-ROCK	10	FT	35.70	17.45	46.85
P-250-84-ROCK	11	FT	41.21	20.69	38.11

CODE REFERENCE - JENSEN CATION PLOT

UK - ULTRAMAFIC KOMATIITE	BK - BASALTIC KOMATIITE
FT - IRON RICH BASALT	MT - HIGH MAGNESIUM BASALT
AT - THOLEIITIC ANDESITE	DT - THOLEIITIC DACITE
RT - THOLEIITIC RHYOLITE	BT - THOLEIITIC BASALT
AC - CALC-ALKALINE ANDESITE	BC - CALC-ALKALINE BASALT
RC - CALC-ALKALINE RHYOLITE	DC - CALC-ALKALINE DACITE
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X-RAY ASSAY LABORATORIES 26-JAN-87

JENSEN CATION PLOT WITH GRUNSKY MODIFICATION GRAPH 1

D.R. PYKE (REP:24558 - REF:20107)

SAMPLE	SYMBOL	CODE	AL203	MGO	FE203+MNO+TI02
P-1-85	1	DC	71.83	9.34	18.83
P-6-85	2	BT	44.92	24.00	31.08
P-7-85	3	BC	52.96	20.91	26.13
P-10-85	4	BT	45.69	26.06	28.26
P-11-85	5	BC	59.67	16.57	23.76
P-17-85	6	BT	46.27	27.00	26.72
P-19-85	7	BT	46.20	28.71	25.09
P-20-85	8	BC	55.88	18.81	25.31
P-31-85	9	DC	75.07	9.91	15.02
P-32-85	10	DC	71.85	13.98	14.16
P-33-85	11	RC	86.63	6.74	6.63
P-34-85	12	AC	61.90	17.65	20.45

CODE REFERENCE - JENSEN CATION PLOT

UK - ULTRAMAFIC KOMATIITE	BK - BASALTIC KOMATIITE
FT - IRON RICH BASALT	MT - HIGH MAGNESIUM BASALT
AT - THOLEIITIC ANDESITE	DT - THOLEIITIC DACITE
RT - THOLEIITIC RHYOLITE	BT - THOLEIITIC BASALT
AC - CALC-ALKALINE ANDESITE	BC - CALC-ALKALINE BASALT
RC - CALC-ALKALINE RHYOLITE	DC - CALC-ALKALINE DACITE
** - NOT DEFINED	

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X-RAY ASSAY LABORATORIES 26-JAN-87

JENSEN CATION PLOT WITH GRUNSKY MODIFICATION GRAPH 1

D.R. PYKE (REP:30194 - REF:25722)

SAMPLE	SYMBOL	CODE	AL2O3	MGO	FE2O3+MNO+TIO2
MP34-86	1	DC	73.99	9.58	16.43
MP35-86	2	DC	76.15	8.51	15.34
MP50-86	3	RC	88.19	4.39	7.41
P440-86	4	FT	49.95	16.53	33.52
P441-86	5	AT	57.76	14.66	27.59
P442-86	6	FT	49.83	16.39	33.78
P443-86	7	BT	42.88	31.88	25.24
P444-86	8	AT	53.08	16.39	30.52
P445-86	9	DT	61.67	13.40	24.93
P446-86	10	FT	46.92	14.28	38.80

CODE REFERENCE - JENSEN CATION PLOT

UK - ULTRAMAFIC KOMATIITE	BK - BASALTIC KOMATIITE
FT - IRON RICH BASALT	MT - HIGH MAGNESIUM BASALT
AT - THOLEIITIC ANDESITE	DT - THOLEIITIC DACITE
RT - THOLEIITIC RHYOLITE	BT - THOLEIITIC BASALT
AC - CALC-ALKALINE ANDESITE	BC - CALC-ALKALINE BASALT
RC - CALC-ALKALINE RHYOLITE	DC - CALC-ALKALINE DACITE
** - NOT DEFINED	

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X-RAY ASSAY LABORATORIES 26-JAN-87

JENSEN CATION PLOT WITH GRUNSKY MODIFICATION GRAPH 1

D.R. PYKE (REP:30218 - REF:25768)

SAMPLE	SYMBOL	CODE	AL2O3	MGO	FE2O3+MNO+TIO2
58501	1	DC	73.65	11.08	15.27
58502	2	DC	73.68	11.07	15.25
58503	3	RC	80.83	7.81	11.37
58504	4	BK	33.44	44.48	22.08
58505	5	AT	52.83	15.51	31.65
58506	6	BT	42.68	32.75	24.57
58507	7	FT	40.28	22.68	37.04
58508	8	BK	24.18	55.15	20.67
58509	9	BC	51.93	20.85	27.22
58510	10	AT	50.23	15.39	34.38
58511	11	BC	57.83	18.45	23.72
58512	12	AT	50.92	15.80	33.28
58513	13	BT	48.95	26.09	24.97
58514	14	BK	39.72	40.81	19.47
58515	15	BC	53.89	19.38	26.73
58516	16	BC	54.09	21.91	24.00
58517	17	BT	48.50	22.42	29.08
58518	18	BC	53.52	21.95	24.53
58519	19	FT	45.35	22.41	32.24
58520	20	BT	42.89	25.86	31.25
58521	21	FT	44.85	22.39	32.76
58522	22	BT	44.28	30.80	24.92
58523	23	FT	44.25	19.08	36.67
58524	24	BT	42.10	25.14	32.75
58525	25	FT	42.42	21.91	35.67

CODE REFERENCE - JENSEN CATION PLOT

UK - ULTRAMAFIC KOMATIITE	BK - BASALTIC KOMATIITE
FT - IRON RICH BASALT	MT - HIGH MAGNESIUM BASALT
AT - THOLEIITIC ANDESITE	DT - THOLEIITIC DACITE
RT - THOLEIITIC RHYOLITE	BT - THOLEIITIC BASALT
AC - CALC-ALKALINE ANDESITE	BC - CALC-ALKALINE BASALT
RC - CALC-ALKALINE RHYOLITE	DC - CALC-ALKALINE DACITE
** - NOT DEFINED	

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X-RAY ASSAY LABORATORIES 26-JAN-87
JENSEN CATION PLOT WITH GRUNSKY MODIFICATION GRAPH 2
D.R. PYKE (REP:30218 - REF:25768)

SAMPLE	SYMBOL	CODE	AL2O3	MGO	FE2O3+MNO+TIO2
58526	1	FT	46.28	21.13	32.58
58527	2	DT	66.24	8.27	25.50
58528	3	DT	62.47	12.17	25.36
58529	4	AC	68.80	11.41	19.79
58530	5	BT	43.49	30.88	25.63
58531	6	AC	61.97	16.15	21.87
58532	7	MT	44.88	31.87	23.24
58533	8	BT	42.75	25.30	31.95
58534	9	BT	42.68	26.58	30.74
58535	10	AT	58.24	13.81	27.95
58536	11	BT	48.32	25.54	26.14
58537	12	BT	40.38	30.48	29.14
58538	13	FT	46.11	19.68	34.20
58539	14	BT	46.12	29.75	24.13
58540	15	BC	51.66	21.50	26.84
58541	16	AT	53.93	15.23	30.84
58542	17	BT	43.58	24.44	31.97
58543	18	AT	55.55	14.48	29.97
58544	19	FT	49.89	16.01	34.09
58545	20	BT	42.04	32.64	25.31
58546	21	BT	44.48	27.72	27.81
58547	22	BT	44.34	25.90	29.76
58548	23	FT	49.47	12.51	38.02
58549	24	BT	40.87	31.81	27.32
58550	25	FT	45.61	20.76	33.64

CODE REFERENCE - JENSEN CATION PLOT

UK - ULTRAMAFIC KOMATIITE	BK - BASALTIC KOMATIITE
FT - IRON RICH BASALT	MT - HIGH MAGNESIUM BASALT
AT - THOLEIITIC ANDESITE	DT - THOLEIITIC DACITE
RT - THOLEIITIC RHYOLITE	BT - THOLEIITIC BASALT
AC - CALC-ALKALINE ANDESITE	BC - CALC-ALKALINE BASALT
RC - CALC-ALKALINE RHYOLITE	DC - CALC-ALKALINE DACITE
** - NOT DEFINED	

L. S. JENSEN (1976): A NEW CATION PLOT FOR CLASSIFYING SUBALKALIC VOLCANIC ROCKS. ONTARIO DIVISION OF MINES, MISC. PAPER 66.

E. C. GRUNSKY (1981): NO. 16 AN ALGORITHM FOR THE CLASSIFICATION OF SUBALKALIC VOLCANIC ROCKS USING THE JENSEN CATION PLOT. SUMMARY OF FIELD WORK. ONTARIO DIV. OF MINES, MISC. PAPER 100.

Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

#199

2.11187

Mining Act

DOCUME
W880(

42A04NW0015 2.11187 SEWELL

900

Type of Survey(s): Assaying

Township or Area: Sewell

Claim Holder(s): Goldrock Resources Inc.

Prospector's Licence No.: T-4715

Address: c/o P.O. Box 1637 Timmins, Ont. P4N 7W8

Survey Company: D.R. PYKE & ASSOCIATES

Date of Survey (from & to): 01 07 86 (Day Mo. Yr.) 01 09 86 (Day Mo. Yr.)

Total Miles of line Cut: N/A

Name and Address of Author (of Geo-Technical report): D.R. PYKE 31 DELAIR CRES. THORNHILL, ONT. L3T 2M3

Credits Requested per Each Claim in Columns at right

Special Provisions

For first survey:
Enter 40 days. (This includes line cutting)

For each additional survey:
Using the same grid:
Enter 20 days (for each)

	Days per Claim
Geophysical	
- Electromagnetic	
- Magnetometer	
- Radiometric	
- Other	
Geological	
Geochemical	

Man Days

Complete reverse side and enter total(s) here

	Days per Claim
Geophysical	
- Electromagnetic	
- Magnetometer	
- Radiometric	
- Other	
Geological	
Geochemical	

RECEIVED
JUL 4 1988
MINING LANDS SECTION

Airborne Credits

Note: Special provisions credits do not apply to Airborne Surveys.

	Days per Claim
Electromagnetic	
Magnetometer	
Radiometric	

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.
P	755312	23
	755313	20
	755317	20
	848909	20
	848910	20
	848911	20
	848912	20
	848913	20
	848914	20
	848915	20

Prefix	Number	Expend. Days Cr.

RECEIVED
TIMMINS MINING DIVISION
APR 26 1988

Expenditures (excludes power stripping)

Type of Work Performed: Assaying

Performed on Claim(s): 755310, 755315, 755318, 755317, 932076.

Calculation of Expenditure Days Credits

Total Expenditures: $ 3045.75 ÷ 15 = Total Days Credits: 203

Instructions

Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Total number of mining claims covered by this report of work: 10

For Office Use Only

Total Days Cr. Recorded: 203

Date Recorded: April 26/88

Date Approved as Recorded: APR 26 1988

Mining Recorder: D. White

See Revised Statement

Date: April 26/88

Recorded Holder or Agent (Signature)

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying

Dan Farrow c/o Box 1637

Timmins, Ont. P4N 7W8

Date Certified: April 26/88

Certified by (Signature)

Ontario

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

July 12, 1988

Your file: W8806-199
Our file: 2.11187

Mining Recorder
Ministry of Northern Development and Mines
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Re: Data for Assaying submitted under Section 77(19)
of the Mining Act R.S.O. 1980 on Mining Claims
P 755312 et al in the Township of Sewell

The enclosed statement of assessment work credits for Assaying has been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

W.R. Cowan, Manager
Mining Lands Section
Mines & Minerals Division

Whitney Block, Room 6610
Queen's Park
Toronto, Ontario
M7A 1W3

R.M.
RM:pl
Enclosure (2)

cc: Resident Geologist
Timmins, Ontario

Goldrock Resources Inc.
c/o P.O. Box 1637
Timmins, Ontario
P4N 7W8

Ministry of Northern Development and Mines

Ontario

Technical Assessment Work Credits

File: 2.11187

Date: July 12, 1988

Mining Recorder's Report of Work No.: W8806-199

Recorded Holder: Goldrock Resources Inc.

Township or Area: Sewell Township

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	$3,045.75 SPENT ON ASSAYING SAMPLES TAKEN FROM MINING CLAIMS:
Electromagnetic _____ days	P 755317-318
Magnetometer _____ days	932076
Radiometric _____ days	
Induced polarization _____ days	
Other _____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical _____ days	
Man days ☐ Airborne ☐	
Special provision ☐ Ground ☐	
☐ Credits have been reduced because of partial coverage of claims.	203 DAYS CREDIT ALLOWED WHICH MAY BE GROUPED IN ACCORDANCE WITH SECTION 76(6) OF THE MINING ACT R.S.O. 1980.
☐ Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

☐ not sufficiently covered by the survey ☐ insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

REFERENCES

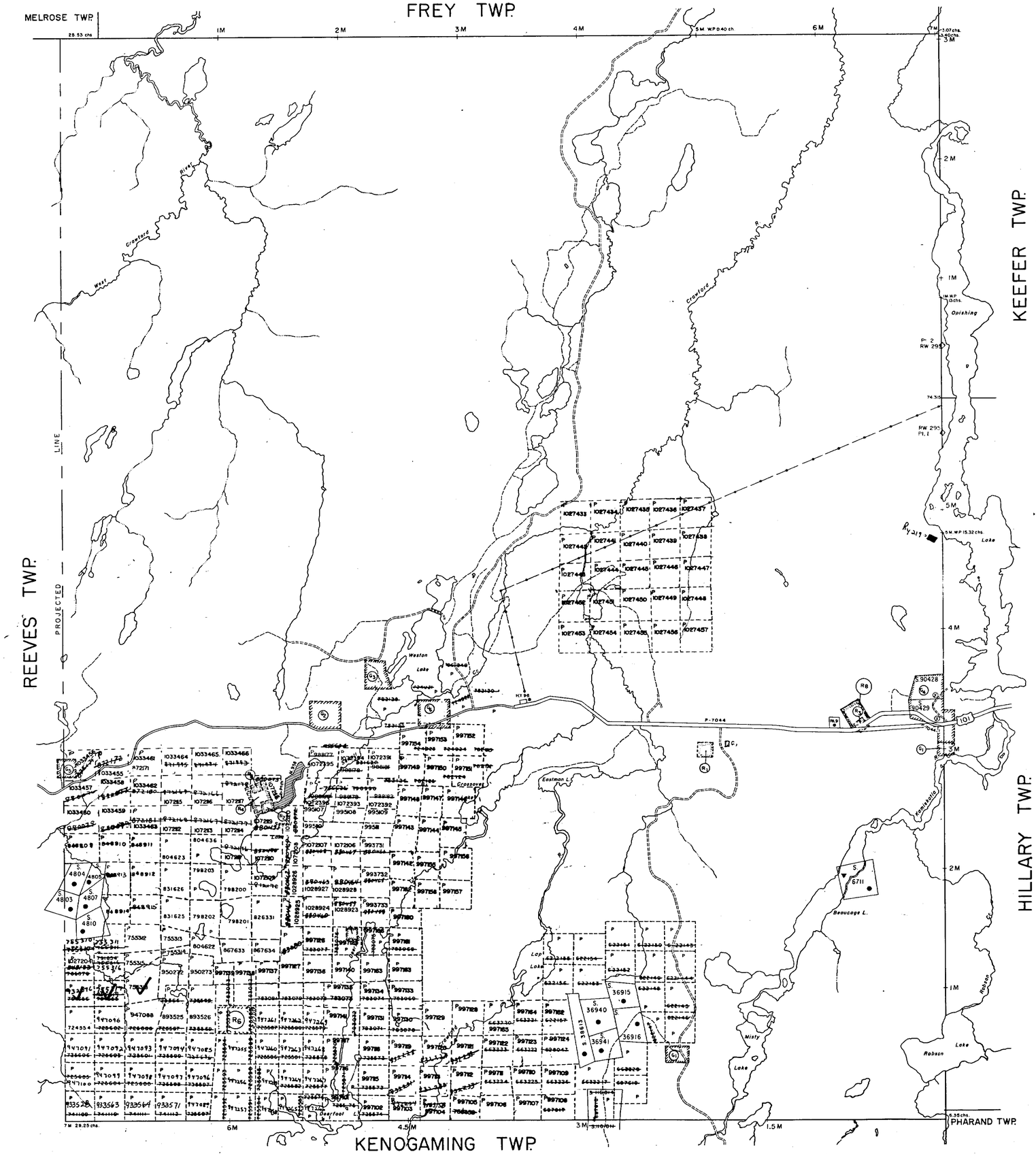
AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M.+ S. – MINING AND SURFACE RIGHTS

	Description	Order No.	Date	Disposition	File
1	SEC 43/70	W. 30/77	11/3/77	S.R.O.	135748
2	SEC 43/70	W. 19/78	10/4/78	S.R.O. + M.R.O	188543
3	SEC 43/70	W 10/78	14/11/78	S.R.O.	135748
4	DUMP ATTENUATION ZONE				
5	SEC 36/80	W 46/83	14/8/83	M. + S.	
6	Not open for staking AWAITING INSPECTION 71/86				
7	"FILED ONLY" D-28/86				
8	NOT OPEN FOR STAKING. BONA FIDE APPLICATION UNDER PUBLIC LANDS ACT PENDING 21/01/87				

SAND AND GRAVEL

1	GRAVEL	FILE	135748	
2	M.T.C.	PIT	1577	
3	M.T.C	PIT	3M-1	FILE 135748
4	M.T.C	PIT	1576	
5	M.T.C.	PIT	3M-2	FILE 184702
6	M.T.C	PIT	1243	



LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" , SURFACE RIGHTS ONLY	◓
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	▬
" , MINING RIGHTS ONLY	▬
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	(R)
CANCELLED	⊗
SAND & GRAVEL	(S)

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC 1.

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000
METRES 0 200 1000 (1 KM) 2000 (2 KM)

TOWNSHIP

SEWELL

M.N.R. ADMINISTRATIVE DISTRICT

TIMMINS

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

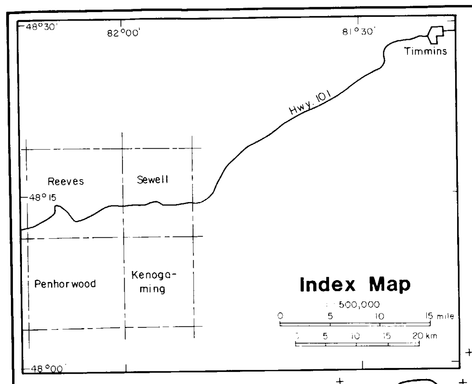
SUDBURY

Ontario Ministry of Natural Resources — Land Management Branch

Date MARCH, 1985

Number G-3247

checked



NAT RIVER BATHOLITH

TISDALE

Highway 101

Weston Lake

Sewell Lake

Deertoot Lake

Atweskwi Lake

Hamilton Lake

North Splay of Destor Porcupine Fault

REEVES TWP.
PENHORWOOD TWP.

SEWELL TWP
KENOGAMING TWP

PG

S

G

Destor-Porcupine Fault ?

DELORO

KUKATUSH STOCK

KENOGAMISSI BATHOLITH

LEGEND

- Granitic Rocks
- G Gabbro
- S Serpentinite (Peridotite)
- Tisdale Tisdale Group Volcanic Rocks
- Komatiitic Volcanic Rocks
- Deloro Deloro Group Volcanic Rocks
- PG Porcupine Group Sedimentary Rocks

Symbols

- Fault
- Geological boundary
- Anticlinal axis
- Property outline

Robert S. Middleton Exploration Services Inc.

KUKATUSH RIVER AREA

Reeves, Sewell, Penhorwood, Kenogaming Twps.

N.T.S. 42A/4, 42A/5, 42B/1, 42B/8

Regional Geological Interpretation

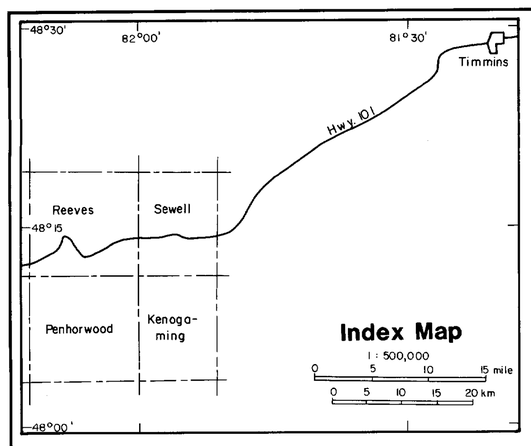
PLAN 2 **2.11187**

1 inch = 1/2 mile

0 1/2 1 1 1/2 2 miles

0 1 2 3 kilometres

Geological Interpretation by D.R. Pyke & Associates Inc. May, 1987



Highway 101

P6-85

P427

P7-85

P10-85

Sewell Lake

848909 848910 848911 TL 37

848913 848912

848914 848915

P437

755310 755311 755312 755313

P60-84 848133 755316 755314

P444

P55-84 P430 755315 TL 20

P71-84 P432 P431 P427 950272

P43-84 P433 P428 755317 P438

P72-84 932076 P435 P436 755318

P73-84 P434 P81-84 Sb showing P439 TL 16

P82-84

724554

932075 932074

P441 P440

P442

P401

P402

4 CORNERS

REEVES TWP.

PENHORWOOD TWP.

SEWELL TWP.

KENOGAMING TWP.

Tholeiitic Dacite

Largely a south facing iron-tholeiitic sequence

Deer foot Lake

DESTOR PORCUPINE FAULT ZONE ?

P426 2dTD P425 2aTD 2aTD 2a Fe 2a Fe P423 2acTD

#1,944916

2h P417 2a Fe 2ab Fe P416 2a Fe P415 2bc Fe 2g Fe P414 2bc CA 2ae Fe P413 2h CA P412

Diabase

#1,944899

2ab P422 2bc Fe 2bc Fe P421 #1,944914 2a Fe P420

Diorite Diabase P403 2d Fe

1a P404 2b CA P405 2b Fe P406 2bFe P408

2ab Fe P419 2bc Fe 2a Fe P418 2b CA P411 2de Mg P410 2f Mg P409 2d Mg P443

logging roads

Benbow Lake

MAIN BREAK

logging roads

Dacitic Crystal Tuff

Dacitic Tuff

Mg-Tholeiite

1ab fCA P407 #4,948020

1bc P400

1de qvs

1de qfp

Sheared dacite-andesite

1de qvs albititic dykes

1c 1F

Hanrahan Lake

N

LEGEND

Archean

2	Mafic Volcanics	1	Komatiitic Volcanics
2a	Massive	1a	Massive
2b	Pillowed	1b	Pillowed
2c	Vesicular	1c	Polysutured
2d	Sheared	1d	Sheared
2e	Carbonatized	1e	Carbonatized
2f	Flow breccia	IF	Iron Formation
2g	Variolitic	qv	quartz vein
2h	Tuff	qfp	quartz feldspar porphyry
CA	Calc-alkalic		
Fe	Iron Tholeiite		
Mg	Magnesium Tholeiite		
TD	Tholeiitic dacite		

Symbols

- Area of outcrop
- x Small bedrock exposure
- 70 Foliation
- 70 Shearing
- 60 Lineation with plunge
- Pillows (top - good, poor)
- Fault
- ■ Claim post
- P400 Sample location for chemical analysis
- 755316 Claim number and boundary
- Geological boundary

G. Vandevalk Productions Ltd.

Robert S. Middleton Exploration Services Inc.

FOUR CORNERS AREA

Reeves, Sewell, Penhorwood, Kenogaming Twps.

N.T.S. 42A/4, 42A/5, 42B/1, 42B/8

GEOLOGICAL & SAMPLE LOCATION MAP

PLAN 1

1 inch=1/4 mile

0 1/4 1/2 3/4 1 mile

0 1/2 1 1 1/2 kilometres

Geology by D.R. Pyke & Associates Inc. **May, 1987**

2.11187