COMSTATE RESOURCES LTD.

Whole Rock Geochemistry and Assay Results From Selected Drill Core Samples, Drill Hole CT-83-2 Thorneloe Township, Porcupine Mining Division Ontario

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Toronto, Ontario

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Introduction

This report presents major, minor and trace element analytical results from selected samples of drill core from diamond drill hole CT-83-2, put down on claim P. 596000 in Thorneloe Township. The hole was drilled by Kerr Addison Mines Ltd. during the period March 16, 1983-March 18, 1983, while the property was under option from Comstate Resources Ltd.

Location and Access

The property consists of 16 claims in Northeast Thorneloe Township near the north end of Kenogamissi Lake on the Mattagami River (Figure 1). An all weather gravel road from the city of Timmins to the north end of Kenogamissi Lake provides easy access to the property.

Previous Work

The north Thorneloe area was first mapped by A.G. Burrows (1911,1912), as part of a geological investigation of the general Porcupine gold area. In 1937, the area was remapped by Harding and Berry (1939) at a scale of 1 inch to 1 mile, as part of a reconnaissance survey of the Keefer-Eldorado area.

Previous exploration work in the area has largely been confined to a group of ten claims (including five patented claims) which lie immediately west of the Mattagami River. The ten claims were originally acquired by Mr. J. Thibeault and his associates of Timmins, and were held by them for a period of 20 years up to 1937. During this period,

Figure 1. Location of Thorneloe Township Claim Group

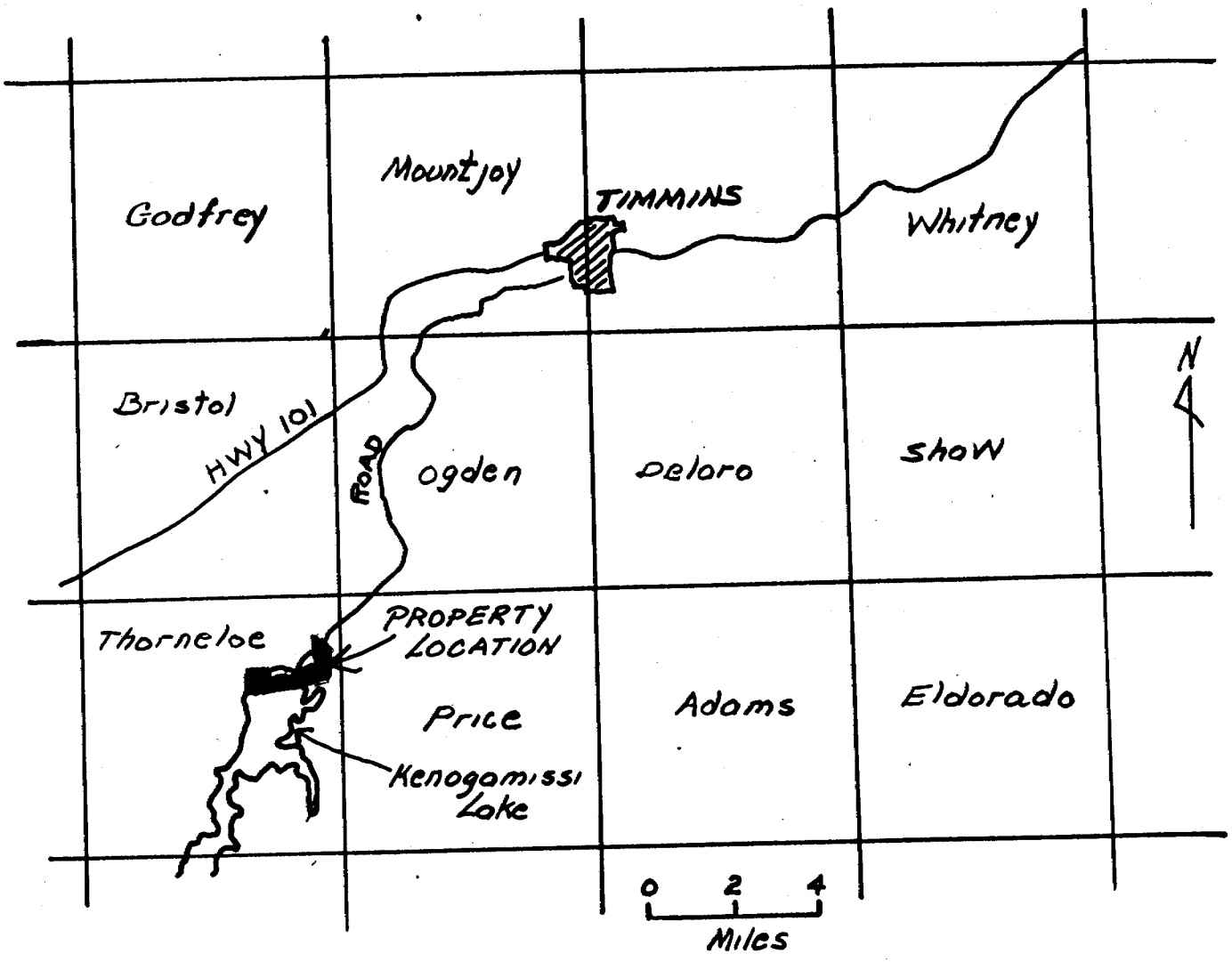
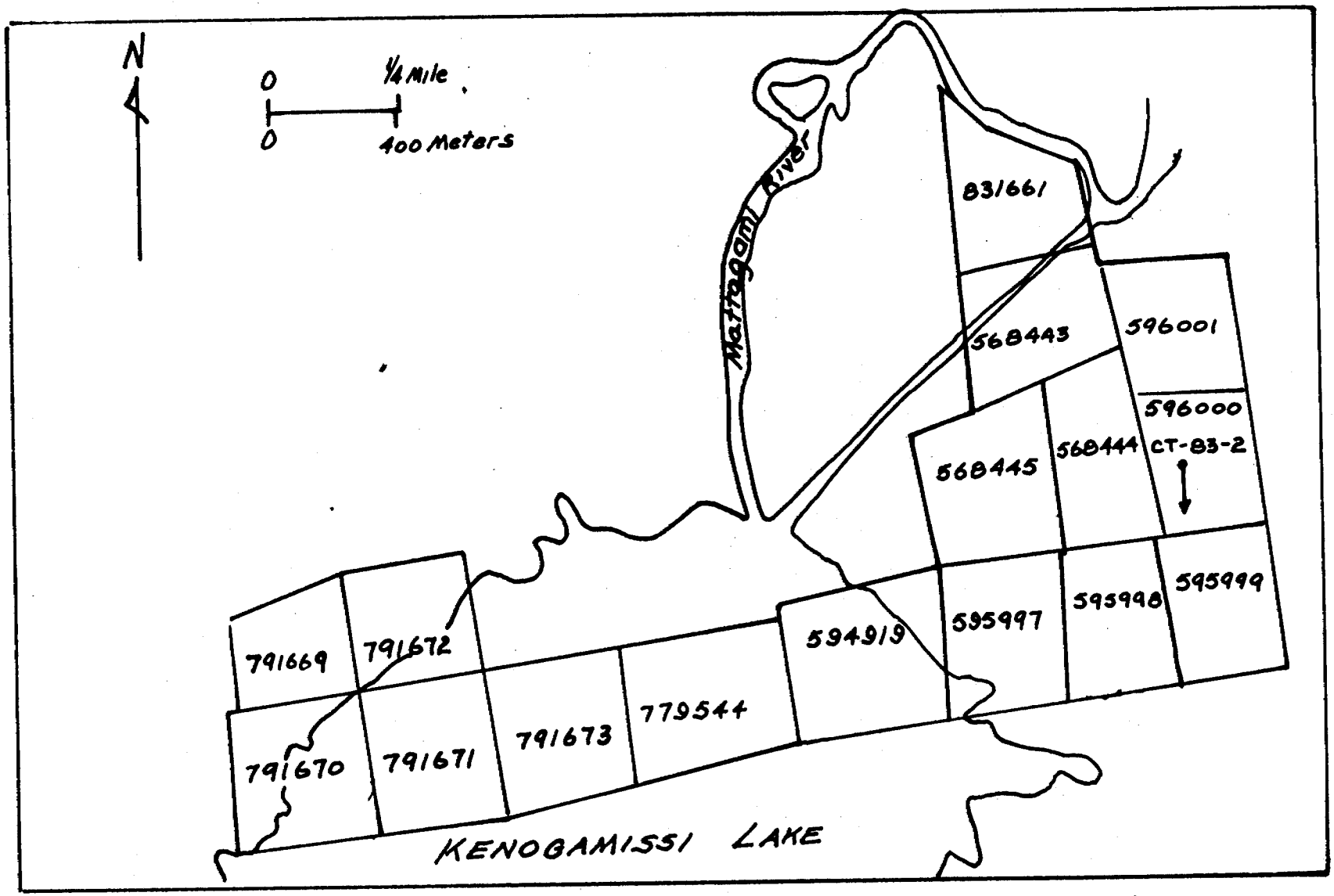


Figure 2.



Comstate Resources — Location of claims and drill hole CT-83-2
Thorneloe Township

the property was worked intermittently. Two shallow shafts (114 and 28 feet respectively) were sunk, a small mining plant and a five-ton test mill were erected, and a small amount of gold was reported to have been produced (Harding and Berry, 1939).

In 1980, Comstate Resources Ltd. conducted a geochemical (humus) survey over the Thorneloe property. On claim P.568441, humus samples were collected at 100 foot intervals, and 174 of these samples were analyzed for gold and arsenic. Four areas of weakly anomalous gold concentrations were outlined in the humus horizon; maximum gold content was 29 parts per billion. Two of the gold anomalies showed corresponding arsenic anomalies. Seventy-one humus samples obtained from the north half of claims P. 568444, P. 568445 and P. 596000 were analyzed for gold and arsenic; no anomalous values were detected.

In 1981, Comstate Resources Ltd. drilled 16 percussion overburden drill holes on claim P. 568441, and 54 holes across claims P. 568444, P. 568445, P. 596000 and P. 596001. Lodgement till suitable for sampling was found to be extremely scarce. Only eleven samples were analyzed, and none contained detectable gold.

In 1983, Kerr Addison Mines Ltd., under option from Comstate Resources Ltd., completed magnetic and electromagnetic (VLF) surveys over the claim group. Two diamond drill holes, CT-83-1 and CT-83-2, totalling 1,002 feet, were subsequently sunk and no significant gold values were encountered.

During the summers of 1983 and 1984, the property was mapped geologically by Comstate Resources personnel, at a scale of 1 : 2500.

Present Survey

The location of diamond drill hole CT-83-2 is given in Figure 2. A total of 16 drill core samples were obtained from the drill hole. Sample footages and lithologic descriptions are presented in Table 1 and the location of samples along the length of the drill hole are given in Figure 3. The major lithologic unit divisions shown on Figure 3 are those reported in the drill log by Kerr Addison Mines Limited.

Eleven of the samples were analyzed for whole rock major and minor elements as well as vanadium, scandium, lanthanum, cerium, samarium and lutecium. Six of the samples were analyzed for gold (parts per billion), arsenic (parts per million) and barium (parts per million). The type of analytical method used and the detection limit for each element analyzed is given in Table 2. Sample CT-83-2-B was analyzed in both cases and the subscript B_I is used to denote the sample analyzed for gold, arsenic and barium.

All analyses were performed by X-Ray Assay Laboratories Ltd, 1885 Leslie Street, Don Mills, Ontario. The rare earth elements analyzed are the ones offered by X-Ray Assay Ltd., as part of their rare earth mineral exploration package.

Discussion of Analytical Results

Analytical results from this survey are presented in

TABLE I

Sample Descriptions and Footages

Drill Hole CT-83-2

Thorneloe Township

	Sample #	Footage	Original Lithologic Description when sampled
A.	CT-83-2-A *	235.0-235.42 feet	Possible sediment or intermediate tuff. Medium to lite gray with yellow tinge. Very highly foliated to sheared.
B.	CT-83-2-B;BI*	248.33-253.0 feet	Intermediate tuff? Mottled texture; v. highly bleached and carbonate altered.Highly sheared and fractured. Feldspar porphyritic?
C.	CT-83-2-C	253.00-255.00 feet	Same material as CT-83-2-B but contains up to 5% green fucshite throughout on foliation plane surfaces. Heavily oxidized.
D.	CT-83-2-D	261.91-264.33 feet	Section similar in appearance to that of CT-83-2-C.
E.	CT-83-2-E	313.00-314.08 feet	Very strongly bleached,silicified and sericitized section with 4% fine diss. pyrite and 5% fucshite along fol planes. Original mafic-ultramafic tuff?
F.	CT-83-2-F*	301.08-302.17 feet	Green carbonate rock. Highly altered and silicified. V. distinct green hue. Probably fragmental.
G.	CT-83-2-G*	341.25-341.83 feet	Possible v. fine grained mafic tuff or sediment? V. highly altered and contorted. V. well foliated to bandedand crenulated. Locally highly chloritized.
H.	CT-83-2-H	351.25-352.42 feet	Pale white, fine grained quartz vein with 1% fine diss. pyrite. Margins heavily sericitized.
I.	CT-83-2-I *	373.83-374.50 feet	Greywacke sediment; fine to fine-medium grained; medium to medium dark gray; massive to poorly bedded.
J.	CT-83-2-J *	374.66-375.00 feet	Graphitic argillite; very dark gray; very fine grained; very well foliated to fissile.

*-whole rock samples

TABLE I (cont.)

	Sample #	Footage	Original Lithologic description when sampled
K.	CT-83-2-K *	413.00-413.66 feet	Talc-chlorite-carbonate schist; v. strongly foliated to crenulated; v. dark blue green with mottled carbonate texture locally.
L.	CT-83-2-L *	435.00-435.42 feet	Probable sediment; fine grained; dark green gray; v. well foliated to banded; locally heavily sericitized. Possible mafic volcanic?
M.	CT-83-2-M *	452.33-453.42 feet	Sediment? Volcanic? v. highly schistose and contorted. Overall color is medium brown-gray. Abundant orange carbonate veinlets and broken, highly contorted quartz-carbonate veinlets
N.	CT-83-2-N *	483.00-484.50 feet	Highly altered sediment? Medium gray with definite fragmental texture. Strongly carbonatized.
O.	CT-83-2-O	497.25-498.42 feet	Section contains to 40% fractured and broken, rose quartz veins and highly brecciated, black, siliceous material.
P.	CT-83-2-P *	72.00 - 72.42 feet	Section v. similar in appearance to that of CT-83-2-B. V. highly altered and sheared intermediate tuff? Feldspar porphyritic?

TABLE II

Analytical Methods and Detection Limits

Element(s)	Method	Detection Limit
Whole rock major elements	X-Ray flourescence	0.01 weight percent
Whole rock minor elements (Rubidium, strontium, yttrium, zirconium, niobium)	X-Ray flourescence	10.0 parts per million
Scandium	Neutron activation	0.1 parts per million
Rare Earth Elements	Neutron activation	
Lanthanum		0.5 parts per million
Cerium		3.0 parts per million
Samarium		0.1 parts per million
Lutecium		0.05 parts per million
Vanadium	DCP method	2.0 parts per million
Gold	Combined fire assay-DCP	2.0 parts per billion
Arsenic	Combined fire assay-atomic absorption	0.10 parts per million
Barium (Semi-quantitative)	X-Ray Flourescence	20.0 parts per million

Table A - D of Appendix I. C.I.P.W. and Barth-Niggli normative calculations and other selected calculations for most of the samples analyzed are given in Appendix 2. Samples analyzed for whole rock major elements are plotted on a Jensen Cation Diagram (Fig. 4).

Major element analytical results indicate that drill hole CT-83-2 intersected only two major rock types: 1) fine grained sediments of a bulk calc-alkaline andesitic composition(CT-83-2-A,I,J,L), and 2) highly altered and schistose peridotitic komatiite flows and/or fragmentals (CT-83-2-B,F,G, K,M,N, and P)(Fig. 4). Samples CT-83-2-B,G,M,N, and P appear to have been incorrectly logged as highly altered mafic to intermediate tuffs and/or sediments. Samples CT-83-2-F and K were the only ones recognized as being of komatiitic affinity during logging of the drill core.

Calculations listed in Appendix 2 indicate that all komatiitic samples are olivine normative, have very high Kuno solidification indices (MgO/MgO + FeO (total) + Na_2O + K_2O)) and very low Thornton-Tuttle Differentiation indices (normative albite + orthoclase + quartz + nepheline + leucite + K-spar). The sedimentary samples analyzed are all strongly quartz normative, have very low Kuno Solidification indices and high Thornton-Tuttle Differentiation indices.

Rubidium, zirconium and barium values are given in Table B of Appendix I. These elements appear to be strongly concentrated in the feldspar-rich sedimentary samples, relative to the komatiitic samples. Strontium, yttrium,

and niobium values, however, do not clearly distinguish between komatiitic and sedimentary rock types.

Scandium, vanadium and the rare earth element results are given in Table C of Appendix I. Scandium values are considerably higher in the komatiitic samples analyzed, due to an originally pyroxene-rich mineralogy for this rock type. Conversely, lanthanum, cerium, samarium and, to a lesser extent, lutecium values are considerably higher in the sedimentary samples analyzed. Vanadium values do not clearly distinquish the two rock types, possibly as a result of high vanadium mobility during alteration of the sequence.

Samples CT-83-2-BI and E yielded anomalous gold values of 150 and 310 p.p.b., respectively. These values are substantially higher than those listed on the diamond drill logs submitted by Kerr Addison Mines Limited, who consistently reported 'nil' values of gold for samples analyzed throughout the hole. Sample CT-83-2-E, yielding the highest gold value, is a very strongly silicified and bleached section with 4% fine disseminated pyrite and 5% fucshite along foliation planes.

Samples CT-83-2-BI,C and D yielded anomalous arsenic values of 800, 100 and 170 parts per million, respectively. Sample BI is a highly carbonatized and bleached komatiitic rock with a distinctive whitish, mottled texture, giving the rock a "feldspar porphyritic" appearance.

Samples CT-83-2-E and H have highly anomalous barium values of 980 and 400 parts per million respectively. The

barium content of sample E is interesting in that the sample is highly bleached, sericitized, pyritized and also yielded a significant value of gold.

Conclusions and Recommendations

Major, minor and trace element analyses of samples from drill hole CT-83-2 clearly indicate that only two major rock types, komatiites and sediments, are present throughout the length of the drill hole. Komatiitic units not recognized during drill core logging are strongly delineated as a result of geochemical analysis.

Anomalous gold, arsenic and barium values appear to be found in drill core sections showing extensive bleaching and silicification or extensive bleaching and carbonate alteration. Fine disseminated pyrite occurs in sections yielding the highest gold values. It is recommended that, during future mapping and drill core logging, special attention be paid to zones exhibiting these types of alteration.

REFERENCES

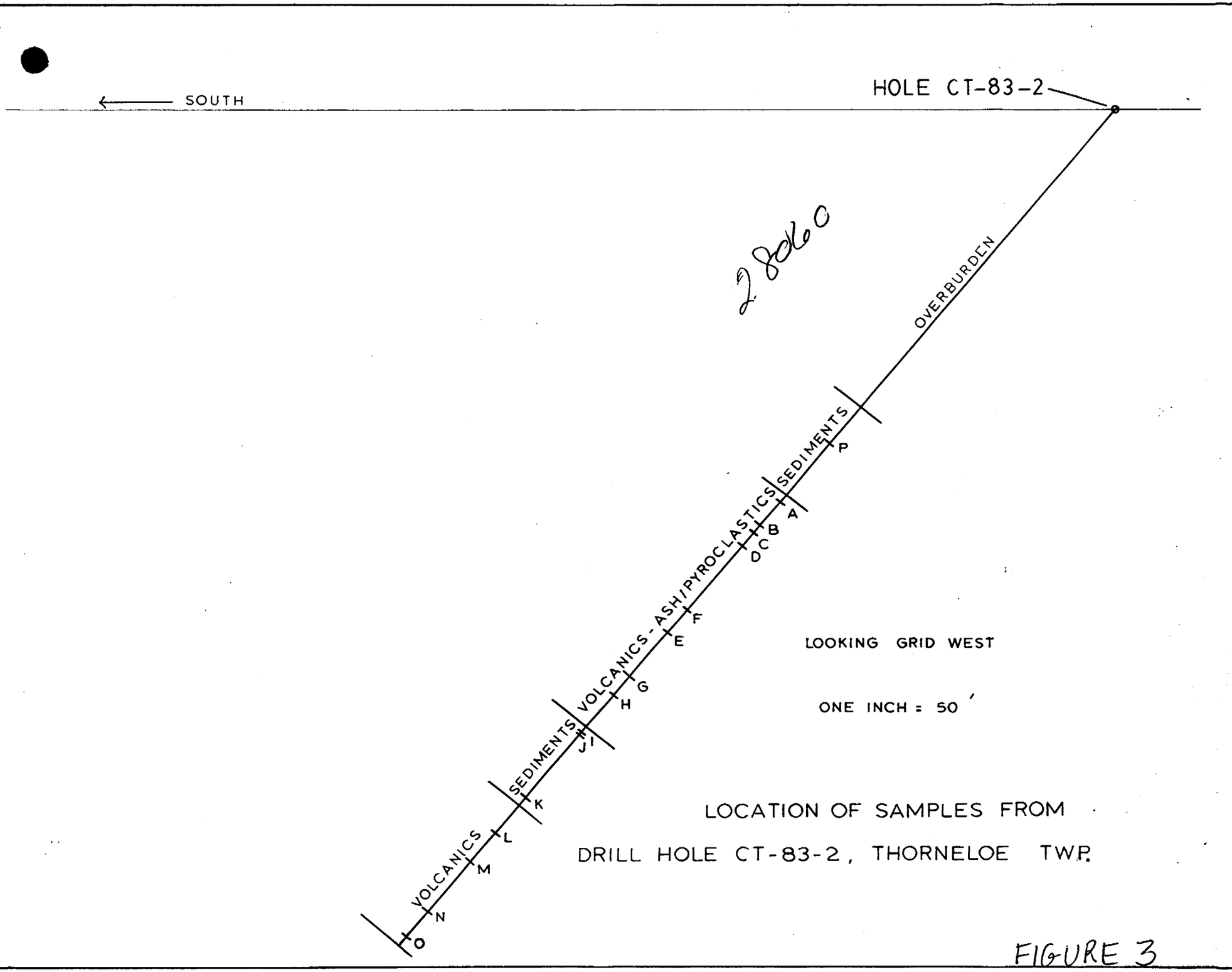
Burrows, A.G.

1911: The Porcupine gold area; Ont. Beaureau of Mines, Vol. 20, pt. 2

1912: The Porcupine gold area, Second Report; Ontario Bureau of Mines, Vol. 21, pt 1, p. 205 - 249.

Harding, W.D. and Berry, L.G.

1938: Geology of the Keefer - Eldorado area; Ont. Dept. Mines, Vol. 47, pt. 4, p. 1-26.



LOCATION OF SAMPLES FROM

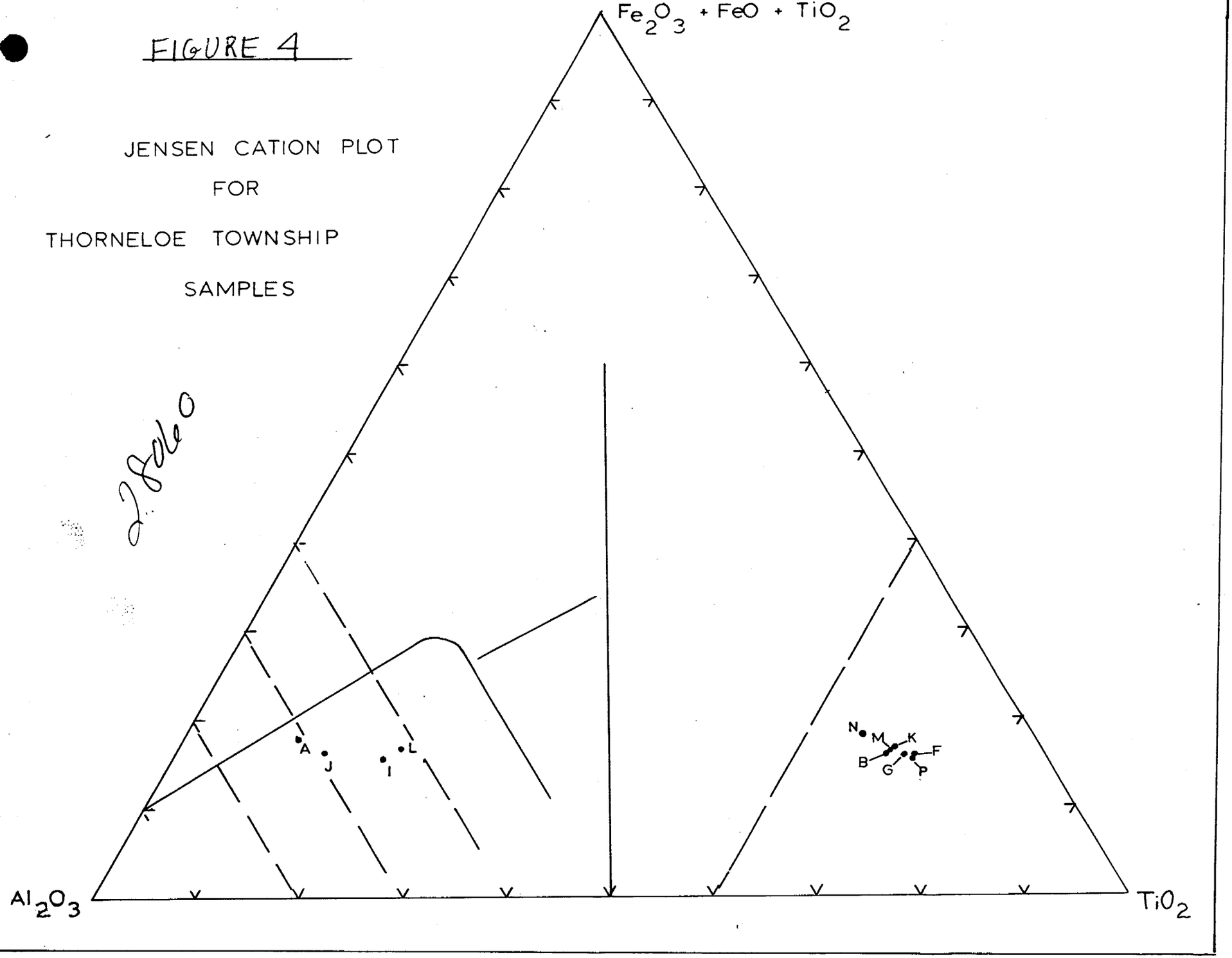
DRILL HOLE CT-83-2, THORNELOE TWP.

FIGURE 3

FIGURE 4

JENSEN CATION PLOT
FOR
THORNELOE TOWNSHIP
SAMPLES

2806.0



APPENDIX I

Major, minor and trace element results

of samples from

Drill Hole CT-83-2

Thorneloe Township

TABLE A : Major Element Analyses for CT-83-2 Samples

SAMPLE	SIO2	AL2O3	CAO	MGO	NA2O	K2O	FE2O3	MNO	TIO2	P2O5	CR2O3	LOI	SUM
CT-83-1-A	61.7	13.2	4.25	3.33	2.37	1.65	5.29	0.09	0.54	0.14	0.02	7.93	100.7
CT-83-2-A	64.4	16.2	0.43	2.04	3.78	1.89	5.77	0.05	0.69	0.15	0.03	5.08	100.6
CT-83-2-B	31.3	5.76	5.15	21.0	0.42	0.22	9.36	0.15	0.33	0.03	0.31	26.5	100.6
CT-83-2-F	34.0	4.68	3.51	21.0	0.26	0.51	8.94	0.12	0.32	0.09	0.31	26.1	99.9
CT-83-2-G	33.7	5.03	5.49	20.6	0.25	0.05	8.90	0.14	0.30	0.03	0.29	25.4	100.2
CT-83-2-I	65.9	13.5	1.53	3.43	3.18	1.65	4.55	0.05	0.54	0.10	0.06	4.70	99.3
CT-83-2-J	63.7	16.4	1.50	2.74	2.57	2.45	5.34	0.05	0.62	0.11	0.02	4.54	100.1
CT-83-2-K	37.4	5.45	5.30	21.5	0.15	<0.01	9.68	0.16	0.31	0.03	0.29	20.1	100.4
CT-83-2-L	58.3	14.6	2.99	4.08	1.50	3.33	5.76	0.07	0.52	0.12	0.04	9.08	100.5
CT-83-2-M	31.5	5.10	9.75	19.2	0.14	0.02	8.62	0.18	0.28	0.03	0.25	25.4	100.6
CT-83-2-N	30.8	4.93	14.7	15.4	0.12	0.07	8.17	0.22	0.26	0.04	0.25	25.5	100.5
CT-83-2-P	34.1	4.95	4.06	21.8	0.13	<0.01	9.04	0.14	0.29	0.03	0.27	25.6	100.5

TABLE B. Minor Element Analyses, drill hole CT-83-2

SAMPLE	RB	SR	Y	ZR	NB	BA
CT-83-1-A	50	510	10	130	20	530
CT-83-2-A	70	220	20	110	20	470
CT-83-2-B	20	170	<10	<10	10	120
CT-83-2-F	10	90	<10	<10	10	260
CT-83-2-G	10	110	10	10	10	60
CT-83-2-I	60	140	<10	100	30	380
CT-83-2-J	70	150	<10	100	20	550
CT-83-2-K	10	120	10	<10	20	60
CT-83-2-L	90	200	10	90	<10	480
CT-83-2-M	20	480	<10	20	20	20
CT-83-2-N	20	320	<10	<10	20	20
CT-83-2-P	20	260	<10	10	10	50

TABLE C. Scandium, Vanadium and Rare Earth Element Analyses, samples from drill hole CT-83-2

SAMPLE	SC PPM	V PPM	LA PPM
CT-83-1-A	12.0	88	27.4
CT-83-2-A	18.0	120	26.6
CT-83-2-B	24.0	130	2.5
CT-83-2-F	22.0	110	1.6
CT-83-2-G	23.0	120	0.7
CT-83-2-I	12.0	86	17.0
CT-83-2-J	16.0	110	19.7
CT-83-2-K	23.0	120	0.6
CT-83-2-L	18.0	110	22.3
CT-83-2-M	22.0	110	1.1
CT-83-2-N	22.0	100	1.1
CT-83-2-P	22.0	110	1.4

SAMPLE	CE PPM	SM PPM	LU PPM
CT-83-1-A	55	4.3	0.20
CT-83-2-A	56	4.2	0.24
CT-83-2-B	7	0.8	0.13
CT-83-2-F	9	0.7	0.08
CT-83-2-G	9	0.6	0.13
CT-83-2-I	34	2.7	0.18
CT-83-2-J	41	3.2	0.17
CT-83-2-K	5	0.6	0.13
CT-83-2-L	44	3.5	0.19
CT-83-2-M	4	0.6	0.13
CT-83-2-N	4	0.6	0.15
CT-83-2-P	4	0.6	0.12

TABLE D. Gold, Arsenic and Barium Analytical Results, from selected samples, drill hole CT-83-2.

X-RAY ASSAY LABORATORIES 25-MAR-85 REPORT 23866 REF.FILE 19448-K1

SAMPLE	AU PPB	AS PPM	BA PPM
CT-83-2-81	150	800.	140
CT-83-2-C	12	100.	260
CT-83-2-D	9	170.	200
CT-83-2-E	310	7.4	980
CT-83-2-H	33	21.0	400
CT-83-2-C	8	17.0	60

APPENDIX 2

Computer Printout Calculations Based on

Major Element Data

SAMPLE : CT-83-2A

ANALYSIS INPUT IN WEIGHT PERCENT

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
64.40	.69	16.20	2.19	2.76	.05	2.04	.43	3.78	1.89	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RECALCULATED TO 100(ANHYDROUS

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
68.09	.73	17.13	2.32	2.92	.05	2.16	.45	4.00	2.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

CATION PROPORTIONS IN ANALYSIS

SI	TI	AL	FE(3)	FE(2)	MN	MG	CA	NA	K	P	BA	SR	CR	F	CL	S	C	ZR	NI	H
63.52	.51	18.84	1.63	2.27	.04	3.00	.45	7.23	2.38	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

NORMATIVE MINERALS, 1ST COLUMN WT %,		2ND COLUMN IS BARTH-NIGGLI CATION NORM %					
QUARTZ	32.38	30.21	DIOPSIDE	0.00	0.00	MAGNETITE	3.36	2.44
ORTHOCLASE	11.81	11.89	WOLLASTONITE	0.00	0.00	ILMENITE	1.39	1.02
ALBITE	33.82	36.15	ENSTATITE	0.00	0.00	HEMATITE	0.00	0.00
ANORTHITE	1.23	1.24	FERROSILITE	0.00	0.00	CHROMITE	.00	.00
NEPHELINE	0.00	0.00	HYPERSTHENE	7.70	7.98	PEROVSKITE	0.00	0.00
LEUCITE	0.00	0.00	ENSTATITE	5.37	6.00	RUTILE	0.00	0.00
SODIUM METASILICATE	0.00	0.00	FERROSILITE	2.33	1.98	SPHENE	0.00	0.00
POTASH METASILICATE	0.00	0.00	WOLLASTONITE	0.00	0.00	PYRITE	.00	.00
KALIOPHYLITE	0.00	0.00	ACMITE	0.00	0.00	THENARDITE	0.00	0.00
CORUNDUM	7.94	8.73	OLIVINE	0.00	0.00	FLUORITE	0.00	0.00
SODIUM CARBONATE	0.00	0.00	FORSTERITE	0.00	0.00	HALITE	.00	.00
CALCITE	.00	.00	FAYALITE	0.00	0.00	APATITE	.38	.33
ZIRCON	0.00	0.00	LARNITE	0.00	0.00			

FELDSPAR COMPOSITION

WEIGHT PERCENT	ORTHOCLASE 25.203	ALBITE 72.173	ANORTHITE 2.624	
MOLE PERCENT	24.133	73.353	2.514	
PLAGIOCLASE COMPOSITION AN	3.314	PLAGIOCLASE COMPOSITION AFTER IRVING AND BARAGER 1971	AN	3.314

PROPORTION OF ANALYSIS IN GRANITE TETRAHEDRON
IN WEIGHT PERCENT = 79.238 MOLE PERCENT = 79.492

CO-ORDINATES IN THE SYSTEM ANORTHITE - QUARTZ - KALSILITE - NEPHELINE

FIRST COLUMN WEIGHT PERCENT,	SECOND COLUMN MOLE PERCENT									
GRANITE TETRAHEDRON	QUARTZ	66.86	81.86	ANORTHITE	1.55	.46	NEPHELINE	23.12	13.31	KALSILITE	8.47	4.38
KALSILITE PROJECTION		73.05	85.61		1.70	.48		25.26	13.92		0.00	0.00
NEPHELINE PROJECTION		86.97	94.42		2.02	.53		0.00	0.00		11.01	5.05
ANORTHITE PROJECTION		67.91	82.23		0.00	0.00		23.48	13.37		8.60	4.40
QUARTZ PROJECTION		0.00	0.00		4.58	2.51		69.76	73.35		25.55	24.13

CO-ORDINATES IN TRIANGULAR DIAGRAMS

WEIGHT PROPORTIONS	QUARTZ	40.869	ORTHOCLASE	14.903	PLAGIOCLASE 44.229
MOLE PROPORTIONS		38.008		14.960	47.031
WEIGHT PROPORTIONS	CA	7.049	NA	61.967	K 30.984
MOLE PROPORTIONS		8.647		68.775	22.578
CATION PROPORTIONS		4.519		71.883	23.599
WEIGHT PROPORTIONS	ALKALIS	45.587	TOT FE AS FE	38.012	MGO 16.402
MOLE PROPORTIONS		41.049		33.326	25.625
CATION PROPORTIONS		58.205		23.628	18.167

THORNTON-TUTTLE DIFFERENTIATION INDEX- (AB+OR+Q+NE+C+KS)
WEIGHT (78.008 MOLE (78.253

KUNO SOLIDIFICATION INDEX -(MGO/MGO+FEO(TOTAL)+NA2O+K2O) WEIGHT (16.402

SAMPLE : CT-83-28

LYSIS INPUT IN WEIGHT PERCENT

	SIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
30	.33	5.76	1.83	6.39	.15	21.00	5.15	.42	.22	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

ALCULATED TO 100(ANHYDROUS

	SIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
13	.45	7.94	2.52	8.80	.21	28.93	7.10	.58	.30	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

ION PROPORTIONS IN ANALYSIS

	TI	AL	FE(3)	FE(2)	MN	MG	CA	NA	K	P	BA	SR	CR	F	CL	S	C	ZR	NI	M
66	.30	8.17	1.66	6.43	.15	37.65	6.64	.98	.34	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

MATIVE MINERALS, 1ST COLUMN WT %, 2ND COLUMN IS BARTH-NIGGLI CATION NORM %

QUARTZ	0.00	0.00	DIOPSIDE	13.31	12.65	MAGNETITE	3.66	2.49
ORTHOCLASE	1.79	1.69	WOLLASTONITE	7.00	6.33	ILMENITE	.86	.60
ALBITE	4.90	4.90	ENSTATITE	5.29	5.53	HEMATITE	0.00	0.00
ANORTHITE	18.16	17.13	FERROSILITE	1.02	.80	CHROMITE	.00	.00
NEPHELINE	0.00	0.00	HYPERSTHENE	2.21	2.22	PEROVSKITE	0.00	0.00
LEUCITE	0.00	0.00	ENSTATITE	1.85	1.94	RUTILE	0.00	0.00
SODIUM METASILICATE	0.00	0.00	FERROSILITE	.35	.28	SPHENE	0.00	0.00
POTASH METASILICATE	0.00	0.00	WOLLASTONITE	0.00	0.00	PYRITE	.00	.00
KALIOPHYLITE	0.00	0.00	ACMITE	0.00	0.00	THENARDITE	0.00	0.00
CORUNDUM	0.00	0.00	OLIVINE	55.02	58.24	FLUORITE	0.00	0.00
SODIUM CARBONATE	0.00	0.00	FORSTERITE	45.48	50.88	HALITE	.00	.00
CALCITE	.00	.00	FAYALITE	9.54	7.37	APATITE	.10	.08
ZIRCON	0.00	0.00	LARNITE	0.00	0.00			

FELDSPAR COMPOSITION

WEIGHT PERCENT	ORTHOCLASE	7.208	ALBITE	19.704	ANORTHITE	73.087
MOLE PERCENT		7.120		20.658		72.223
PLAGIOCLASE COMPOSITION AN		77.759	PLAGIOCLASE COMPOSITION AFTER IRVING AND BARAGER 1971 AN			77.759

ORDINATES IN TRIANGULAR DIAGRAMS

WEIGHT PROPORTIONS	QUARTZ	0.000	ORTHOCLASE	7.208	PLAGIOCLASE	92.792	
MOLE PROPORTIONS		0.000		7.120		92.880	
WEIGHT PROPORTIONS	CA	88.946	NA	7.254	K	3.800	
MOLE PROPORTIONS		90.978		6.713		2.309	
CATION PROPORTIONS		83.449		12.315		4.236	
WEIGHT PROPORTIONS	ALKALIS	2.157	TOT FE AS FEO	27.074	MGO	70.769	
MOLE PROPORTIONS		1.420		17.423		81.157	
CATION PROPORTIONS		2.800		17.179		80.021	

-NTON-TUTTLE DIFFERENTIATION INDEX- (AB+OR+Q+NE+LC+KS)
WEIGHT (6.687 MOLE (6.587

SOLIDIFICATION INDEX -(MGO/MGO+FEO(TOTAL)+NA2O+K2O) WEIGHT (70.769

SAMPLE # CT-83-2F

ANALYSIS INPUT IN WEIGHT PERCENT

SIO2	TIO2	AL203	FE203	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
34.00	.32	4.68	1.82	6.02	.12	21.00	3.51	.26	.51	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RECALCULATED TO 100% ANHYDROUS

SIO2	TIO2	AL203	FE203	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
47.01	.44	6.47	2.52	8.32	.17	29.03	4.85	.36	.71	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

CATION PROPORTIONS IN ANALYSIS

SI	TI	AL	FE(3)	FE(2)	MN	MG	CA	NA	K	P	BA	SR	CR	F	CL	S	C	ZR	NI	H
41.19	.29	6.68	1.66	6.10	.12	37.91	4.56	.61	.79	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

NORMATIVE MINERALS, 1ST COLUMN WT %, 2ND COLUMN IS BARTH-NIGGLI CATION NORM %

QUARTZ	0.00	0.00	DIOPSIDE	7.38	7.05	MAGNETITE	3.65	2.49
ORTHOCLASE	4.17	3.94	WOLLASTONITE	3.89	3.52	ILMENITE	.84	.58
ALBITE	3.04	3.05	ENSTATITE	2.95	3.11	HEMATITE	0.00	0.00
ANORTHITE	13.96	13.21	FERROSILITE	.53	.42	CHROMITE	.00	.00
NEPHELINE	0.00	0.00	HYPERSTHENE	29.89	30.23	PEROVSKITE	0.00	0.00
LEUCITE	0.00	0.00	ENSTATITE	25.40	26.64	RUTILE	0.00	0.00
SODIUM METASILICATE	0.00	0.00	FERROSILITE	4.49	3.58	SPHENE	0.00	0.00
POTASH METASILICATE	0.00	0.00	WOLLASTONITE	0.00	0.00	PYRITE	.00	.00
KALIOPHYLITE	0.00	0.00	ACMITE	0.00	0.00	THENARDITE	0.00	0.00
CORUNDUM	0.00	0.00	OLIVINE	36.78	39.21	FLUORITE	0.00	0.00
SODIUM CARBONATE	0.00	0.00	FORSTERITE	30.78	34.56	HALITE	.00	.00
CALCITE	.00	.00	FAYALITE	6.00	4.65	APATITE	.29	.25
ZIRCON	0.00	0.00	LARNITE	0.00	0.00			

FELDSPAR COMPOSITION

WEIGHT PERCENT	ORTHOCLASE	19.685	ALBITE	14.369	ANORTHITE	65.946
MOLE PERCENT		19.507		15.114		65.379
PLAGIOCLASE COMPOSITION AN		81.224	PLAGIOCLASE COMPOSITION AFTER IRVING AND BARAGER 1971		AN	81.224

CO-ORDINATES IN TRIANGULAR DIAGRAMS

WEIGHT PROPORTIONS	QUARTZ	0.000	ORTHOCLASE	19.685	PLAGIOCLASE	80.315
MOLE PROPORTIONS		0.000		19.507		80.493
WEIGHT PROPORTIONS	CA	82.009	NA	6.075	K	11.916
MOLE PROPORTIONS		86.705		5.811		7.484
CATION PROPORTIONS		76.530		10.258		13.212
WEIGHT PROPORTIONS	ALKALIS	2.617	TOT FE AS FE	26.023	MGO	71.360
MOLE PROPORTIONS		1.508		16.732		81.760
CATION PROPORTIONS		2.972		16.483		80.545

THORNTON-TUTTLE DIFFERENTIATION INDEX- (AB+OR+Q+NE+LC+KS)
WEIGHT (7.208 MOLE (6.994

KUNO SOLIDIFICATION INDEX -(MGO/MGO+FEO(TOTAL)+NA2O+K2O) WEIGHT (71.350

SAMPLE : CT-83-2G

ANALYSIS INPUT IN WEIGHT PERCENT

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
33.70	.30	5.03	1.80	6.01	.14	20.60	5.49	.25	.05	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RECALCULATED TO 100(ANHYDROUS

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
45.91	.41	6.85	2.45	8.18	.19	28.07	7.48	.34	.07	.04	.00	.30	.00	.00	.00	.00	.00	.00	.00	.00	0.00

CATION PROPORTIONS IN ANALYSIS

SI	TI	A	FE(3)	FE(2)	MN	MG	CA	NA	K	P	BA	SR	CR	F	CL	S	C	ZR	NI	H
40.36	.27	7.10	1.62	6.02	.14	36.76	7.04	.58	.08	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

NORMATIVE MINERALS, 1ST COLUMN WT %, 2ND COLUMN IS BARTH-NIGGLI CATION NORM %

QUARTZ	0.00	0.00	DIOPSIDE	15.75	15.09	MAGNETITE	3.56	2.43
ORTHOCLASE	.40	.38	WOLLASTONITE	8.30	7.55	ILMENITE	.78	.54
ALBITE	2.88	2.90	ENSTATITE	6.30	6.63	HEMATITE	0.00	0.00
ANORTHITE	16.97	16.11	FERROSILITE	1.16	.92	CHROMITE	.00	.00
NEPHELINE	0.00	0.00	HYPERSTHENE	21.16	21.45	PEROVSKITE	0.00	0.00
LEUCITE	0.00	0.00	ENSTATITE	17.91	18.85	RUTILE	0.00	0.00
SODIUM METASILICATE	0.00	0.00	FERROSILITE	3.25	2.60	SPHENE	0.00	0.00
POTASH METASILICATE	0.00	0.00	WOLLASTONITE	0.00	0.00	PYRITE	.00	.00
KALIOPHYLITE	0.00	0.00	ACMITE	0.00	0.00	THENARDITE	0.00	0.00
CORUNDUM	0.00	0.00	OLIVINE	38.40	41.01	FLUORITE	0.00	0.00
SODIUM CARBONATE	0.00	0.00	FORSTERITE	32.00	36.04	HALITE	.00	.00
CALCITE	.00	.00	FAYALITE	6.40	4.98	APATITE	.10	.08
ZIRCON	0.00	0.00	LARNITE	0.00	0.00			

FELDSPAR COMPOSITION

WEIGHT PERCENT	ORTHOCLASE	1.988	ALBITE	14.230	ANORTHITE 83.783
MOLE PERCENT		1.970		14.967	83.063
PLAGIOCLASE COMPOSITION AN		84.732	PLAGIOCLASE COMPOSITION AFTER IRVING AND BARAGER 1971		AN 84.732

CO-ORDINATES IN TRIANGULAR DIAGRAMS

WEIGHT PROPORTIONS	QUARTZ	0.000	ORTHOCLASE	1.988	PLAGIOCLASE	98.012	
MOLE PROPORTIONS		0.000		1.970		98.030	
WEIGHT PROPORTIONS	CA	94.819	NA	4.316	K	.864	
MOLE PROPORTIONS		95.546		3.937		.517	
CATION PROPORTIONS		91.473		7.538		.990	
WEIGHT PROPORTIONS	ALKALIS	1.052	TOT FE AS FEO	26.735	MGO	72.214	
MOLE PROPORTIONS		.734		17.075		62.190	
CATION PROPORTIONS		1.458		16.951		51.591	

THORNTON-TUTTLE DIFFERENTIATION INDEX- (AB+OR+Q+NE+C+KS)
WEIGHT (3.284 MOLE (3.284

KUNO SOLIDIFICATION INDEX -(MGO/MGO+FEO(TOTAL)+NA2O+K2O) WEIGHT (72.214

SAMPLE : CT-83-2I

ANALYSIS INPUT IN WEIGHT PERCENT

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
65.90	.54	13.50	2.04	1.83	.05	3.43	1.53	3.18	1.65	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RECALCULATED TO 100(ANHYDROUS

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
70.30	.58	14.40	2.18	1.95	.05	3.66	1.63	3.39	1.76	.11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

CATION PROPORTIONS IN ANALYSIS

SI	TI	AL	FE(3)	FE(2)	MN	MG	CA	NA	K	P	BA	SR	CR	F	CL	S	C	ZR	NI	H
65.62	.40	15.84	1.53	1.52	.04	5.09	1.63	6.14	2.10	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

NORMATIVE MINERALS, 1ST COLUMN WT %, 2ND COLUMN IS BARTH-NIGGLI CATION NORM %

QUARTZ	34.75	32.44	DIOPSIDE	0.00	0.00	MAGNETITE	3.15	2.29
ORTHOCLASE	10.40	10.48	WOLLASTONITE	0.00	0.00	ILMENITE	1.09	.81
ALBITE	28.70	30.70	ENSTATITE	0.00	0.00	HEMATITE	0.00	0.00
ANORTHITE	7.41	7.47	FERROSILITE	0.00	0.00	CHROMITE	.00	.00
NEPHELINE	0.00	0.00	HYPERSTHENE	10.04	10.97	PEROVSKITE	0.00	0.00
LEUCITE	0.00	0.00	ENSTATITE	9.11	10.18	RUTILE	0.00	0.00
SODIUM METASILICATE	0.00	0.00	FERROSILITE	.93	.79	SPHENE	0.00	0.00
POTASH METASILICATE	0.00	0.00	WOLLASTONITE	0.00	0.00	PYRITE	0.00	0.00
KALIOPHYLITE	0.00	0.00	ACMITE	0.00	0.00	THENARDITE	.00	.00
CORUNDUM	4.20	4.62	OLIVINE	0.00	0.00	FLUORITE	0.00	0.00
SODIUM CARBONATE	0.00	0.00	FORSTERITE	0.00	0.00	HALITE	0.00	0.00
CALCITE	.00	.00	FAYALITE	0.00	0.00	APATITE	.00	.00
ZIRCON	0.00	0.00	LARNITE	0.00	0.00		.25	.22

FELDSPAR COMPOSITION

WEIGHT PERCENT	ORTHOCLASE	22.363	ALBITE	61.712, ANORTHITE	15.925
MOLE PERCENT		21.545		63.106	15.349
PLAGIOCLASE COMPOSITION AN		19.564	PLAGIOCLASE COMPOSITION AFTER IRVING AND BARAGER 1971		AN 19.564

PROPORTION OF ANALYSIS IN GRANITE TETRAHEDRON
IN WEIGHT PERCENT = 81.260 MOLE PERCENT = 81.083

CO-ORDINATES IN THE SYSTEM ANORTHITE - QUARTZ - KALSILITE - NEPHELINE
FIRST COLUMN WEIGHT PERCENT, SECOND COLUMN MOLE PERCENT

	QUARTZ		ANORTHITE		NEPHELINE		KALSILITE	
GRANITE TETRAHEDRON	64.48	80.21	9.11	3.04	19.13	12.49	7.27	4.26
KALSILITE PROJECTION	69.54	83.78	9.83	3.17	20.63	13.05	0.00	0.00
NEPHELINE PROJECTION	79.73	91.66	11.27	3.47	0.00	0.00	8.99	4.87
ANORTHITE PROJECTION	70.94	82.72	0.00	0.00	21.05	12.88	8.00	4.40
QUARTZ PROJECTION	0.00	0.00	25.56	15.35	53.87	63.11	20.48	21.54

CO-ORDINATES IN TRIANGULAR DIAGRAMS

WEIGHT PROPORTIONS	QUARTZ	42.765	ORTHOCLASE	12.800	PLAGIOCLASE	44.435
MOLE PROPORTIONS		40.008		12.925		47.067
WEIGHT PROPORTIONS	CA	24.057	NA	50.000	K	25.943
MOLE PROPORTIONS		28.400		53.406		18.194
CATION PROPORTIONS		16.550		62.245		21.206
WEIGHT PROPORTIONS	ALKALIS	40.514	TOT FE AS FEO	30.715	MGO	28.770
MOLE PROPORTIONS		33.595		24.879		41.526
CATION PROPORTIONS		50.293		18.623		31.084

THORNTON-TUTTLE DIFFERENTIATION INDEX- (AB+OR+Q+NE+LC+KS)
WEIGHT (73.853 MOLE (73.617

KUNO SOLIDIFICATION INDEX -(MGO/MGO+FEO(TOTAL)+NA2O+K2O) WEIGHT (28.770

SAMPLE : CT-83-2J

ANALYSIS INPUT IN WEIGHT PERCENT

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
63.70	.62	16.40	2.12	2.45	.05	2.74	1.50	2.57	2.45	.11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RECALCULATED TO 100(ANHYDROUS

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
67.26	.65	17.32	2.24	2.58	.05	2.89	1.58	2.71	2.59	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

CATION PROPORTIONS IN ANALYSIS

SI	TI	AL	FE(3)	FE(2)	MN	MG	CA	NA	K	P	BA	SR	CR	F	CL	S	C	ZR	NI	H
63.02	.46	19.13	1.58	2.03	.04	4.04	1.59	4.93	3.09	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

NORMATIVE MINERALS, 1ST COLUMN WT %, 2ND COLUMN IS BARTH-NIGGLI CATION NORM %

QUARTZ	33.32	31.22	DIOPSIDE	0.00	0.00	MAGNETITE	3.25	2.37
ORTHOCLASE	15.29	15.46	WOLLASTONITE	0.00	0.00	ILMENITE	1.24	.92
ALBITE	22.96	24.65	ENSTATITE	0.00	0.00	HEMATITE	0.00	0.00
ANORTHITE	7.11	7.19	FERROSILITE	0.00	0.00	CHROMITE	.00	.00
NEPHELINE	0.00	0.00	HYPERSTHENE	9.12	9.71	PEROVSKITE	0.00	0.00
LEUCITE	0.00	0.00	ENSTATITE	7.20	8.08	RUTILE	0.00	0.00
SODIUM METASILICATE	0.00	0.00	FERROSILITE	1.91	1.63	SPHENE	0.00	0.00
POTASH METASILICATE	0.00	0.00	WOLLASTONITE	0.00	0.00	PYRITE	.00	.00
KALIOPHYLITE	0.00	0.00	ACMITE	0.00	0.00	THENARDITE	0.00	0.00
CORUNDUM	7.45	8.23	OLIVINE	0.00	0.00	FLUORITE	0.00	0.00
SODIUM CARBONATE	0.00	0.00	FORSTERITE	0.00	0.00	HALITE	.00	.00
CALCITE	.00	.00	FAYALITE	0.00	0.00	APATITE	.28	.25
ZIRCON	0.00	0.00	LARNITE	0.00	0.00			

FELDSPAR COMPOSITION

WEIGHT PERCENT	ORTHOCLASE 33.706	ALBITE 50.626	ANORTHITE 15.668		
MOLE PERCENT	32.687	52.111	15.201		
PLAGIOCLASE COMPOSITION AN	22.583	PLAGIOCLASE COMPOSITION AFTER IRVING AND BARAGER 1971	AN	22.583	

PROPORTION OF ANALYSIS IN GRANITE TETRAHEDRON
IN WEIGHT PERCENT = 78.670 MOLE PERCENT = 78.524

CO-ORDINATES IN THE SYSTEM ANORTHITE - QUARTZ - KALSILITE - NEPHELINE

FIRST COLUMN WEIGHT PERCENT,	SECOND COLUMN MOLE PERCENT											
GRANITE TETRAHEDRON	QUARTZ	64.12	80.21	ANORTHITE	9.03	3.01	NEPHELINE	15.81	10.32	KALSILITE	11.04	6.47
KALSILITE PROJECTION		72.07	85.75		10.15	3.22		17.77	11.03		0.00	0.00
NEPHELINE PROJECTION		76.16	89.43		10.73	3.36		0.00	0.00		13.12	7.21
ANORTHITE PROJECTION		70.48	82.69		0.00	0.00		17.38	10.64		12.14	6.67
QUARTZ PROJECTION		0.00	0.00		25.17	15.20		44.06	52.11		30.77	32.69

CO-ORDINATES IN TRIANGULAR DIAGRAMS

WEIGHT PROPORTIONS	QUARTZ	42.351	ORTHOCLASE	19.431	PLAGIOCLASE	38.218	
MOLE PROPORTIONS		39.760		19.691		40.549	
WEIGHT PROPORTIONS	CA	23.006	NA	39.417	K	37.577	
MOLE PROPORTIONS		28.405		44.033		27.562	
CATION PROPORTIONS		16.554		51.322		32.124	
WEIGHT PROPORTIONS	ALKALIS	41.434	TOT FE AS FEO	35.951	MGO	22.615	
MOLE PROPORTIONS		34.415		30.922		34.662	
CATION PROPORTIONS		51.208		23.005		25.788	

THORNTON-TUTTLE DIFFERENTIATION INDEX- (AB+OR+Q+NE+LC+KS)
WEIGHT (71.565 MOLE (71.333

KUNO SOLIDIFICATION INDEX -(MGO/MGO+FEO(TOTAL)+NA2O+K2O) WEIGHT (22.615

SAMPLE : CT-83-2K

ANALYSIS INPUT IN WEIGHT PERCENT

SIO2	TIO2	AL203	FE203	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
37.40	.31	5.45	1.81	6.70	.16	21.50	5.30	.15	.01	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RECALCULATED TO 100% ANHYDROUS

SIO2	TIO2	AL203	FE203	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
47.45	.39	6.91	2.30	8.50	.20	27.28	6.72	.19	.01	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

CATION PROPORTIONS IN ANALYSIS

SI	TI	AL	FE(3)	FE(2)	MN	MG	CA	NA	K	P	BA	SR	CR	F	CL	S	C	ZR	NI	H
41.93	.26	7.20	1.53	6.28	.15	35.92	6.37	.33	.01	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

NORMATIVE MINERALS, 1ST COLUMN WT %, 2ND COLUMN IS BARTH-NIGGLI CATION NORM %

QUARTZ	0.00	0.00	DIOPSIDE	12.02	11.55	MAGNETITE	3.73	2.29
ORTHOCLASE	.07	.07	WOLLASTONITE	6.32	5.78	ILMENITE	.75	.52
ALBITE	1.61	1.63	ENSTATITE	4.75	5.02	HEMATITE	0.00	0.00
ANORTHITE	17.97	17.15	FERROSILITE	.95	.76	CHROMITE	.00	.00
NEPHELINE	0.00	0.00	HYPERSTHENE	35.62	36.19	PEROVSKITE	0.00	0.00
LEUCITE	0.00	0.00	ENSTATITE	29.74	31.46	RUTILE	0.00	0.00
SODIUM METASILICATE	0.00	0.00	FERROSILITE	5.88	4.73	SPHENE	0.00	0.00
POTASH METASILICATE	0.00	0.00	WOLLASTONITE	0.00	0.00	PYRITE	.00	.00
KALIOPHYLITE	0.00	0.00	ACMITE	0.00	0.00	THENARDITE	0.00	0.00
CORUNDUM	0.00	0.00	OLIVINE	28.53	30.51	FLUORITE	0.00	0.00
SODIUM CARBONATE	0.00	0.00	FORSTERITE	23.43	26.52	HALITE	.00	.00
CALCITE	.00	.00	FAYALITE	5.11	3.99	APATITE	.09	.08
ZIRCON	0.00	0.00	LARNITE	0.00	0.00			

FELDSPAR COMPOSITION

WEIGHT PERCENT	ORTHOCLASE	.381	ALBITE	8.190	, ANORTHITE	91.428
MOLE PERCENT		.379		8.646		90.974
PLAGIOCLASE COMPOSITION AN		91.321	PLAGIOCLASE COMPOSITION AFTER IRVING AND BARAGER 1971 AN			91.321

CO-ORDINATES IN TRIANGULAR DIAGRAMS

WEIGHT PROPORTIONS	QUARTZ	0.000	ORTHOCLASE	.381	PLAGIOCLASE	99.619	
MOLE PROPORTIONS		0.000		.379		99.621	
WEIGHT PROPORTIONS	CA	97.070	NA	2.747	K	.183	
MOLE PROPORTIONS		97.397		2.494		.109	
CATION PROPORTIONS		94.926		4.862		.213	
WEIGHT PROPORTIONS	ALKALIS	.534	TOT FE AS FEO	27.766	MGO	71.700	
MOLE PROPORTIONS		.388		17.783		81.829	
CATION PROPORTIONS		.772		17.714		81.513	

THORNTON-TUTTLE DIFFERENTIATION INDEX- (AB+OR+Q+NE+LC+KS)
WEIGHT (1.685 MOLE (1.702

KUNO SOLIDIFICATION INDEX -(MGO/MGO+FEO(TOTAL)+NA2O+K2O) WEIGHT (71.700

SAMPLE : CT-83-2L

ANALYSIS INPUT IN WEIGHT PERCENT

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
58.30	.52	14.60	2.02	2.94	.07	4.08	2.99	1.50	3.33	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RECALCULATED TO 100% ANHYDROUS

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
64.44	.57	16.14	2.23	3.25	.08	4.51	3.31	1.66	3.68	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

CATION PROPORTIONS IN ANALYSIS

SI	TI	AL	FE(3)	FE(2)	MN	MG	CA	NA	K	P	BA	SR	CR	F	CL	S	C	ZR	NI	M
60.43	.41	17.84	1.56	2.55	.06	6.30	3.32	3.01	4.40	.11	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

NORMATIVE MINERALS, 1ST COLUMN WT %, 2ND COLUMN IS BARTH-NIGGLI CATION NORM %

QUARTZ	25.77	24.16	DIOPSIDE	0.00	0.00	MAGNETITE	3.24 2.36
ORTHOCLASE	21.75	22.02	WOLLASTONITE	0.00	0.00	ILMENITE	1.09 .81
ALBITE	14.03	15.07	ENSTATITE	0.00	0.00	HEMATITE	0.00 0.00
ANORTHITE	15.54	15.73	FERROSILITE	0.00	0.00	CHROMITE	.00 .00
NEPHELINE	0.00	0.00	HYPERSTHENE	14.54	15.43	PEROVSKITE	0.00 0.00
LEUCITE	0.00	0.00	ENSTATITE	11.23	12.60	RUTILE	0.00 0.00
SODIUM METASILICATE	0.00	0.00	FERROSILITE	3.31	2.83	SPHENE	0.00 0.00
POTASH METASILICATE	0.00	0.00	WOLLASTONITE	0.00	0.00	PYRITE	.00 .00
KALIOPHYLITE	0.00	0.00	ACMITE	0.00	0.00	THENARDITE	0.00 0.00
CORUNDUM	3.73	4.13	OLIVINE	0.00	0.00	FLUORITE	0.00 0.00
SODIUM CARBONATE	0.00	0.00	FORSTERITE	0.00	0.00	HALITE	.00 .00
CALCITE	.00	.00	FAYALITE	0.00	0.00	APATITE	.31 .28
ZIRCON	0.00	0.00	LARNITE	0.00	0.00		

FELDSPAR COMPOSITION

WEIGHT PERCENT	ORTHOCLASE 42.385	ALBITE 27.337	ANORTHITE 30.277	
MOLE PERCENT	41.680	28.534	29.787	
PLAGIOCLASE COMPOSITION	AN 51.074	PLAGIOCLASE COMPOSITION AFTER IRVING AND BARAGER 1971		AN 51.074

PROPORTION OF ANALYSIS IN GRANITE TETRAHEDRON
IN WEIGHT PERCENT = 77.084 MOLE PERCENT = 76.987

CO-ORDINATES IN THE SYSTEM ANORTHITE - QUARTZ - KALSILITE - NEPHELINE

FIRST COLUMN WEIGHT PERCENT,	SECOND COLUMN MOLE PERCENT									
GRANITE TETRAHEDRON	QUARTZ	53.95	76.56	ANORTHITE	20.16	6.98	NEPHELINE	9.86	6.69	KALSILITE 16.03 9.77
KALSILITE PROJECTION		64.25	84.85		24.01	7.74		11.74	7.41	0.00 0.00
NEPHELINE PROJECTION		59.85	82.05		22.36	7.48		0.00	0.00	17.79 10.47
ANORTHITE PROJECTION		67.57	82.31		0.00	0.00		12.35	7.19	20.08 10.50
QUARTZ PROJECTION		0.00	0.00		43.77	29.79		21.41	28.53	34.82 41.68

CO-ORDINATES IN TRIANGULAR DIAGRAMS

WEIGHT PROPORTIONS	QUARTZ	33.426	ORTHOCLASE	28.218	PLAGIOCLASE	38.356	
MOLE PROPORTIONS		31.385		28.598		40.016	
WEIGHT PROPORTIONS	CA	38.235	NA	19.182	K	42.583	
MOLE PROPORTIONS		47.270		21.456		31.275	
CATION PROPORTIONS		30.950		28.096		40.954	
WEIGHT PROPORTIONS	ALKALIS	35.346	TOT FE AS FEO	34.796	MGO	29.858	
MOLE PROPORTIONS		25.243		29.163		44.593	
CATION PROPORTIONS		41.576		23.101		35.323	

THORNTON-TUTTLE DIFFERENTIATION INDEX- (AB+OR+Q+NE+LC+KS)
WEIGHT (61.546 MOLE (61.252

KUNO SOLIDIFICATION INDEX -(MGO/MGO+FEO(TOTAL)+NA2O+K2O) WEIGHT (29.658

SAMPLE : CT-83-2P

ANALYSIS INPUT IN WEIGHT PERCENT

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
34.10	.29	4.95	1.79	6.14	.14	21.80	4.06	.13	.01	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

RECALCULATED TO 100% ANHYDROUS

SIO2	TIO2	AL2O3	FE2O3	FEO	MNO	MGO	CAO	NA2O	K2O	P2O5	BAO	SRO	CR2O3	F	CL	SO3	S	CO2	ZRO2	NIO	H2O
46.43	.39	6.74	2.44	8.37	.19	29.68	5.53	.18	.01	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

CATION PROPORTIONS IN ANALYSIS

SI	TI	AL	FE(3)	FE(2)	MN	MG	CA	NA	K	P	BA	SR	CR	F	CL	S	C	ZR	NI	H
40.65	.26	6.96	1.61	6.13	.14	38.73	5.19	.30	.02	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00

NORMATIVE MINERALS, 1ST COLUMN WT %, 2ND COLUMN IS BARTH-NIGGLI CATION NORM %

QUARTZ	0.00	0.00	DIOPSIDE	7.61	7.26	MAGNETITE	3.53	2.41
ORTHOCLASE	.08	.08	WOLLASTONITE	4.01	3.63	ILMENITE	.75	.52
ALBITE	1.50	1.50	ENSTATITE	3.06	3.20	HEMATITE	0.00	0.00
ANORTHITE	17.55	16.60	FERROSILITE	.55	.43	CHROMITE	.00	.00
NEPHELINE	0.00	0.00	HYPERSTHENE	33.14	33.49	PEROVSKITE	0.00	0.00
LEUCITE	0.00	0.00	ENSTATITE	28.17	29.52	RUTILE	0.00	0.00
SODIUM METASILICATE	0.00	0.00	FERROSILITE	4.97	3.97	SPHENE	0.00	0.00
POTASH METASILICATE	0.00	0.00	WOLLASTONITE	0.00	0.00	PYRITE	.00	.00
KALIOPHYLITE	0.00	0.00	ACMITE	0.00	0.00	THENARDITE	0.00	0.00
CORUNDUM	0.00	0.00	OLIVINE	35.73	38.06	FLUORITE	0.00	0.00
SODIUM CARBONATE	0.00	0.00	FORSTERITE	29.91	33.55	HALITE	.00	.00
CALCITE	.00	.00	FAYALITE	5.82	4.51	APATITE	.10	.08
ZIRCON	0.00	0.00	LARNITE	0.00	0.00			

FELDSPAR COMPOSITION

WEIGHT PERCENT	ORTHOCLASE	.421	ALBITE	7.828	ANORTHITE	91.752
MOLE PERCENT		.418		8.265		91.316
PLAGIOCLASE COMPOSITION AN		91.700	PLAGIOCLASE COMPOSITION AFTER IRVING AND BARAGER 1971		AN	91.700

CO-ORDINATES IN TRIANGULAR DIAGRAMS

WEIGHT PROPORTIONS	QUARTZ	0.000	ORTHOCLASE	.421	PLAGIOCLASE	99.579	
MOLE PROPORTIONS		0.000		.418		99.582	
WEIGHT PROPORTIONS	CA	96.667	NA	3.095	K	.238	
MOLE PROPORTIONS		97.046		2.812		.142	
CATION PROPORTIONS		94.262		5.462		.276	
WEIGHT PROPORTIONS	ALKALIS	.471	TOT FE AS FEO	26.114	MGO	73.414	
MOLE PROPORTIONS		.339		16.584		83.078	
CATION PROPORTIONS		.675		16.528		82.798	

THORNTON-TUTTLE DIFFERENTIATION INDEX- (AB+OR+Q+NE+LC+KS)
WEIGHT (1.578 MOLE (1.578

KUNO SOLIDIFICATION INDEX -(MGO/MGO+FEO(TOTAL)+NA2O+K2O) WEIGHT (73.414

Assessment Work Breakdown

1. Expenditure Credits for Lithogeochemical Survey (see Technical Data Statement)

6 drill core samples analyzed at follows:

Sample preparation @ $2.75 per sample	.....	$ 16.50
Gold @ $7.00 per sample	.....	42.00
Arsenic @ $6.00 per sample	.....	36.00
Barium @ $5.50 per sample	.....	33.00
	Subtotal	$ 127.50

11 drill core samples analyzed as follows:

Sample preparation @ $2.75 per sample	.....	$ 30.23
Whole rock package @ $29.00 per sample	.....	319.00
Vanadium @ $6.00 per sample	.....	66.00
Barium @ $3.00 per sample	.....	33.00
Rare earth element mineral exploration package @ $13.50 per sample	.....	148.50
	Subtotal	$ 596.75
	Total Expenditure	$ 724.25

Assessment Credits - one day's work for each $15.00 expended. Total number of assessment credits obtained for analyses ..... 48.28 days

Number of expenditure credits credited per claim (2 claims to be credited - P. 791669, P. 791672) ..... 24.14 days/cl.

2. Assessment credits earned for total 8-hr. technical days (see Assessment work breakdown statement) ..... 14 days

Number of Technical credits credited per claim, (one claim to be credited, P. 596000) ..... 14 days/claim

Total Number of Assessment Credits For Claims Earned From This Work

P. 596000 ..... 14.0 days

P. 791669 ..... 24.14 days

P. 791672 ..... 24.14 days

X-RAY ASSAY LABORATORIES
LIMITED

1885 LESLIE STREET • DON MILLS ONTARIO M3B 3J4 • (416) 445-5755

INVOICE TO
D.R. PYKE & ASSOCIATES
ATTN. D.R. PYKE
31 DELAIR CRESCENT
THORNHILL, ONTARIO
L3T 2M3

COPY TO:

SUBMITTED TO:
D.R. PYKE & ASSOCIATES
ATTN: D.R. PYKE
31 DELAIR CRESCENT
THORNHILL, ONTARIO
L3T 2M3

CUSTOMER NO. 754

INVOICE NO.	INVOICE DATE	WORK ORDER NO.	DATE SUBMITTED
23866	25-MAR-85	19448	1-MAR-85

TERMS

TERMS NET 30 DAYS
1.5% PER MONTH INTEREST ON ACCOUNT OVER 30 DAYS

CLIENTS P.O. NO.	CLIENT PROJECT NO.		TYPE OF SAMPLES SUBMITTED
			SPLIT CORE

NO OF PKGS	SHIPPED VIA	WAY BILL NO.	SHIPPED FROM
1 BOX	POST (PART OF 19444)		

QUANTITY	DESCRIPTION METHOD	XRAL CODE	UNIT COST	AMOUNT
1. 6	AU,PPB	2,10, 7, 0, 0, 0	7.00	42.00
2. 6	AS,MIXED ACID DIG.	3, 8, 0, 0, 0, 0	6.00	36.00
3. 6	BA,SEMI-QUANT.	90, 5, 0, 0, 0, 0	5.50	33.00
4. 6	SPLIT CORE, CRUSHING & MILLING (CHROME STEEL MILL)	99, 1, 0, 0, 0, 0	2.75	16.50

PAID MAY 2 1985

X-RAY ASSAY LABORATORIES LIMITED
1885 LESLIE STREET
DON MILLS, ONT. M3B 3J4
TEL: (416) 445-5755

SUB-TOTAL $ 127.50

MISC. CHARGES

SHIPPING CHARGES	CUSTOM BROKERAGE	TELEX	MINIMUM CHARGES
OTHER			SURCHARGE RUSH SERVICE

TOTAL IN CANADIAN FUNDS $ 127.50

TRIPLICATE COPY

XRAL

X-RAY ASSAY LABORATORIES
LIMITED

1885 LESLIE STREET • DON MILLS ONTARIO M3B 3J4 • (416) 445-5755

INVOICE TO:
D.R. PYKE & ASSOCIATES
ATTN: D.R. PYKE
31 DELAIR CRESCENT
THORNHILL, ONTARIO
L3T 2M3

COPY TO:

SUBMITTED TO:
D.R. PYKE & ASSOCIATES
ATTN: D.R. PYKE
31 DELAIR CRESCENT
THORNHILL, ONTARIO
L3T 2M3

CUSTOMER NO. 754

INVOICE NO.	INVOICE DATE	WORK ORDER NO.	DATE SUBMITTED
23896	28-MAR-85	19444	1-MAR-85

TERMS

TERMS NET 30 DAYS
1.5% PER MONTH INTEREST ON ACCOUNT OVER 30 DAYS

CLIENTS P.O. NO.	CLIENT PROJECT NO.		TYPE OF SAMPLES SUBMITTED
			SPLIT CORE

NO. OF PKGS	SHIPPED VIA	WAY BILL NO.	SHIPPED FROM
1 BOX	POST		

QUANTITY		DESCRIPTION METHOD	XRAL CODE	UNIT COST	AMOUNT
1.	17	V,FUSION	4, 7, 0, 0, 0, 0	6.00	102.00
2.	17	RARE EARTH (MINERAL EXPLORATION PACKAGE)	17,14,20, 0, 0, 0	13.50	229.50
3.	17	NA2O,MGO,AL2O3,SIO2,P2O5,K2O,CAO,TIO2,CR2O3,MNO ,FE2O3,RB,SR,Y,ZR,NB,WHOLE ROCK ANALYSIS ,LESS THAN 21	100, 6, 0, 0, 0, 0	29.00	493.00
4.	17	BA ,MORE THAN 9,LESS THAN 51	110, 6, 0, 0, 0, 0	3.00	51.00
5.	17	SPLIT CORE, CRUSHING & MILLING (CHROME STEEL MILL)	99, 1, 0, 0, 0, 0	2.75	46.75

PAID MAY 2 1985

X-RAY ASSAY LABORATORIES LIMITED
1885 LESLIE STREET
DON MILLS, ONT. M3B 3J4
TEL: (416) 445-5755

SUB-TOTAL $ 922.25

MISC. CHARGES

SHIPPING CHARGES	CUSTOM BROKERAGE	TELEX	MINIMUM CHARGES

OTHER	SURCHARGE - RUSH SERVICE

TOTAL IN CANADIAN FUNDS $ 922.25

TRIPLICATE COPY

File _____

Ontario

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geochemical

Township or Area Thorneloe Township

Claim Holder(s) Comstate Resources Ltd.

Survey Company Comstate Resources Ltd.

Author of Report D.R. Pyke

Address of Author 31 Delair Cres., Thornhill, Ont.

Covering Dates of Survey Feb. 21, 1985-May 1, 1985
(linecutting to office)

Total Miles of Line Cut ---------

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: May 2/85 SIGNATURE: D R Pyke
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P	596000
P	791669
P	791672

TOTAL CLAIMS 3 Up.

If space insufficient, attach list

OFFICE USE ONLY

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken P. 596000

Total Number of Samples 16

Type of Sample Split drill core
(Nature of Material)

Average Sample Weight 400-800 grams

Method of Collection split drill core

Soil Horizon Sampled ---

Horizon Development ---

Sample Depth ---

Terrain ---

Drainage Development ---

Estimated Range of Overburden Thickness ---

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis ---

General

ANALYTICAL METHODS

Values expressed in: per cent [X]
p. p. m. [X]
p. p. b. [X]

Cu, Pb, Zn, Ni, Co, Ag, Mo, (As) (circle)

Others Whole rock majors, Rb, Sr, Y, Zr,

~~Field Analysis~~ (Nb, Ba, Sc, V, La, Ce, Sm ~~tests~~)

~~Extraction Method~~ Lu, Au, Ba

Analytical Method

Reagents Used

Field Laboratory Analysis

No. (_____ tests)

Extraction Method

Analytical Method

Reagents Used

Commercial Laboratory (X-Ray Assay Labs ~~tests~~)

Name of Laboratory 1880 Leslie st.

Extraction Method ---

Analytical Method ---

Reagents Used ---

General Whole rock major and minor elements - X-Ray Flourescence. Sc, La, Ce, Sa, Lu - neutron activation. Vanadium-DCP method; Gold-combined Fire Assay and DCP; Arsenic - combined fire assay-atomic absorption. Barium (semi-quant.)-X-Ray Flour.

W8506.00098

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

#09

42A06SW0096 2.8060 THORNELOE

900

The Mini...

Type of Survey(s)	Township or Area
GEOCHEMICAL (EXPENDITURE)	THORNELOE

Claim Holder(s)	Prospector's Licence No.
COMSTATE RESOURCES LTD	T-1127

Address: #403-8199 YONGE ST. THORNHILL ONT. L3T 2C6

Survey Company	Date of Survey (from & to) Day / Mo. / Yr.	Total Miles of line Cut
D.R. PYKE & ASSOCIATES INC	21 02 85 — 25 02 85	

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		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	7

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

RECEIVED
PORCUPINE DIVISION
MAR 8 1985
P.M.
7 8 9 10 11 12 1 2 3 4 5 6

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	791669	21.6
	791672	21.6
	595997	0
	596000	0

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

RECEIVED
APR 09 1985
MINING LANDS SECTION

RECORDED
MAR 8 1985
Recorder

Expenditures (excludes power stripping)

Type of Work Performed (Sect. 77-19): GEOCHEMICAL & WHOLE ROCK ANALYSES

Performed on Claim(s): P596000, P595997

Calculation of Expenditure Days Credits

Total Expenditures: $ 650.00 ÷ 15 = Total Days Credits: 13.3

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: 4

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
7.1.3	Mar. 8/85	Stanley
	Date Approved as Recorded	Branch Director
	see revised statement	

Date	Recorded Holder or Agent (Signature)
Mar 5/85	D R Pyke

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: D. R. Pyke - 31 DELAIR CRES THORNHILL ONT L3T 2M3

Date Certified	Certified by (Signature)
MAR 5/85	D R Pyke.

1362 (R1/9)

Assessment Work Breakdown

Man Days are based on eight (8) hour Technical or Line-cutting days. Technical days include work performed by consultants, draftsmen, etc..

Type of Survey GEOCHEMICAL (EXPENDITURE)

Technical Days		Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
2	X 7 =	14	+		=	14	÷	2	=	7

Type of Survey

Technical Days		Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
	X 7 =		+		=		+		=	

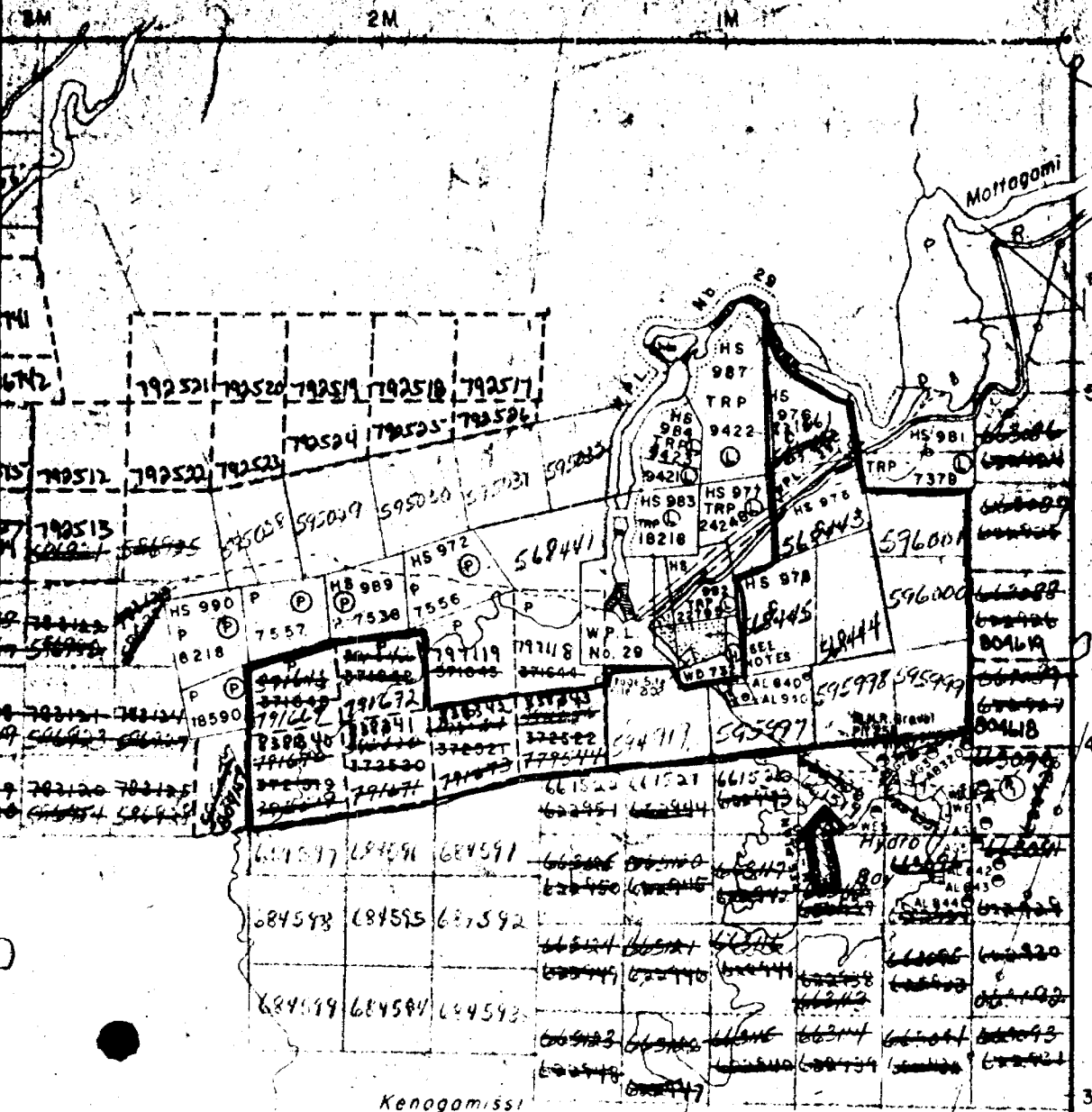
Type of Survey

Technical Days		Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
	X 7 =		+		=		+		=	

Type of Survey

Technical Days		Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
	X 7 =		+		=		÷		=	

wp. M. 264



TWP M. 307

THE TOWNSHIP OF THORNEL

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

SCALE: 1-INCH 40

LEGEND

REGISTERED PLAN OF SUBDIVISION
PATENTED LAND
CROWN LAND SALE
LEASES
LOCATED LAND
LICENSE OF OCCUPATION
MINING RIGHTS ONLY
SURFACE RIGHTS ONLY
ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED

May 29, 1985 File: 2.8060

Dr. D.R. Pyke
c/o Comstate Resource Limited
Suite 403
8199 Yonge Street
Thornhill, Ontario
L3T 2C6

Dear Sir:

RE: Data for Assaying submitted on Mining Claim P 596000 in Thorneloe Township

---

On May 23, 1985, Dr. Pyke called this office to enquire about the non-allowance of geochemical credits. The sampling of core taken from drill holes is not considered a geochemical survey within the intent of the Mining Act. In this instance, only the analytical costs are applicable for assessment credits.

For further information, please contact Mr. Ray Pichette at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-4888

R. Pichette:sc

cc: Dr. D.R. Pyke
31 Delair Crescent
Thornhill, Ontario
L3T 2M3

cc: Mining Recorder
Timmins, Ontario

Registered

April 29, 1985 Work Report #98

Comstate Resources Ltd
Suite 403
8199 Yonge Street
Thornhill, Ontario
L3T 2C6

Dear Sirs:

RE: Mining Claims P 791669, et al,
in the Township of Thorneloe

I have not received the repotts and maps (in duplicate) for the Geochemical Survey on the above-mentioned claims.

As the assessment "Report of Work" was recorded by the Mining Recorder on March 8, 1985, the 60 day period allowed by Section 77 of the Mining Act for the submission of the technical reports and maps to this office will expire on May 9, 1985.

If the material is not submitted to this office by May 9, 1985, I will have no alternative but to instruct the Mining Recorder to delte the work credits from the claim record sheets.

for further information, please contact Mr. Arthur Barr at (416)965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

A. Barr:mc

cc: Dr. D.R. Pyke
31 Delair Crescent
Thornhill, Ontario
L3T 2M3

Encl.

cc: Mining Recorder
Timmins, Ontario

May 2, 1985

To Whom it may concern:

I have enclosed a copy of the original report of work form for this geochemical survey. The form was submitted to the Timmins office on March 5, 1985.

I wish to point out, at this time, that I have underestimated the number of expenditure days credits earned on claims P. 791669 and P. 791672. The true calculated expenditure days credit for each claim is not 21.60 days, as reported originally on the report of work form; rather, each claim should be allotted 24.14 days expenditure credits. This calculation is explicitly outlined on the Assessment Work Breakdown sheet enclosed at the back of this report.

Thank you very much for your attention to this matter.

Sincerely,

D.R. Pyke

Ontario

Ministry of Natural Resources

File _____

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geochemical

Township or Area Thorneloe Township

Claim Holder(s) Comstate Resources Ltd.

Survey Company Comstate Resources Ltd.

Author of Report D.R. Pyke

Address of Author 31 Delair Cres., Thornhill, Ont.

Covering Dates of Survey Feb. 21, 1985-May 1, 1985
(linecutting to office)

Total Miles of Line Cut ----------

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
P.	596000
P	791669
P	791672

If space insufficient, attach list

TOTAL CLAIMS x 3 DP

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

DAYS per claim

Geophysical
- Electromagnetic _____
- Magnetometer _____
- Radiometric _____
- Other _____

Geological _____

Geochemical _____

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: May 2/85 SIGNATURE: D.R. Pyke
Author of Report or Agent

Res. Geol. _____ Qualifications 2.3877

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

837 (5/79)

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations _____ Number of Readings _____

Station interval _____ Line spacing _____

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy – Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

_____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

_____

Base station value and location _____

_____

Elevation accuracy _____

INDUCED POLARIZATION RESISTIVITY

Instrument _____

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time _____ Frequency _____

– Off time _____ Range _____

– Delay time _____

– Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

_____

Additional information (for understanding results) _____

_____

_____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

_____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken P. 596000

Total Number of Samples 16

Type of Sample Split drill core
(Nature of Material)

Average Sample Weight 400-800 grams

Method of Collection split drill core

Soil Horizon Sampled ---

Horizon Development ---

Sample Depth ---

Terrain ---

Drainage Development ---

Estimated Range of Overburden Thickness ---

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis ---

General

ANALYTICAL METHODS

Values expressed in: per cent [X]
p. p. m. [X]
p. p. b. [X]

Cu, Pb, Zn, Ni, Co, Ag, Mo, (As)-(circle)

Others Whole rock majors, Rb, Sr, Y, Zr,
~~Field Analysis~~ (Nb, Ba, Sc, V, La, Ce, Sm ~~tests~~)
~~Extraction Method~~ Lu, Au, Ba

Analytical Method

Reagents Used

Field Laboratory Analysis

No. (____ tests)

Extraction Method

Analytical Method

Reagents Used

Commercial Laboratory (X-Ray Assay Labs tests)

Name of Laboratory 1880 Leslie st.

Extraction Method ---

Analytical Method ---

Reagents Used ---

General Whole rock major and minor elements - X-Ray Flourescence. Sc, La, Ce, Sa, Lu - neutron activation. Vanadium-DCP method; Gold-combined Fire Assay and DCP; Arsenic - combined fire assay-atomic absorption. Barium (semi-quant.)-X-Ray Flour.

Mining Lands Section

File No 2.8060

Control Sheet

TYPE OF SURVEY

____ GEOPHYSICAL

____ GEOLOGICAL

✓ GEOCHEMICAL

✓ EXPENDITURE

MINING LANDS COMMENTS:

assaying of drill core does not constitute a geochemical survey.

lgd

Doug

Signature of Assessor

6/5/85

Date

LD

1985 06 06

Your File: 098/85
Our File: 2.8060

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

RE: Notice of Intent dated May 14, 1985
Data for Assaying on Mining Claim
P 596000 in Thorneloe Township

The assessment work credits, as listed with the above-mentioned Notice of Intent, have been approved as of the above date.

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

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

D. Isherwood:mc

cc: Comstate Resources Ltd
Suite 403
8199 Yonge Street
Thornhill, Ontario
L3T 2C6

cc: Dr. D.R. Pyke
31 Delair Crescent
Thornhill, Ontario
L3T 2M3

Encl.

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

cc: Resident Geologist
Timmins, Ontario

Ministry of Natural Resources
Ontario

Technical Assessment Work Credits

File: 2.8060

Date: 1985 05 14

Mining Recorder's Report of Work No.: 098/85

Recorded Holder: COMSTATE RESOURCES LIMITED

Township or Area: THORNELOE TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic _____ days Magnetometer _____ days 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. ☐ Credits have been reduced because of corrections to work dates and figures of applicant.	$724.25 SPENT ASSAYING CORE FROM DRILL HOLE ON CLAIM P 596000. 48.3 DAYS ASSESSMENT WORK CREDIT ALLOWED WHICH MAY BE GROUPED IN ACCORDANCE WITH SECTION 76(6) OF THE MINING ACT RSO 1980.

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

NO GEOCHEMICAL CREDITS ALLOWED

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; Geological — 40; Geochemical — 40; Section 77(19) — 60:

828 (83/6)

Ministry of
Natural
Resources

Ontario

May 29/85

1985 05 14

Your File: 098/85
Our File: 2.8060

Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at 416/965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3

D. Isherwood:mc

Encls.

cc: Comstate Resources Ltd
Suite 403
8199 Yonge Street
Thornhill, Ontario
L3T 2C6

cc: Dr. D.R. Pyke
31 Delair Crescent
Thornhill, Ontario
L3T 2M3

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Ministry of Natural Resources

Ontario

Notice of Intent

for Technical Reports

1985 05 14

2.8060/098/85

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

TRIM LINE

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
(R1)	SEC. 43/70		17/5/72	S.R.O.	164584

SAND AND GRAVEL

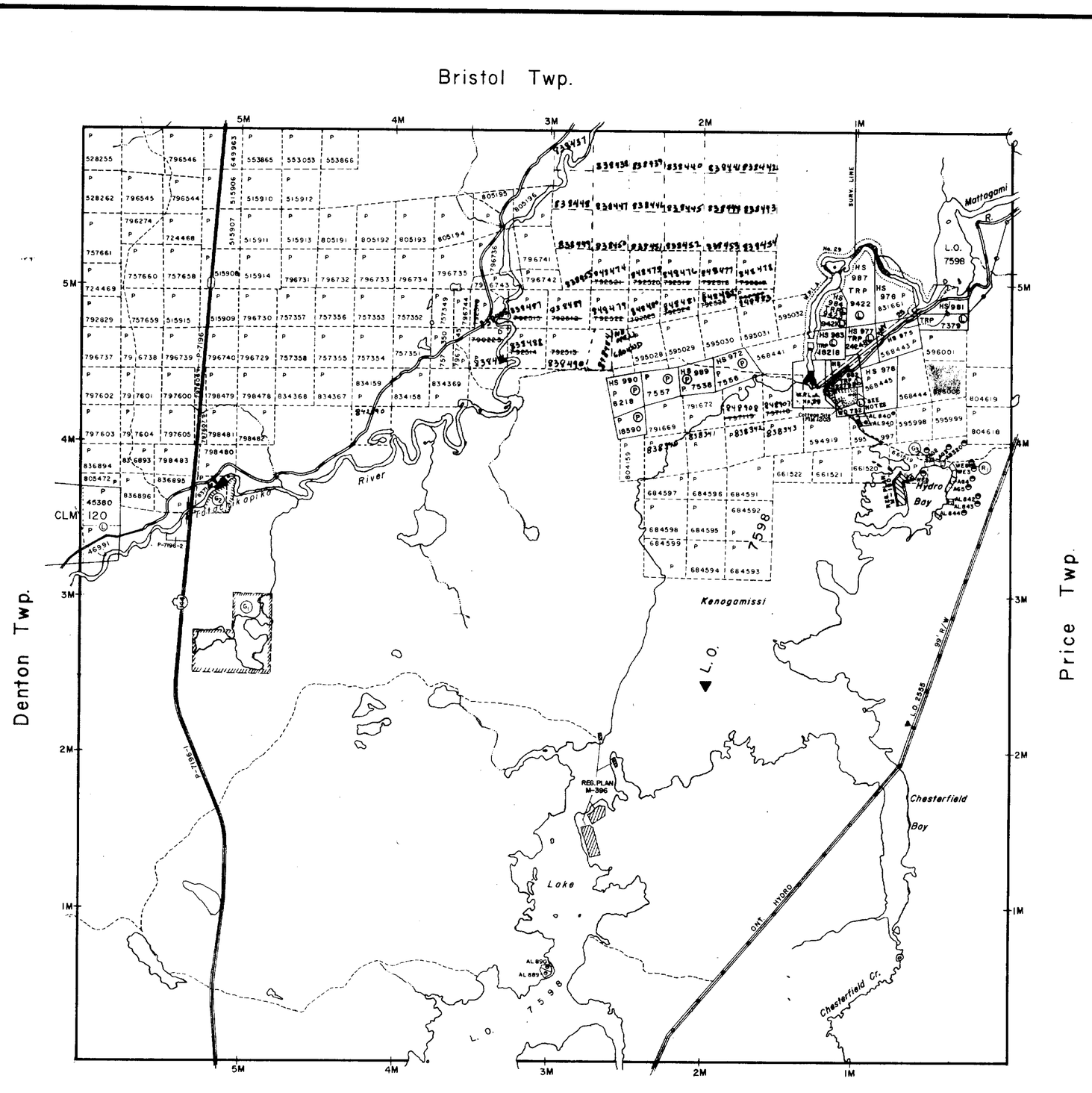
(G1)	GRAVEL	FILE 143834
(G2)	M.N.R. GRAVEL RESERVE	
(G3)	M.N.R. GRAVEL PIT 258	FILE 111467

NOTES

Reservation for Deputy Chief Ranger's Headquarters site shown thus [redacted] File: 110657

Flooding Rights on Kenogamissi Lk. & Mattagami R. are reserved to Ont. Hydro — L.O. 7598. File: 1163 vol. 3

This township lies within the Municipality of the CITY OF TIMMINS.



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	(P) or ●
" , SURFACE RIGHTS ONLY	◓
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	(L) or ■
" , SURFACE RIGHTS ONLY	◨
" , MINING RIGHTS ONLY	◧
LICENCE OF OCCUPATION	L.O. or ▼
ORDER-IN-COUNCIL	OC
RESERVATION	◔
CANCELLED	⊗
SAND & GRAVEL	◔

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

THORNELOE

M.N.R. ADMINISTRATIVE DISTRICT

TIMMINS

MINING DIVISION

PORCUPINE

LAND TITLES / REGISTRY DIVISION

COCHRANE

Ontario Ministry of Natural Resources — Land Management Branch

Date MARCH 1985

April 4/85 ~ DM cj

Number G-3229

TRIM LINE