

32E04SW0003 2.14451 STEELE

010

RESULTS OF EXPLORATION WORK
CONDUCTED ON THE CASE PEGMATITE
STEELE TOWNSHIP
LARDER LAKE MINING DIVISION

NTS 32 E/4

James G. Burns

Qual 63A, 476

December 1991

2.14451



32E04SW0003 2.14451 STEELE

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INTRODUCTION

Property, Location & Access

Four claims numbered L-1158639 to 1158542 comprise the property. It is located approximately 62 air kilometers northeast of Iroquois Falls in Steele Township, Larder Lake Mining Division. The north shore of Lake Abitibi lies about 10 km to the south. Case Lake is 1 km to the northwest (Figure 1).

Access to the property is easily attained by a network of logging haul roads that originate at Iroquois Falls. Of the 91 km to the property only the last 14 km, the section that departs from the main Trans-Limit Road, are not maintained.

Previous Work

The current claims were staked "post for post" with former claims L-229568, 229569, 229570 & 300983 which had been staked in 1971 and surveyed in 1975. Len Darby of Timmins was the original holder who, in 1975, transferred the claims to a private company, Dex Ltd. According to a letter submitted in 1974 to the Mining Recorder, the intent of Dex was to evaluate the pegmatite for the possible production of phlogopite to supply the paint & electrical industries. The results of test work undertaken are not on file. However, it is known that between 1971 & 1975 the pegmatite outcrop was stripped & trenched, and that one hole 101 feet in length was drilled.

In 1987 the claims were allowed to lapse. A single claim was staked in 1989 by D. O'Reilly. No assessment work was recorded, and there is no evidence that any exploration was undertaken by that individual.

Dex still hold another 10 claims that adjoin to the east and south. Prior to surveying these claims in 1980 Dex stripped one area of pegmatite, and drilled one hole of 216' in length (no drill log on file; hole length determined from claim abstracts).

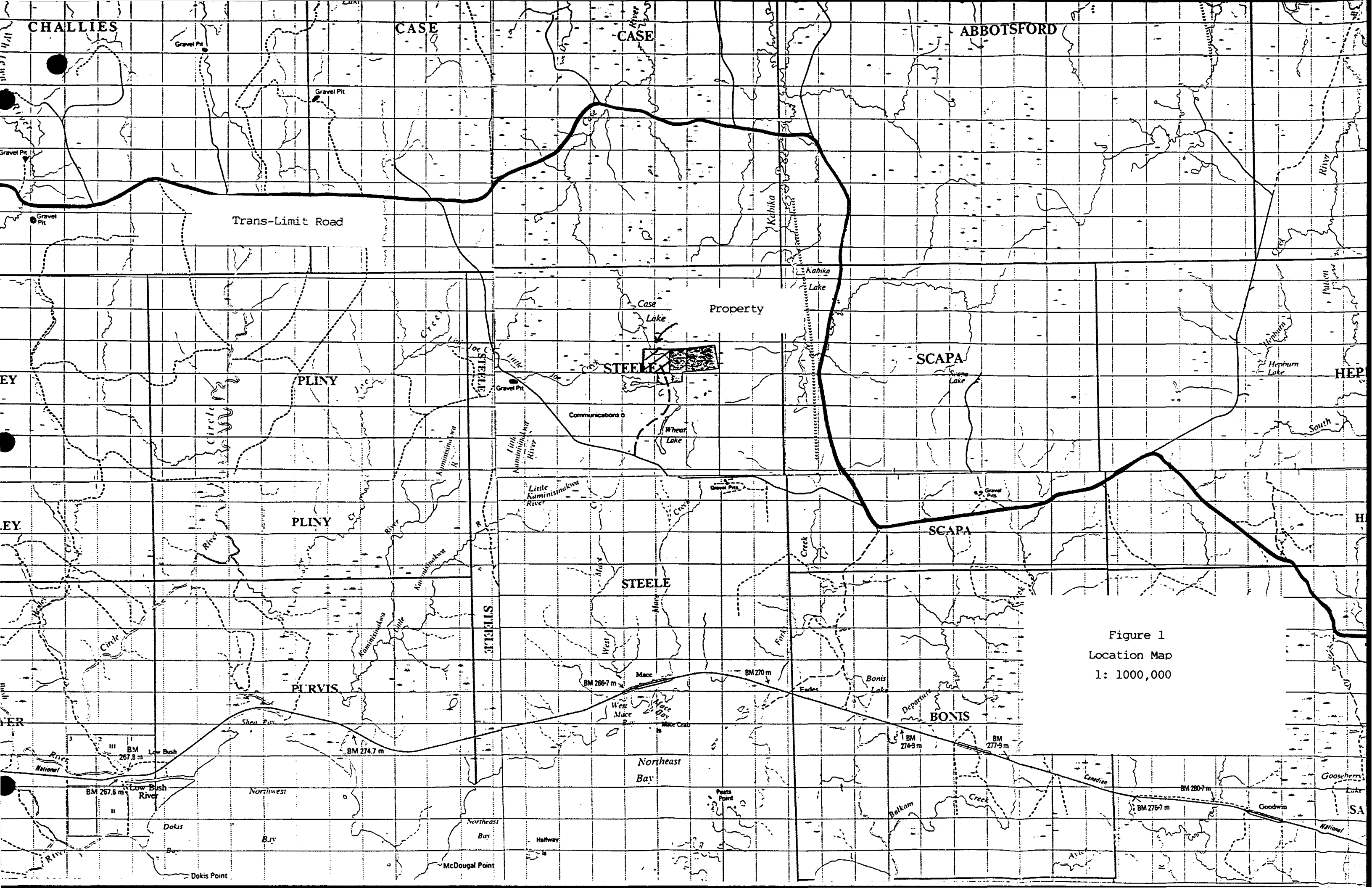


Figure 1
 Location Map
 1: 1000,000

1991 PROGRAMME

The purposes of the efforts expended in 1991 were:

- To map the pegmatite in detail in order to determine its outcrop extent, shape, zonation, etc.
- To map and sample the claims in an effort to locate other pegmatites
- To ascertain if geophysical methods (magnetic & VLF surveys) might be applicable as an aide in the mapping of granite/sediment and granite/pegmatite contacts or the controlling structures of the pegmatite.
- to determine, if only in a general way, the Li, Ta & Y potential of the pegmatite.

A base line was established along the central east-west survey line, and cross lines were run north-south by hip chain and compass. Line spacing was a nominal 100m over the property and 25m over the pegmatite outcrops, but the survey lines were used when convenient. A 20m station interval was used on all lines.

Figure 2 (1:2500) and Figure 3 (1:500) are geological maps of the property and the pegmatite. Results of the magnetometer survey, which was conducted in conjunction with the setting of the grid, and of the aborted VLF survey are presented in Figures 4 & 5 respectively.

Samples were collected of spodumene bearing pegmatitic material from the trenches, of "pairs" of muscovite & feldspar also from the trenches and of the granite & sediments. All were sent to Chemex Labs Ltd. in Mississauga for assay/analysis.

GEOLOGY

Regional Setting

Geological mapping of the area was conducted by S. Lumbers in 1959, and subsequently published in 1962 as Geological Report No. 8, accompanied by map 2018. In 1978 G.W. Johns compiled the data for the Burntbush Lake-Detour Lake Area (South Part), which includes Steele Township, and his map P.2243 was released in 1979.

The claims straddle the contact between the Case Batholith to the north and the Scapa Metasediments to the south. Whether the batholith, which has a mapped plus inferred extent in excess of 5000 square kilometers, represents a single intrusion or a series of intrusions is not known. It is mainly a quartz monzonite, but near its contacts, as in the vicinity of the claims, it grades to a granodiorite.

A wedge of metasediments, termed the Scapa Metasediments, cross Steele Township along the southern contact of the batholith. They vary in thickness from 1/2 km on the west to greater than 5 km on the east.

A set of three roughly parallel pegmatite dykes, that are collectively known as the Case Pegmatite, strike obliquely to the batholith/sediment contact at about 60° NE. Maximum known dimensions of the largest body are 420m long by 30m wide. Each pegmatite displays complex zoning.

Lithological Descriptions

- Scapa Metasediments

The sediments outcrop in the southwest portion of the property, and cross it in an easterly to east southeasterly direction with a southward dip of 60° to 70°. Bedding may be crude to well defined, and individual bed range from 1-2 cm in thickness.

The unit is fine grained and schistose. Quartz, feldspar & biotite are its main constituents, and garnets are occasionally recognized. Staurolite is common in some beds and is easily identified on the weathered surface as 2cm diameter knobs. Originally, the rock was probably a graywacke.

- Case Granodiorite

Granodiorite is the dominant phase of the batholith near its contact. It is grayish pink in colour, massive, medium to coarse grained and equigranular. Quartz (20%), feldspar (70%) and biotite (10%) comprise the bulk of the its composition.

- Case Pegmatite

As mentioned previously, a set of three roughly parallel dykes comprise the Case Pegmatite. They occur as a raised knob outcrop with a sharp, steep contact with the granodiorite host. Quartz, feldspar, muscovite and spodumene are the main mineral constituents. Various physical data with respect to the individual dykes are presented in Table 1.

TABLE 1

Pegmatite Dykes - Physical Data

Dyke	Max Length in Outcrop	Max Thickness in Outcrop	Distance Between Dykes
North	100m	15m	20m
Central	420m	30m	100m
South	140m	10m	

All three dykes display mineralogical, and grain size zonation, and an attempt was made to subdivide the pegmatites on the basis of grain size of the main mineral components. The border zone is fine grained, rarely more than 2m thick, and composed of quartz, feldspar & muscovite. Only along the southern edge of the Central dyke does it display any continuity.

The average grain size of the coarse grain zone is of the order of 1-2cm. Spodumene concentrations are greatest here, and may be as high as 15-20%. Crystals are normally stubby with an average length of 3-7cm.

In the very coarse grained zone the quartz, feldspar & muscovite range from 2-5cm. Spodumene crystals are fewer in number and probably overall percentage, but may be as long as 50cm with a 5-7cm diameter.

The quartz core is composed essentially of quartz and feldspar with a "grain size" in excess of 5cm. The largest spodumene crystals up to 90cm in length are found in this zone

(Lumbers).

- Diabase

No outcrops of diabase were observed during the course of mapping, but the presence of a dyke is inferred from the results of the magnetometer survey. The strike of the magnetic feature does not, however, conform to either of the dyke sets of the region.

GEOPHYSICS

Magnetometer Survey

As the flagged grid was being set the total magnetic field was read with a Geometrics model G816/826 magnetometer. Readings were corrected for diurnal drift by a system of base station looping.

With the exception of a linear magnetic high in the northern half of the property the magnetic relief across the claims is low and featureless. There is no correlation with mapped contacts.

The linear magnetic feature has a relief of 400 to 500 nT and a east southeast strike, and may represent a dyke possibly of diabase composition. However, the known dyke sets in the area strike either north northwest or northeast. Therefore, the magnetic feature may be an expression of a rock type other than diabase.

VLF Survey

A VLF survey utilizing a Phoenix VLF-2 unit tuned to the Cutler, Maine transmitting station was commenced in an attempt to map any structural features that might cross the claims. Unfortunately the station signal was cut after only two lines had been completed thus forcing the survey to be aborted.

ROCK SAMPLING AND ANALYTICAL RESULTS

Assays/Analysis

There are no records of any assays or test work conducted on material taken from the Case Pegmatite. Therefore as a first step in an effort to evaluate the economic potential of the dykes 15 grab samples were selected from the pits, which had been blasted by previous claim holders, and assayed/analyzed for Li, Ta, Cs & Y. Ten samples were from the Central Zone, 2 from the Northern & 3 from the Southern. Sample locations are shown on Figures 2 & 3, and results are listed in Appendix I. Table 2 is a tabulation of some of the results.

A sixteenth sample, a single spodumene crystal with no adhering quartz or other mineral, was assayed for Li only. The Certificate of Assay is filed in Appendix II.

TABLE 2

Pegmatite Grab Samples - Trace Element Summary

	Li	Ta	Cs	Y
Highest Value & Zone	1.20% (CZ)	638 ppm (NZ)	652 ppm (CZ)	680ppm (CZ)
NZ -Av. Value	0.28%	406ppm	314ppm	223ppm
-Range	0.12-0.43%	174-638ppm	264-364ppm	155-290ppm
CZ -Av. Value	0.75%	157ppm	204ppm	152ppm
-Range	0.28-1.20%	36-434ppm	72-652ppm	16-680ppm
SZ -Av. Value	0.06%	34ppm	136ppm	200ppm
-Range	0.01-0.11%	26-40ppm	89-223ppm	110-270ppm

NZ = North Zone CZ = Central Zone SZ = South Zone

Conversion Factors: %Li to %Li₂O : X 2.15
 ppm Ta to %Ta₂O₅ : X (1.22 x 0.0001)
 ppm Cs to %Cs₂O : X (1.06 x 0.0001)
 ppm Y to %Y₂O₃ : X (1.27 x 0.0001)

Lithium values ranged to a high of 1.20% Li or 2.58% Li_2O . As expected from visual estimates of spodumene content, the highest average value of 0.75% Li or 1.61% Li_2O was obtained from the Central Zone. This value is as good as the average grade reported for other lithium (in spodumene) deposits in Canada (Cerny, 1991).

The spodumene crystal itself assayed 3.55% Li or 7.63% Li_2O . Since the maximum possible amount of lithium in spodumene is 3.75% Li (8.03% Li_2O) there is very little atomic substitution of lithium by sodium. The crystals may be considered as being 95% pure.

The maximum Ta value returned was 638ppm or 0.078% Ta_2O_5 . This value must be considered interesting since the average grade currently being mined at Tanco is 0.166% Ta_2O_5 (Scott).

Pegmatite Evaluation

Several methods have been devised to classify pegmatites as to their mineralogical potential (Cerny, 1982 pp. 477-485). One such method involves the plotting of K/Cs versus Na_2O of potassium feldspars, while another utilizes the the Li, Rb & Cs values for potassium feldspar & muscovite. In both cases the rare element mineral assemblage that can be expected for the pegmatite can be determined from a comparison of plots of values for known dykes.

Ten samples of muscovite & feldspar pairs were collected; five from the Central Zone, two from the North and three from the South. To ensure that the samples were not contaminated and were as mono mineralic as possible, prior to shipment each was washed with nitric acid to remove any organic material and then hand picked. Analytical results may be found in Appendix III.

Figure 6 is a K/Cs versus Na_2O diagram which was developed by Gordiyenko (Cerny, 1982), and which displays the various fields for pegmatite mineralogical grouping. The plots of the average values for the Central & South Zones are plotted as shown. Fields 2a & 2b are simply described as spodumene bearing & beryl bearing respectively. No plot was made for the North Zone since the potassium & sodium content of the feldspar samples analyzed indicate that the feldspars were most probably

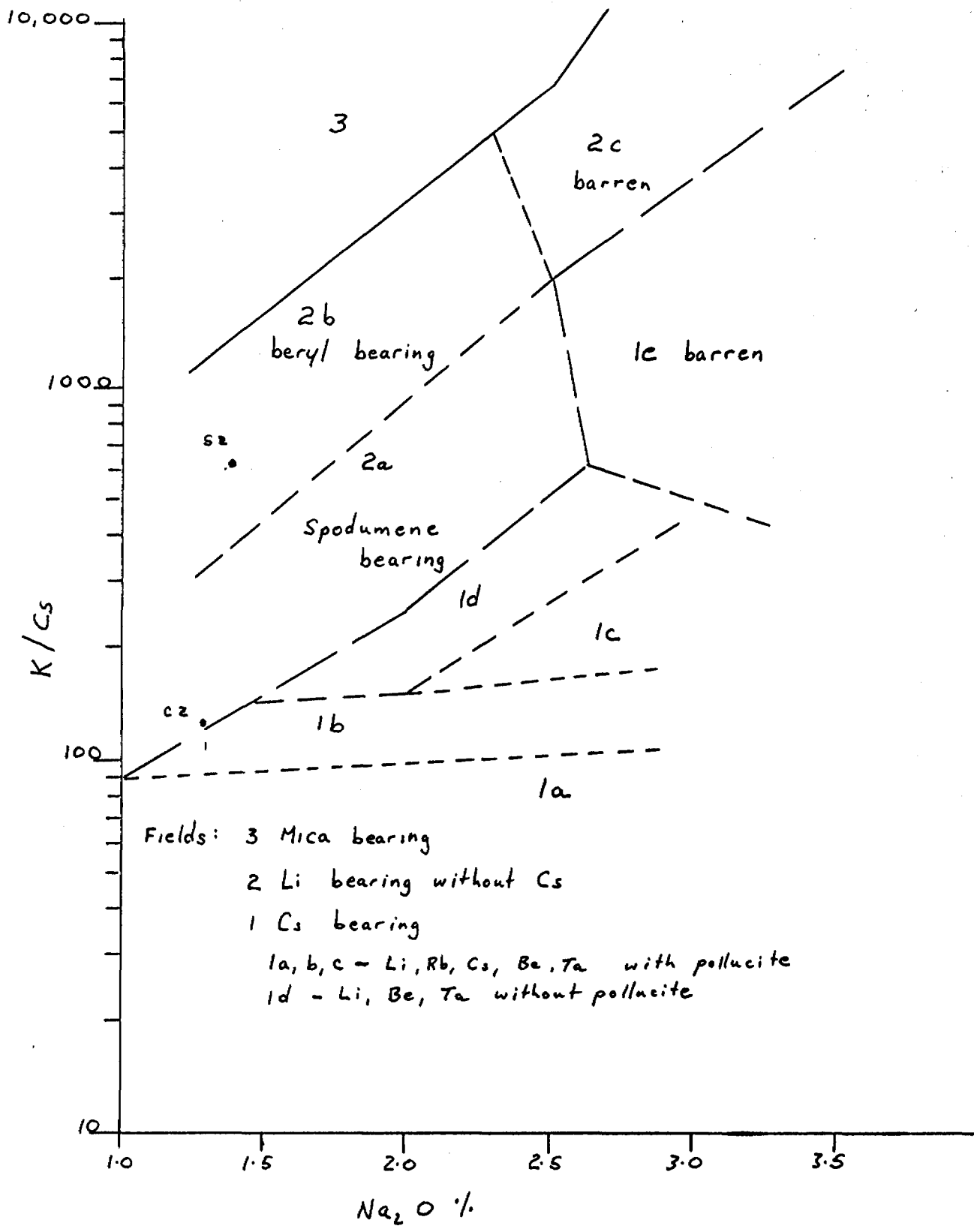


Figure 6

K/Cs vs. Na O Diagram
 K- feldsoar in Pegmatite
 (after Goriyenko)
 2a Spodumene Bearing
 2b Beryl Bearing

albites.

Figures 7, 8 & 9 are plots of the values of Li, Rb & Cs in muscovite & feldspar for the North, Central & South Zones respectively. For the North Zone the average values in the muscovite compare well with those for spodumene pegmatites with Li, Be, Cs & Ta mineralization. Values for the feldspar are suspect, again since the feldspar was sodium rather than potassium rich.

For the Central Zone all values in both muscovite and feldspar compare very favourably with spodumene pegmatites prospective for Li, Be, Cs & Ta mineralization. The comparison for the South Zone is also good except the average value for Li in feldspar is low.

Lithogeochemistry

Geochemical dispersion halos for various elements normally enriched in pegmatitic fluid phases have been found to exist up to 250m from pegmatite bodies (Cerny, 1982). In an effort to locate other pegmatites that either do not outcrop or only subcrop, sixteen rock samples (nine of granite & seven of sediments) were collected during the course of geological mapping, and submitted for trace and/or whole rock analysis. Results are listed in Appendix IV. Although a few samples were anomalous in some elements all anomalous values can be explained by proximity to one of the known pegmatites.

G 8-91
Semi-Logarithmic, 5 Cycles X 10 to the inch.
MADE IN CANADA

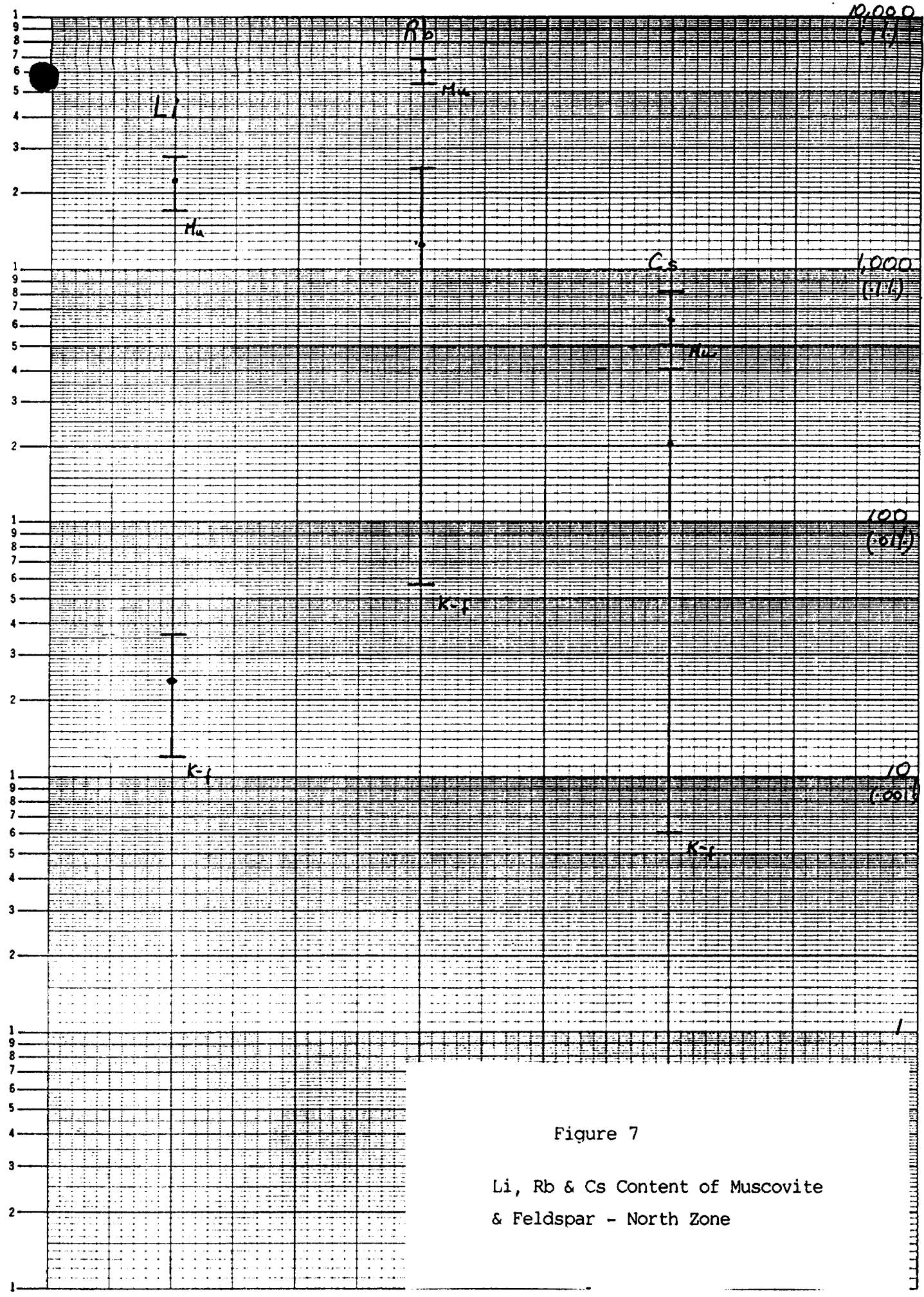


Figure 7

Li, Rb & Cs Content of Muscovite
& Feldspar - North Zone

GB-81
Semi-Logarithmic, 4 Cycles X 10 to the Inch
MADE IN CANADA

CCF'S
MICROGRAPH

100

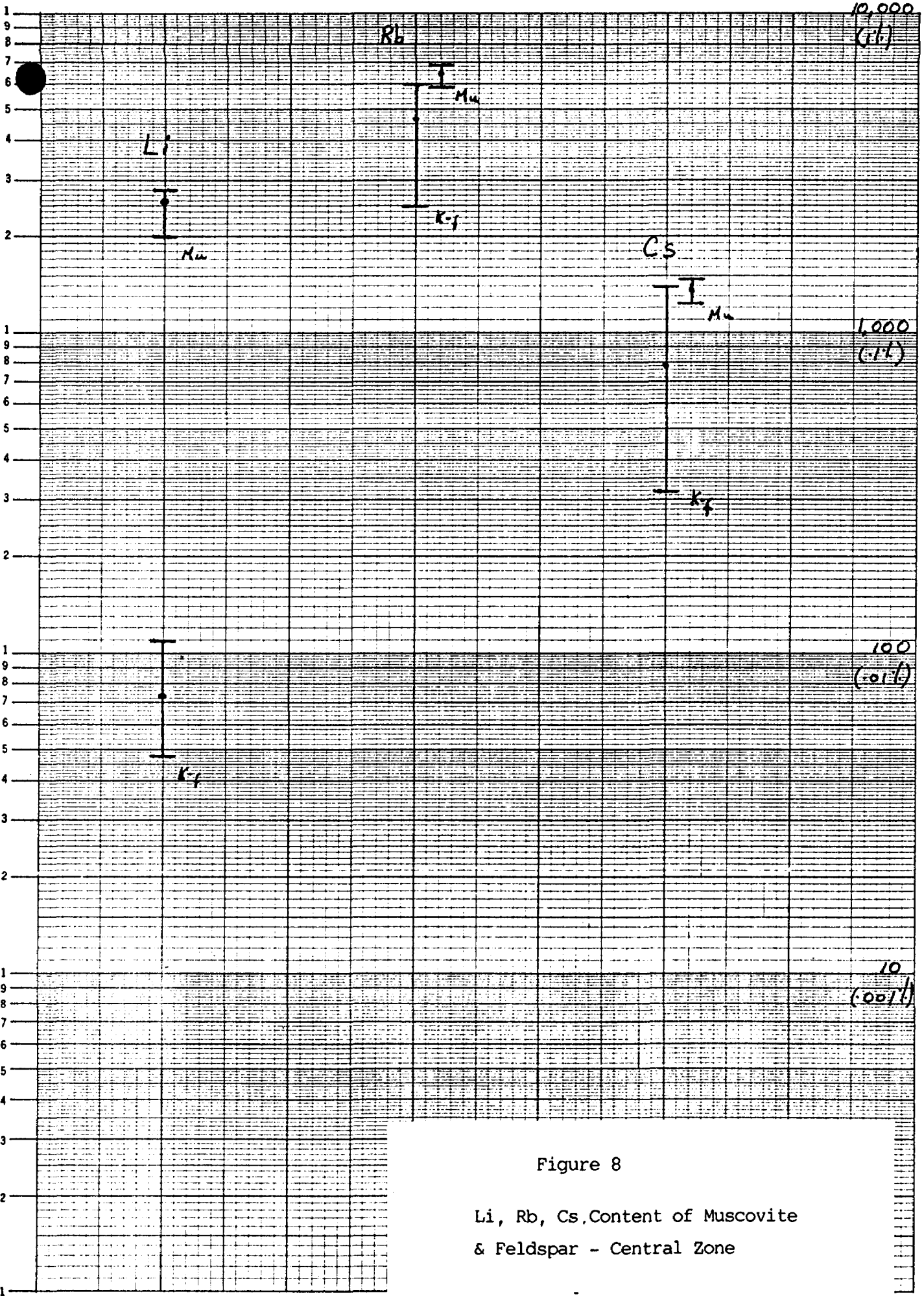


Figure 8

Li, Rb, Cs Content of Muscovite
& Feldspar - Central Zone

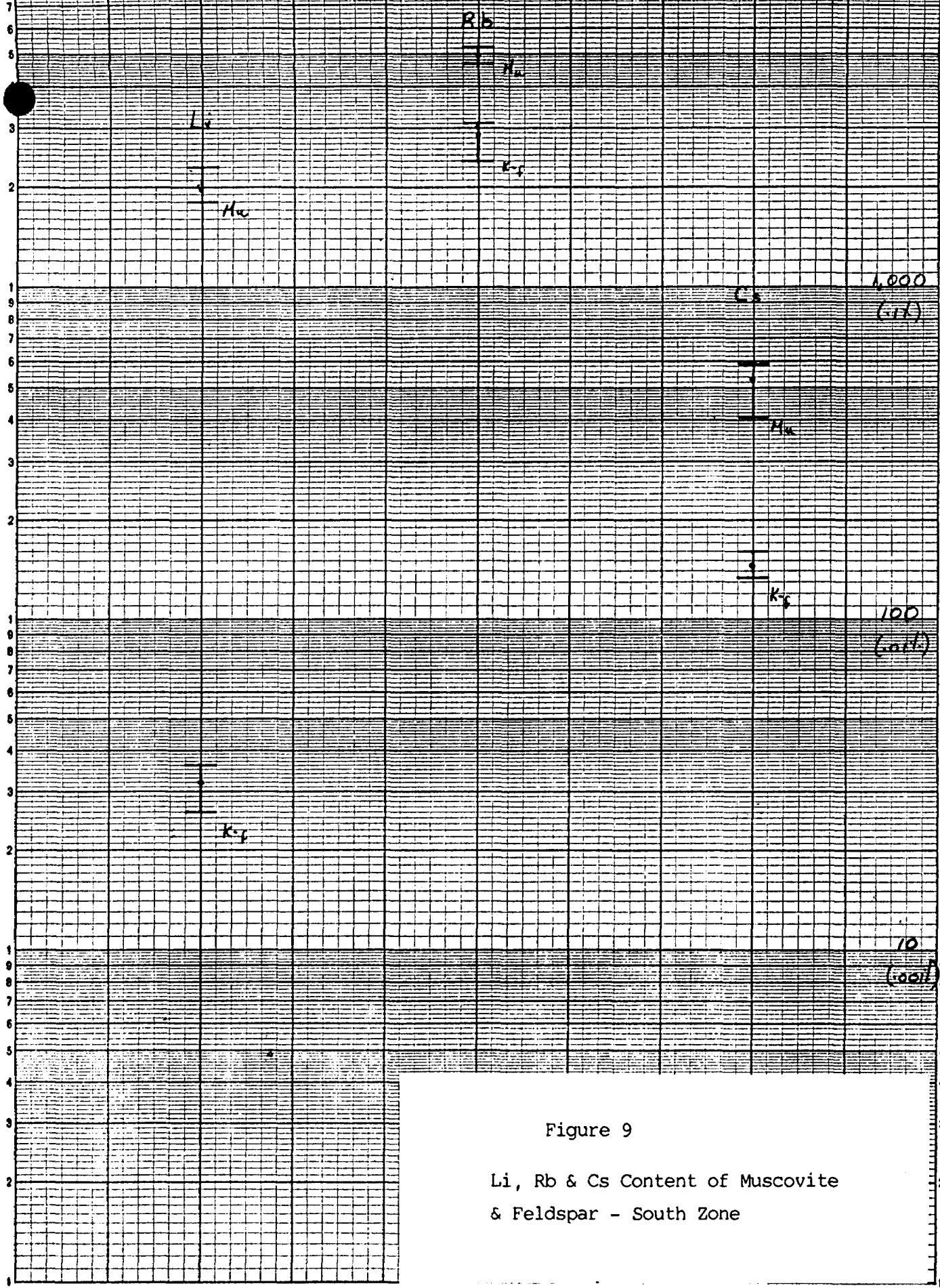


Figure 9
Li, Rb & Cs Content of Muscovite
& Feldspar - South Zone

DISCUSSION AND RECOMMENDATIONS

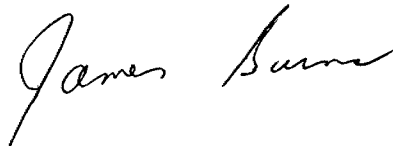
The Case Pegmatite has been shown to be a set of three individual bodies the largest of which has surface dimensions of 420m by 30m. Grab sample analytical results are interesting for both lithium and tantalum, but due to the coarse grained nature of pegmatites a totally unbiased sampling procedure is required to properly evaluate the body. Channel sampling of the outcrop would be one such method. Diamond drilling the pegmatite is another way that has the advantage of also providing some detail of the subsurface extent of the body.

Four NQ size holes, two each on two sections 100m apart, and totaling 660m are proposed. These are:

Hole No.	Coordinates	Direction	Angle	Length
C-1	350E 60N	150°	-45°	120m
C-2	325E 103N	150°	-45°	210m
C-3	263E 10N	150°	-45°	120m
C-4	239E 53N	150°	-45°	210m

				660m

Respectfully submitted



James G. Burns

REFERENCES

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- Lumbers, S.B.
1962 Geology of Steele, Bonis and Scapa Townships, District of Cochrane; Ontario Department of Mines, Report No. 8, 50p., accompanied by map 2018, scale 1:31,680.
- Scott, D.
1991 Geological "Garbage Can" Serves Tanco Well; in The Northern Miner, v.77, no.41, (Dec. 16, 1991).

APPENDIX I

Li Assays and Ta, Cs & Y Analysis

of

Pegmatite Grab Samples



Laboratoires Chemex Ltee.

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A9121654

Comments: ATTN: JAMES BURNS

CERTIFICATE

A9121654

BURNS, JAMES

Project:
P.O. #:

Samples submitted to our lab in Rouyn, PQ.
This report was printed on 27-SEP-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	15	Geochem ring to approx 150 mesh Crush and split (0-10 pounds)
294	15	

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
356	15	L1 %: HClO ₄ -HNO ₃ -HF digestion	AAS	0.01	100.0



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P.O. #:

Samples submitted to our lab in Rouyn, PQ.
This report was printed on 9-OCT-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
299	15	Sample split from other certif
289	15	X-RAY pallet prep charge
288	15	NAA encapsulation/irradiation

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
151	15	Ta ppm: Trace rock, soil	NAA	2.0	10000
158	15	Cs ppm: Trace rock, soil	NAA	0.5	10000
801	15	Y ppm	XRF	5	10000



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Page Number : 1
Total Pages : 1
Certificate Date: 09-OCT-91
Invoice No. : 19121655
P.O. Number :

CERTIFICATE OF ANALYSIS A9121655

SAMPLE	PREP CODE	Ta NAA ppm	Cs NAA ppm	Y ppm								
T-1A	299 289	172.0	106.5	58								
T-1B	299 289	120.0	250	185								
T-1C	299 289	434	102.0	85								
T-2	299 289	244	249	230								
T-3	299 289	36.0	72.0	16								
T-4A	299 289	24.0	73.5	55								
T-4B	299 289	318	225	38								
T-4C	299 289	126.0	179.5	68								
T-5	299 289	46.0	652	680								
T-6	299 289	638	264	155								
T-7	299 289	52.0	133.5	105								
T-8	299 289	174.0	364	290								
T-9	299 289	40.0	223	270								
T-10	299 289	26.0	89.5	110								
T-11	299 289	36.0	94.0	220								

Alexandra S. Lawrence

APPENDIX II

Lithium Assay of a Spodumene Crystal



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A9121657

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Project:
P.O. #:

Samples submitted to our lab in Rouyn, PQ.
This report was printed on 27-SEP-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
294	1	Crush and split (0-10 pounds)
205	1	Geochem ring to approx 150 mesh

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
356	1	Li 4: HClO4-HNO3-HF digestion	AAS	0.01	100.0



Laboratoires Chemex Ltee.

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Comments: ATTN: JAMES BURNS

Page Number : 1
Total Pages : 1
Certificate Date: 27-SEP-91
Invoice No. : 19121657
P.O. Numt :

CERTIFICATE OF ANALYSIS

A9121657

SAMPLE DESCRIPTION	PREP CODE		Li %									
A	294	205	3.55									

CERTIFICATION:

APPENDIX III

Whole Rock & Trace Element Analysis
of
Muscovite and Feldspar

Method:

i) for 'f' series

- samples were washed using a wash brush and water
- samples were placed in warm conc HNO₃ for approx. 1.5 hours
- samples were scrubbed with a glassware scrub pad
- samples were broken into small pieces using a geologic hammer
- the pure feldspar pieces were seperated, unpure pieces were broken smaller and any pure pieces were then picked out
- the pure feldspar fraction was crushed to -1/4" using a jaw crusher
- any non-feldspar fragments were removed

ii) for 'm' series

- using a sharp knife foreign mineral fragments (quartz, spodumene, and garnet(?)) were trimmed off
- the mica was split into thin sheets to remove non-mica intergrowths between mica sheets, and weathered/dirty sheets
- some samples were crushed to -1/4" and the mica was then picked out, and cleaned as above

*Sample preparation performed by Scott Harper
prior to shipment to Clonex*



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A9122742

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Project:
P.O. #:

Samples submitted to our lab in Mississauga, ON.
This report was printed on 9-OCT-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
299	10	Sample split from other certif
285	10	ICP - HF digestion charge

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
578	10	Ag ppm: 24 element, rock & core	AAS	0.5	200
573	10	Al %: 24 element, rock & core	ICP-AES	0.01	25.0
565	10	Ba ppm: 24 element, rock & core	ICP-AES	10	10000
575	10	Be ppm: 24 element, rock & core	ICP-AES	0.5	10000
561	10	Bi ppm: 24 element, rock & core	ICP-AES	2	10000
576	10	Ca %: 24 element, rock & core	ICP-AES	0.01	25.0
562	10	Cd ppm: 24 element, rock & core	ICP-AES	0.5	10000
563	10	Co ppm: 24 element, rock & core	ICP-AES	1	10000
569	10	Cr ppm: 24 element, rock & core	ICP-AES	1	10000
577	10	Cu ppm: 24 element, rock & core	ICP-AES	1	10000
566	10	Fe %: 24 element, rock & core	ICP-AES	0.01	25.0
584	10	K %: 24 element, rock & core	ICP-AES	0.01	20.0
570	10	Mg %: 24 element, rock & core	ICP-AES	0.01	20.0
568	10	Mn ppm: 24 element, rock & core	ICP-AES	5	10000
554	10	Mo ppm: 24 element, rock & core	ICP-AES	1	10000
583	10	Na %: 24 element, rock & core	ICP-AES	0.01	5.00
564	10	Ni ppm: 24 element, rock & core	ICP-AES	1	10000
559	10	P ppm: 24 element, rock & core	ICP-AES	10	10000
560	10	Pb ppm: 24 element, rock & core	AAS	2	10000
582	10	Sr ppm: 24 element, rock & core	ICP-AES	1	10000
579	10	Ti %: 24 element, rock & core	ICP-AES	0.01	10.00
572	10	V ppm: 24 element, rock & core	ICP-AES	1	10000
556	10	W ppm: 24 element, rock & core	ICP-AES	10	10000
558	10	Zn ppm: 24 element, rock & core	ICP-AES	2	10000



Chemex Labs Ltd.

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P.O. Number :

CERTIFICATE OF ANALYSIS A9122742

SAMPLE	PREP CODE	Ag ppm AAS	Al % (ICP)	Ba ppm (ICP)	Be ppm (ICP)	Bi ppm (ICP)	Ca % (ICP)	Cd ppm (ICP)	Co ppm (ICP)	Cr ppm (ICP)	Cu ppm (ICP)	Fe % (ICP)	K % (ICP)	Mg % (ICP)	Mn ppm (ICP)
T-01 "F"	299 285	< 0.2	9.40	1000	2.5	< 2	0.02	< 0.5	2	39	2	0.08	9.51	0.01	15
T-03 "F"	299 285	< 0.2	9.48	610	3.0	< 2	0.01	< 0.5	1	43	4	0.07	9.55	< 0.01	10
T-04 "F"	299 285	< 0.2	9.68	40	2.0	< 2	< 0.01	< 0.5	< 1	31	2	0.03	9.76	< 0.01	20
T-05 "F"	299 285	< 0.2	9.52	60	2.0	< 2	< 0.01	< 0.5	< 1	44	3	0.04	9.81	< 0.01	20
T-06 "F"	299 285	< 0.2	9.35	790	7.0	< 2	0.22	< 0.5	< 1	43	< 1	0.05	3.98	< 0.01	35
T-07 "F"	299 285	< 0.2	9.42	650	2.5	< 2	< 0.01	< 0.5	< 1	32	< 1	0.04	10.05	< 0.01	20
T-08 "F"	299 285	< 0.2	10.50	< 10	9.5	< 2	0.36	< 0.5	< 1	33	< 1	0.05	0.21	< 0.01	1070
T-09 "F"	299 285	< 0.2	9.42	460	3.0	< 2	< 0.01	< 0.5	< 1	42	< 1	0.05	9.54	< 0.01	25
T-10 "F"	299 285	< 0.2	8.49	1460	2.5	< 2	< 0.01	< 0.5	< 1	42	< 1	0.03	8.76	< 0.01	10
T-11 "F"	299 285	< 0.2	9.22	2820	6.0	< 2	< 0.01	< 0.5	< 1	49	< 1	0.05	9.34	< 0.01	15
NZ Av.													210		
CZ Av.													974		
SZ Av.													921		

CERTIFICATION: *B. Coughlin*



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: BURNS, JAMES

190 GRAYE CRESCENT
TIMMINS, ON
P4N 8K8

Project :
Comments:

Page Number : 1-B
Total Pages : 1
Certificate Date: 09-OCT-91
Invoice No. : 19122742
P.O. Number :

CERTIFICATE OF ANALYSIS

A9122742

SAMPLE	PREP CODE		Mo ppm (ICP)	Na % (ICP)	Ni ppm (ICP)	P ppm (ICP)	Pb ppm AAS	Sr ppm (ICP)	Ti % (ICP)	V ppm (ICP)	W ppm (ICP)	Zn ppm (ICP)				
T-01 "F"	299	285	< 1	1.30	1	60	36	326	< 0.01	< 1	< 10	< 2				
T-03 "F"	299	285	2	1.31	1	60	38	270	< 0.01	< 1	< 10	< 2				
T-04 "F"	299	285	1	1.37	1	90	36	144	< 0.01	< 1	< 10	< 2				
T-05 "F"	299	285	1	1.25	2	50	40	170	< 0.01	< 1	< 10	< 2				
T-06 "F"	299	285	< 1	5.12	1	10	20	108	< 0.01	< 1	< 10	< 2				
T-07 "F"	299	285	< 1	1.21	< 1	< 10	40	333	< 0.01	< 1	< 10	< 2				
T-08 "F"	299	285	< 1	7.79	< 1	< 10	16	49	< 0.01	< 1	< 10	< 2				
T-09 "F"	299	285	1	1.50	< 1	60	36	226	< 0.01	< 1	< 10	< 2				
T-10 "F"	299	285	1	1.29	< 1	< 10	30	379	< 0.01	< 1	< 10	< 2				
T-11 "F"	299	285	2	1.36	< 1	< 10	36	610	< 0.01	< 1	< 10	2				
NZ				645												
CZ				129												
SZ				138												

CERTIFICATION: *B. Coughlin*



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: BURNS, JAMES

190 GRAYE CRESCENT
TIMMINS, ON
P4N 8K8

A9122741

Comments:

CERTIFICATE

A9122741

BURNS, JAMES

Project:
P.O.#:

Samples submitted to our lab in Mississauga, ON.
This report was printed on 30-OCT-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	20	Geochem ring to approx 150 mesh
294	20	Crush and split (0-10 pounds)
232	20	PERCHLORIC-NITRIC-HYDROFLUORIC D
288	20	NAA encapsulation/irradiation

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
27	20	Li ppm: HClO4-HNO3-HF digestion	AAS	1	1000
30	20	Rb ppm: HClO4-HNO3-HF digestion	AAS	1	10000
151	20	Ta ppm: Trace rock, soil	NAA	2.0	10000
158	20	Cs ppm: Trace rock, soil	NAA	0.5	10000



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: BURNS, JAMES

190 GRAYE CRESCENT
TIMMINS, ON
P4N 8K8

Project :
Comments:

Page Number : 1
Total Pages : 1
Certificate Date: 30-OCT-91
Invoice No. : 19122741
P.O. Number :

CERTIFICATE OF ANALYSIS

A9122741

SAMPLE	PREP CODE	Li ppm	Rb ppm	Ta NAA ppm	Cs NAA ppm						
T-01 "F"	205 294	74	3400	< 2.0	323						
T-03 "F"	205 294	48	4000	< 2.0	469						
T-04 "F"	205 294	66	6000	< 2.0	1320						
T-05 "F"	205 294	110	5500	4.0	1400						
T-06 "F"	205 294	36	2500	8.0	405						
T-07 "F"	205 294	66	4100	< 2.0	424						
T-08 "F"	205 294	12	57	< 2.0	6.0						
T-09 "F"	205 294	36	3000	< 2.0	160.0						
T-10 "F"	205 294	33	3100	< 2.0	140.5						
T-11 "F"	205 294	26	2400	< 2.0	137.0						
T-01 "M"	205 294	2700	6500	126.0	1225						
T-03 "M"	205 294	2700	6500	138.0	1440						
T-04 "M"	205 294	2700	5900	134.0	1460						
T-05 "M"	205 294	2000	6900	332	1385						
T-06 "M"	205 294	1700	5400	330	819						
T-07 "M"	205 294	2800	6900	130.0	1395						
T-08 "M"	205 294	2800	6800	544	491						
T-09 "M"	205 294	1800	4700	152.0	559						
T-10 "M"	205 294	1800	5100	128.0	594						
T-11 "M"	205 294	2300	4900	62.0	405						

CERTIFICATION:

Hart Bickler

APPENDIX IV

Whole Rock and Trace Element Analysis
of
Granite and Metasediment Grab Samples



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: BURNS, JAMES

190 GRAYE CRESCENT
TIMMINS, ON
P4N 8K8

A9121656

Comments: ATTN: JAMES BURNS

CERTIFICATE

A9121656

BURNS, JAMES

Project:
P.O.#:

Samples submitted to our lab in Rouyn, PQ.
This report was printed on 24-SEP-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	9	Geochem ring to approx 150 mesh
294	9	Crush and split (0-10 pounds)
200	9	Whole rock fusion

* NOTE 1:

Code 1000 is used for repeat gold analyses
It shows typical sample variability due to
coarse gold effects. Each value is
correct for its particular subsample.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
594	9	Al2O3 %: Whole rock	ICP-AES	0.01	99.99
542	9	BaO %: Whole rock	ICP-AES	0.01	99.99
588	9	CaO %: Whole rock	ICP-AES	0.01	99.99
586	9	Fe2O3 (total) %: Whole rock	ICP-AES	0.01	99.99
821	9	K2O %: Whole rock	ICP-AES	0.01	99.99
593	9	MgO %: Whole rock	ICP-AES	0.01	99.99
596	9	MnO %: Whole rock	ICP-AES	0.01	99.99
599	9	Na2O %: Whole rock	ICP-AES	0.01	99.99
597	9	P2O5 %: Whole rock	ICP-AES	0.01	99.99
592	9	SiO2 %: Whole rock	ICP-AES	0.01	99.99
595	9	TiO2 %: Whole rock	ICP-AES	0.01	99.99
475	9	L.O.I. %: Loss on ignition	FURNACE	0.01	99.99
540	9	Total %	CALCULATION	0.01	105.00
894	9	Cr ppm		50	N/A
973	9	Nb ppm	ICP	5	10000
1067	9	Rb ppm		50	N/A
898	9	Sr ppm		50	N/A
974	9	Y ppm	ICP	5	10000
978	9	Zr ppm	ICP	5	10000



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberloa Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: BURNS, JAMES

190 GRAYE CRESCENT
TIMMINS, ON
P4N 8K6

Project :
Comments: ATTN: JAMES BURNS

Page Number : 1
Total Pages : 1
Certificate Date: 24-SEP-91
Invoice No. : 19121656
P.O. Number :

CERTIFICATE OF ANALYSIS A9121656

SAMPLE DESCRIPTION	PREP CODE		Al2O3	BaO	CaO	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI	TOTAL	Cr	Nb	Rb	Sr	Y	Zr
			%	%	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm
2	205	294	16.00	0.16	1.46	2.42	2.06	0.61	0.02	5.42	0.11	70.81	0.21	1.05	100.35	22	9	189	820	24	142
3	205	294	17.28	0.16	3.03	2.41	1.78	0.67	0.02	5.90	0.15	68.04	0.27	0.69	100.40	14	7	76	1160	10	165
4	205	294	17.29	0.11	2.84	2.21	2.00	0.64	0.01	5.97	0.16	67.54	0.26	0.79	99.82	7	50	50	963	5	153
7	205	294	15.48	0.25	1.61	1.40	3.94	0.19	0.01	4.47	0.09	74.06	0.07	0.58	102.15	13	6	121	506	14	59
8	205	294	17.73	0.09	2.04	1.49	1.52	0.37	0.02	6.58	0.10	70.03	0.15	0.77	100.90	10	7	114	879	14	141
9	205	294	18.04	0.09	2.85	1.40	1.42	0.24	0.01	6.83	0.11	70.04	0.17	0.79	102.00	5	7	30	1055	< 5	167
10	205	294	17.99	0.09	2.71	1.25	1.37	0.25	0.01	6.92	0.09	70.04	0.13	0.45	101.30	< 5	6	28	1015	< 5	150
14	205	294	17.30	0.10	2.35	1.15	2.02	0.21	0.01	6.30	0.07	70.30	0.11	0.10	100.00	5	6	51	816	< 5	125
16	205	294	17.09	0.09	2.44	1.18	1.83	0.25	0.01	6.05	0.09	70.14	0.12	0.08	99.37	< 5	8	81	868	9	132

Samples of
Granite

CERTIFICATION:



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
 212 Brooksbank Ave., North Vancouver
 British Columbia, Canada V7J 2C1
 PHONE: 604-064-0221

To: BURNS, JAMES
 100 GRAYE CRESCENT
 TIMMINS, ON
 P4N 8K6

Project:
 Comments: ATTN: JAMES BURNS

Page Number 1
 Total Pages 1
 Certificate Date 27-DEC-91
 Invoice No. I-9126096
 P.O. Number NONE
 Account :

CERTIFICATE OF ANALYSIS	A9126096
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SAMPLE DESCRIPTION	PREP CODE	Li ppm	Be ppm						
2	214 232	240	3.7						
3	214 232	260	2.2						
4	214 232	390	1.4						
7	214 232	174	2.3						
8	214 232	132	1.5						
9	214 232	38	1.1						
10	214 232	28	1.2						
14	214 232	68	1.2						
16	214 232	300	1.4						

CERTIFICATION: _____

12/30/91 7:16AM CHEMEX LABS VAX-FAX

PAGE 02



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: BURNS, JAMES

190 GRAYE CRESCENT
TIMMINS, ON
P4N 8K8

A9121658

Comments: ATTN: JAMES BURNS

CERTIFICATE

A9121658

BURNS, JAMES

Project:
P.O. #:

Samples submitted to our lab in Rouyn, PQ.
This report was printed on 9-OCT-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
294	7	Crush and split (0-10 pounds)
205	7	Geochem ring to approx 150 mesh
232	7	PERCHLORIC-NITRIC-HYDROFLUORIC D
288	7	NAA encapsulation/irradiation
289	7	X-RAY pellet prep charge

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
34	7	Be ppm: HClO4-HNO3-HF digestion	AAS	0.1	1000
40	7	B ppm	NAA	5	10000
158	7	Cs ppm: Trace rock, soil	NAA	0.5	10000
21	7	F ppm: Carbonate-nitrate fusion	SPECIFIC ION	20	10000
151	7	Ta ppm: Trace rock, soil	NAA	2.0	10000
30	7	Rb ppm: HClO4-HNO3-HF digestion	AAS	1	10000
801	7	Y ppm	XRF	5	10000



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
5175 Timberlea Blvd., Mississauga,
Ontario, Canada L4W 2S3
PHONE: 416-624-2806

To: BURNS, JAMES

190 GRAYE CRESCENT
TIMMINS, ON
P4N 8K8

Page Number : 1
Total Pages : 1
Certificate Date: 09-OCT-91
Invoice No. : 19121658
P.O. Number :

Project :
Comments: ATTN: JAMES BURNS

CERTIFICATE OF ANALYSIS

A9121658

SAMPLE	PREP CODE		Be ppm	B ppm	Cs NAA ppm	F ppm	Ta NAA ppm	Rb ppm	Y ppm			
1	294	205	1.1	< 5	14.5	300	< 2.0	114	20			
5	294	205	1.2	40	9.5	620	< 2.0	88	18			
6	294	205	0.5	35	8.5	460	< 2.0	114	24			
11	294	205	2.0	5	37.5	850	< 2.0	118	20			
12	294	205	0.6	45	6.0	400	< 2.0	82	18			
13	294	205	1.1	5	10.0	420	< 2.0	38	16			
15	294	205	0.7	25	2.5	390	< 2.0	88	20			

Samples of
Metasediments

Adriana Alexandra
CERTIFICATION



Report of Work Conducted After Recording Claim

Mining Act

Transaction Number

DOCUMENT No.

9280-00001

Information will be used for correspondence. Questions about
Development and Mines, Fourth Floor, 159 Cedar Street,

Personal information
this collection shows
Sudbury, Ontario,



32E04SW0003 2.14451 STEELE

900

Instructions:

- filing assessment work or consult the Mining Recorder.
- A separate copy of this form must be completed for each Work Group.
- Technical reports and maps must accompany this form in duplicate.
- A sketch, showing the claims the work is assigned to, must accompany this form.

Recorded Holder(s) <i>James Burns</i>	Client No. <i>113 825</i>
Address <i>190 Graye Cr, Timmins, Ont P4N 8K6</i>	Telephone No. <i>705-268-4660</i>
Mining Division <i>Larder Lake</i>	Township/Area <i>Steele</i>
M or G Plan No. <i>M-593</i>	
Dates Work Performed From: <i>Aug 28/91</i> <i>Sept 17/91</i> <i>Dec 16/91</i> <i>Dec 30/91</i>	To: <i>Sept 9/91</i> <i>Dec 21/91</i>

Work Performed (Check One Work Group Only)

Work Group	Type
<input checked="" type="checkbox"/> Geological Survey	<i>Geological (plus assays), geo physical</i>
<input type="checkbox"/> Planning	
<input type="checkbox"/> Reclamation	
<input type="checkbox"/> Controlled Work	
<input type="checkbox"/> Assays	
<input type="checkbox"/> Assignment from Reserve	

RECEIVED

JAN 30 1992

MINING LANDS BRANCH

Total Assessment Work Claimed on the Attached Statement of Costs \$ *4242-*

Note: The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)

Name	Address
<i>James Burns (Author)</i>	<i>as above</i>
<i>Anne Marie Kearney</i>	<i>as above</i>

(attach file if necessary)

Certification of Beneficial Interest * See Note No. 1 on reverse side

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date <i>Jan 7/92</i>	Recorded Holder or Agent (Signature) <i>James Burns</i>
--	-------------------------	--

Certification of Work Report

I certify that I have a personal knowledge of the facts set forth in this Work report, having performed the work or witnessed same during and/or after its completion and annexed report is true.		
Name and Address of Person Certifying <i>James Burns 190 Graye Cr Timmins Ont P4N 8K6</i>		
Telephone <i>705 68-4660</i>	Date <i>Jan 7/92</i>	Certified By (Signature) <i>James Burns</i>

For Office Use Only

Total Value Cr. Recorded 4242-	Date Recorded <i>Jan. 7/92</i>	Mining Recorder <i>[Signature]</i>	Received Stamp MINING DIVISION <i>7 PM 8 04</i>
	Deemed Approval Date <i>April 6/92</i>	Date Approved	
	Date Notice for Amendments Sent		

NOTE: G.A.S. 1-4-92

Statement of Costs for Assessment Credit

État des coûts aux fins du crédit d'évaluation

Mining Act/Loi sur les mines

Transaction No./N° de transaction

DOCUMENT No.

W 9280-0000

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Minings Lands, Ministry of Northern Development and Mines, 4th Floor, 159 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7264.

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la Loi sur les mines et serviront à tenir à jour un registre des concessions minières. Adresser toute question sur la collecte de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cedar, 4^e étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7264.

1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'oeuvre	800	
	Field Supervision Supervision sur le terrain	1100	1900
Contractor's and Consultant Fees Droits de l'entrepreneur et de l'expert-conseil	Type Assays	1912	
	Sample Prep	113	2025
Supplies Used Fournitures utilisées	Type		
Equipment Rental Location matériel	Type		
Total Direct Costs Total des coûts directs		3925	

2. Indirect Costs/Coûts indirects

** Note: When claiming Rehabilitation work Indirect costs are not allowable as assessment work. Pour le remboursement des travaux de réhabilitation, les coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type Imilage	97	
	gas	24	
	shipping	33	
	communications	27	181
Food and Lodging Nourriture et hébergement	Food & Field supplies		136
Mobilization and Demobilization Mobilisation et démoblisation			
Sub Total of Indirect Costs Total partiel des coûts indirects			317
Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excédant pas 20 % des coûts directs)			317
Total Value of Assessment Credit (Total of Direct and Allowable indirect costs)		Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles)	4242

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment work all or part of the assessment work submitted.

Note: Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

RECEIVED

Filing Discounts

- Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.
- Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit	Total Assessment Claimed
	× 0.50 =

Remises pour dépôt

- Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.
- Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation	Evaluation totale demandée
	× 0,50 =

Certification Verifying Statement of Costs

I hereby certify that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

that as Recorded holder I am authorized (Recorded Holder, Agent, Position in Company)

to make this certification

Attestation de l'état des coûts

J'atteste par la présente : que les montants indiqués sont le plus exact possible et que ces dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terrains indiqués dans la formule de rapport de travail ci-joint.

Et qu'à titre de _____ je suis autorisé (titulaire enregistré, représentant, poste occupé dans la compagnie)

à faire cette attestation.

Signature: James Burns Date: Jan 7/92



Ontario

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Geoscience Approvals Section
Mining Lands Branch
159 Cedar Street, 4th Floor
P3E 6A5
Sudbury, Ontario
P3E 6A5

Toll Free: 1-800-465-3880
Telephone: (705) 670-7264
Fax: (705) 670-7262

Our File: 2.14451
Your File: W9280-00001

Mining Recorder
Ministry of Northern Development
and Mines
4 Government Road East
Kirkland Lake, Ontario
P2N 1A2

March 3, 1992

Dear Sir:

**SUBJECT: APPROVAL OF ASSESSMENT WORK SUBMITTED ON MINING CLAIMS
L 1158639 ET AL STEELE TOWNSHIP.**

The assessment work credits for the Geological survey, section 12, Geophysical survey, section 14, and Assays section 17 Mining Act Regulations, submitted on the above work report have been approved as of March 3, 1992.

Please indicate this approval on your records.

Yours sincerely,

Ron C. Gashinski
Senior Manager, Mining Lands Branch
Mines and Minerals Division

TAA/jl
Enclosures:

cc: Assessment Files Office
Toronto, Ontario

Resident Geologist
Kirkland Lake, Ontario

STEELE

DISTRICT OF
COCHRANE

LARDER LAKE
MINING DIVISION

SCALE 1-INCH = 40 CHAINS

LEGEND

- PATENTED LAND (P)
- CROWN LAND SALE (CS)
- LEASES (L)
- LOCATED LAND (Loc)
- LICENSE OF OCCUPATION (LO)
- MINING RIGHTS ONLY (M.R.O.)
- SURFACE RIGHTS ONLY (S.R.O.)
- ROADS
- TRAILS
- HIGHWAY & ROUTE N°
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES
- CANCELLED (C)

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

The subdivision of this township into lots and concessions was annulled Oct 9, 1962.

Areas withdrawn from staking under Section 43 of the Mining Act, R.S.O. 1970.

Order No.	File	Date	Disposition

Pending disposition under the Public Lands Act.

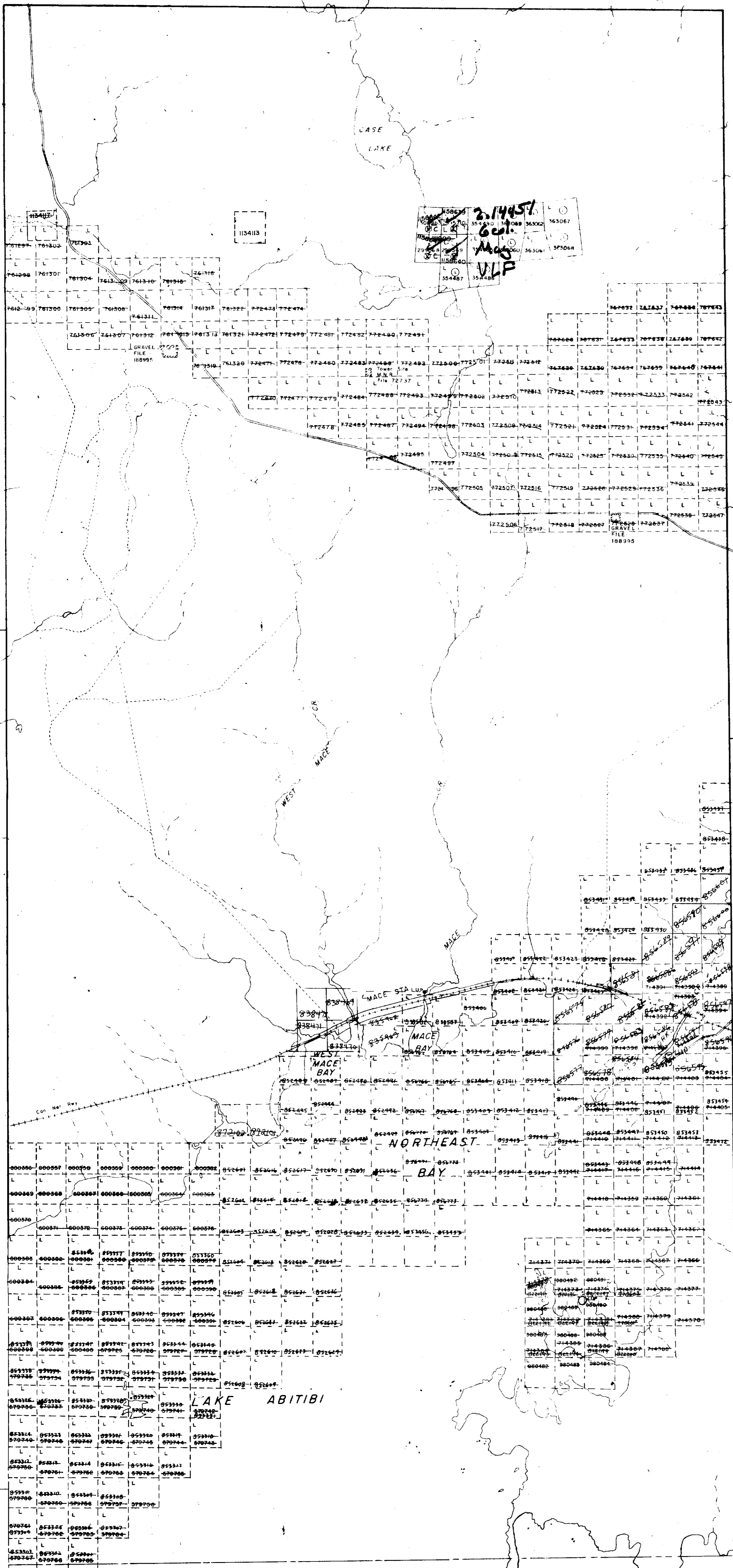
THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

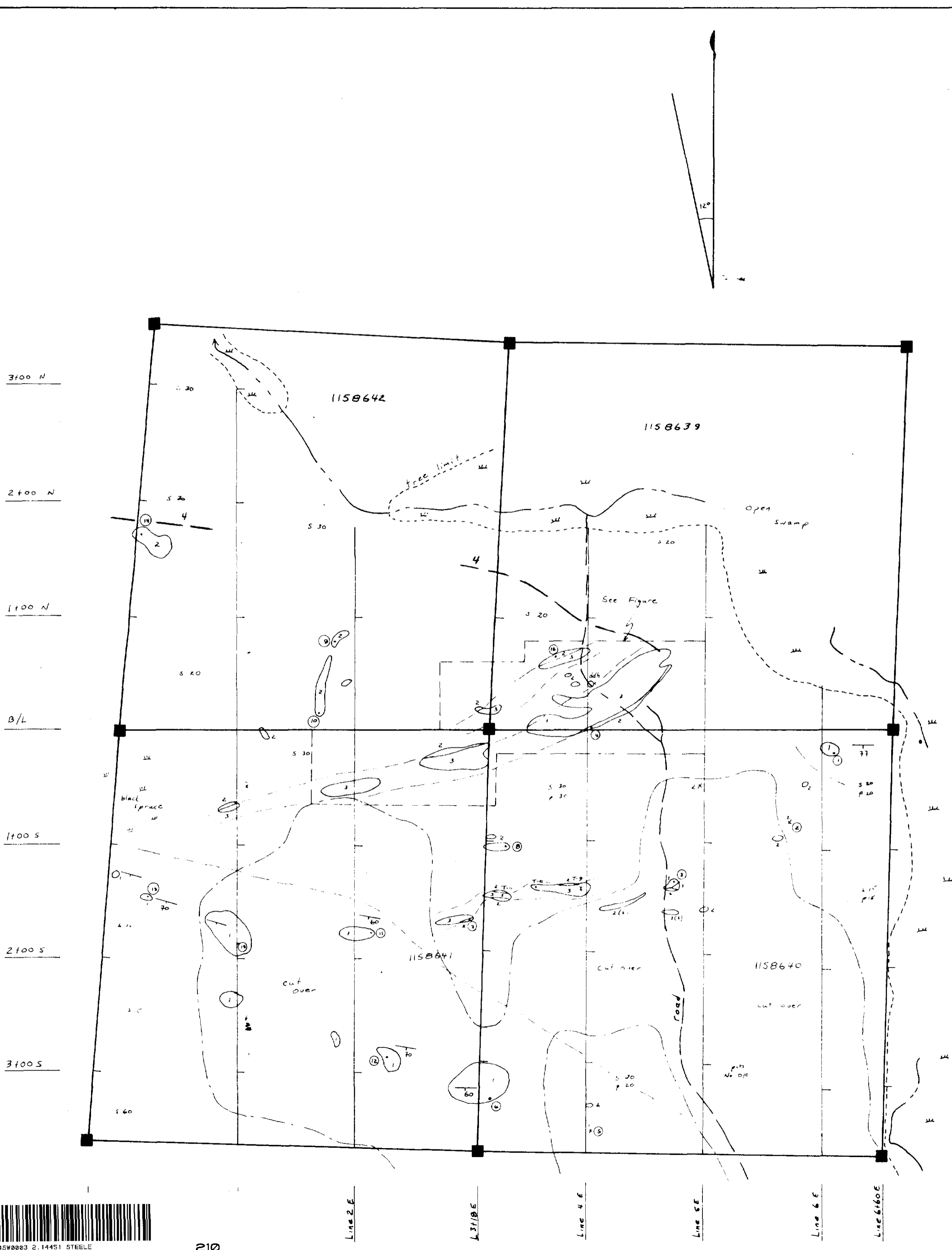
PLINY TWP. M.570

PURVIS TWP. M.572

SCAPA TWP. M.585

BONIS TWP. M.421





LEGEND

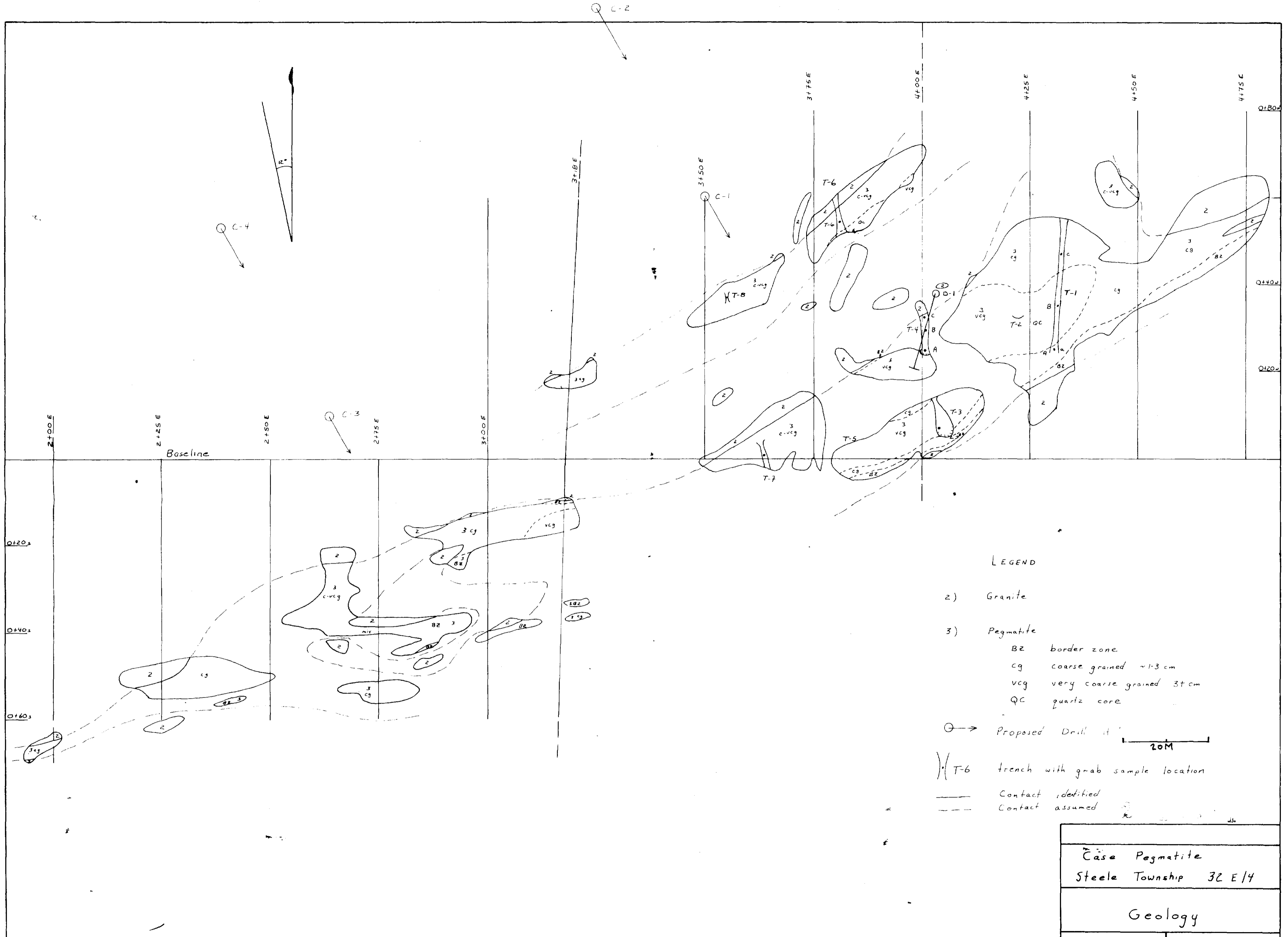
- 4) Mafic Dyke : inferred from magnetics
- 3) Pegmatite
- 2) Granite
- 1) Metasediments

- T₃₂ bedding
- T-t trench
- ③ location of sample for trace element and/or whole rock analysis
- S₂₀ } Tree species with max average size (cm)
- P₃₀ }
- Contact Defined
- - - Contact Mapped

100M

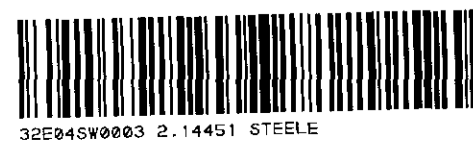
Case Pegmatite Steele Township 32 E/4	
Geology	
1:2500	J.G.B.
Sept 16/91	Figure 2

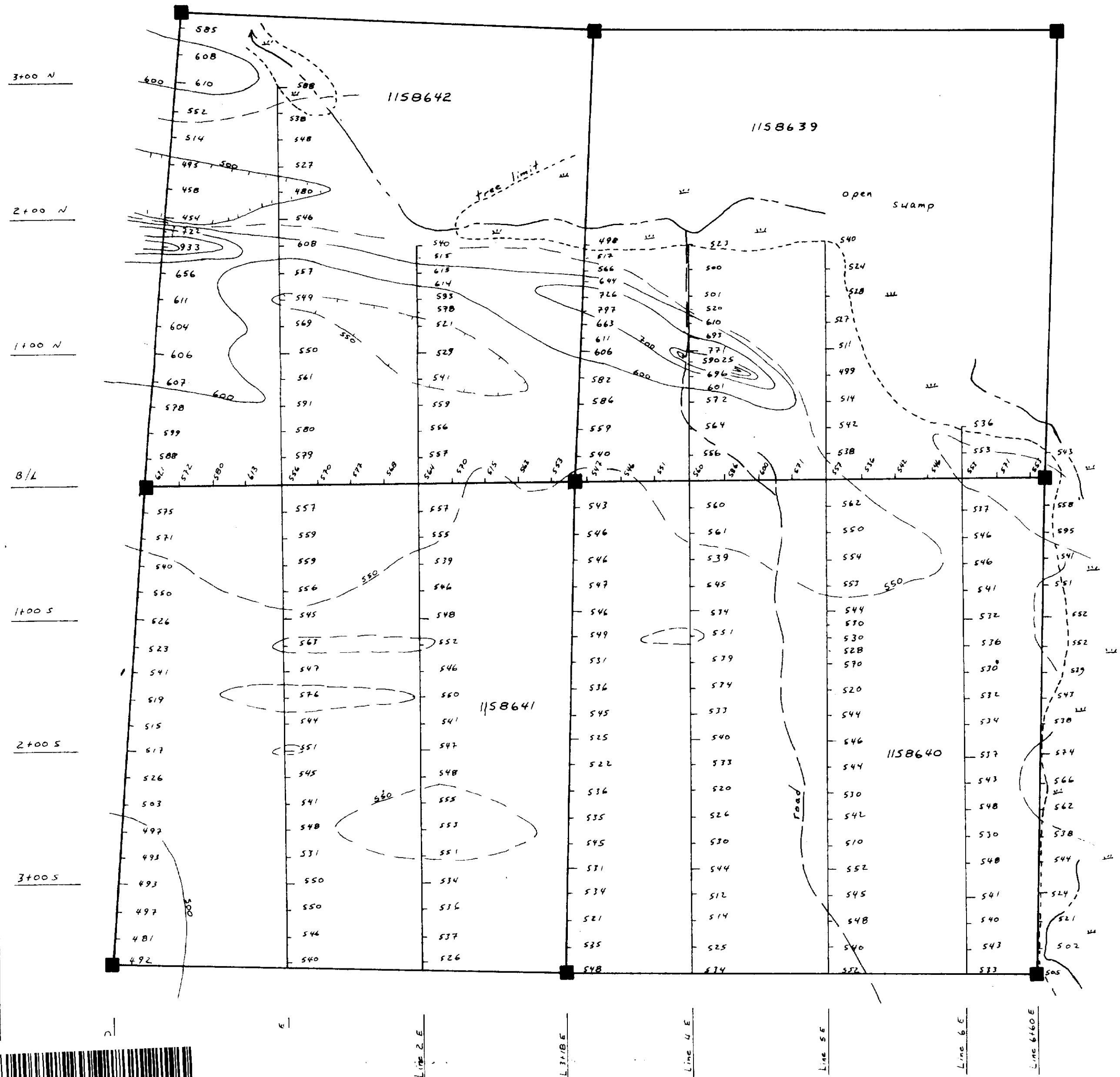
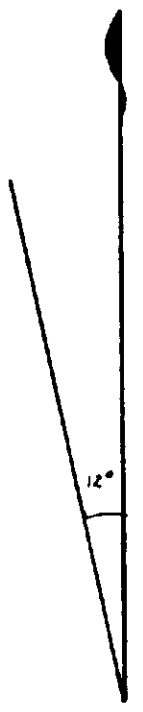




- LEGEND
- 2) Granite
 - 3) Pegmatite
 - BZ border zone
 - cg coarse grained ~1-3 cm
 - vcg very coarse grained 3+ cm
 - qc quartz core
 - ⊙ → Proposed Drill Holes
 - ⌋ T-6 trench with grab sample location
 - Contact identified
 - - - Contact assumed

Case Pegmatite	
Steele Township 32 E/4	
Geology	
1:500	J.G.B.
Sept. 16/91	Figure 3





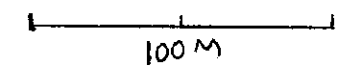
LEGEND

■ — Claim Post + claim line

— 100 NT contours

- - - 50 NT contours

For 3 digit posted readings
add 58,000



2. 1 4451

Case Pegmatite
Steele Township 32 E/4

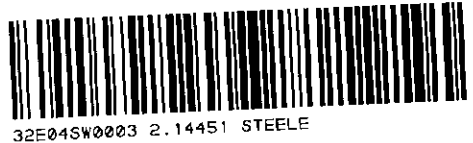
Magnetic Survey

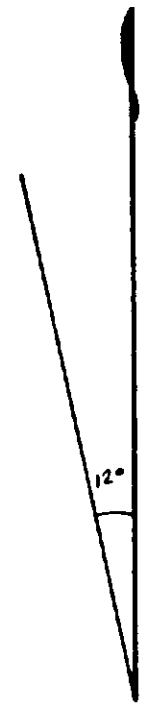
1:2500

J.G.B.

Sept. 16/91

Figure 4





3100 N

2100 N

1100 N

B/L

1100 S

2100 S

3100 S

1158642

1158639

open swamp

1158641

1158640

Line 2 E

Line 3 E

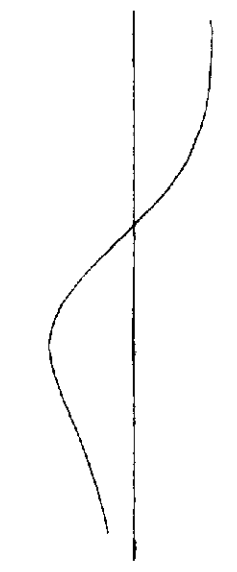
Line 4 E

Line 5 E

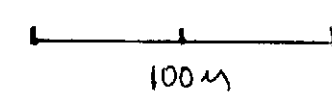
Line 6 E

Line 60 E

LEGEND



10 N
10 S
Facing North



2. 14451

Case Pegmatite
Steele Township 32 E/4

VLF-em Survey

1:2500

J.G.B.

Sept. 16/91

Figure 5



32E045W0003 2.14451 STEELE