



41182NE0004 2.12336 COSBY

010

REPORT ON A GEOLOGICAL SURVEY
OF THE COSBY TOWNSHIP PROPERTY,
DISTRICT OF SUDBURY,
ONTARIO.

FOR:

NORGRANITE COMPANY LTD.

Suite 201, 69 Cedar Street
Sudbury, Ontario, P3E 1A7

RECEIVED

APR 10 1989

Prepared by:

MINING LANDS SECTION

R.M. Junnila
G.J. Hinse Geological
Services Ltd.
Suite 201, 69 Cedar Street
Sudbury, Ontario
P3E 1A7

NTS 41-I/1&2

April 7, 1989



41102NE0004 2.12336 COSBY

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Map (in back pocket)

| | |
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| Map 1. Geological map of the Cosby Township property showing outcrops, grid lines, and claim numbers. | |
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SUMMARY

In the summer and fall of 1988, Norgranite Company Ltd. performed a geological survey on a grid covering 60 claims in Cosby Township, District of Sudbury (NTS 41-I/1&2). The purpose of the survey was to identify potential sites for building stone quarries. The survey is part of an ongoing exploration program to be continued in the spring and summer of 1989.

The property is located 10 km northwest of Noelville, Ontario, which is approximately 60 km southeast of Sudbury, Ontario. Access is gained from Sudbury via highways 69, 64, and 535. Gravel roads lead from Noelville to the property.

The property lies within the Grenville Structural Province and is underlain by the Cosby Batholith which is a felsic anorthosite-suite intrusive complex of Middle to Late Proterozoic age. The batholith intrudes metasedimentary gneisses of the Middle Proterozoic Central Gneiss Belt. Late Proterozoic tectonism deformed the batholith into an antiformal structure and regional high rank metamorphism of similar age converted the rocks into gneisses.

The Cosby Batholith displays zoning with massive, foliated, and gneissic monzonitic rocks in the interior, whereas the border zone of the batholith is gneissic and highly deformed quartz syenite and quartz monzonite.

The rocks on the property consist of massive monzonite with relict igneous flow banding. Uniformly layered to complexly deformed gneisses are also present. Zones of porphyritic monzonite locally grade into augen gneiss. Several groups of joint orientations exist in the rocks on the property. Joint spacing is typically less than one metre but areas with greater spacing have also been delineated.

Geological mapping and sampling have identified four areas which show good quarrying potential. They consist of massive to gneissic, coarse-grained monzonite having joint spacing of 1-3 m which will allow for the extraction of large quarry blocks. The consistently good colour, texture, and grain-size of the rocks in the four areas meet the essential criteria for a marketable dimensional stone. Further evaluation and testing of the rocks in all four areas is recommended.

Samples from one of the areas (Lac Clair outcrop) were tested and shown to exceed the minimum physical requirements for dimensional stone specified by the ASTM. As this multicoloured stone has high market potential, test quarrying at this outcrop is recommended.

CERTIFICATE: PROJECT SUPERVISOR

Re: Report on a geological survey of the Cosby Township property for Norgranite Company Ltd.

I, G.J. Hinse, do hereby certify that:

I am a resident at 9 Gloucester Ct., Sudbury, Ontario, P3E 5M2.

I am a qualified geologist, having received my training at Laval University.

I am a registered Professional Engineer of the Province of Ontario, a member of the Canadian Society for Professional Engineers, the Québec Prospector's Association, the Canadian Institute of Mining and Metallurgy, and the Prospectors and Developers Association.

I am the principal and only shareholder of G.J. Hinse Geological Services Ltd., holder of Certificate of Authorization No. 0094003.

I have been continuously engaged in mining exploration, development, and production since 1954 and have been a consulting geologist since 1978. My career in the Canadian mining industry has included positions as mine project manager, mine planning engineer, chief geologist, resident geologist, and regional geologist.

I have supervised all work done by Norgranite Company Ltd. on the Cosby Township property. I have visited the property.

Sudbury, Ontario
April 7, 1989


G.J. Hinse P.Eng.

CERTIFICATE: AUTHOR

Re: Report on a geological survey of the Cosby Township property for
Norg granite Company Ltd.

I, R.M. Junnila, do hereby certify that:

I am a resident at 803-2200 Regent St. S., Sudbury, Ontario, P3E 5S2.

I received the M.Sc. degree in Geology from the University of Western Ontario,
London, Ontario in 1986.

From 1986 to 1988 I was employed as a geologist by the Precambrian Geology
Section, Ontario Geological Survey, Ministry of Northern Development and
Mines, Toronto, Ontario.

The preparation of this report and the survey described herein were supervised
by G.J. Hinse. This report is based on a review of all available data. I have
performed mapping on the property.

Sudbury, Ontario
April 7, 1989


R.M. Junnila M.Sc.

REPORT ON A GEOLOGICAL SURVEY
OF THE COSBY TOWNSHIP PROPERTY,
DISTRICT OF SUDBURY, ONTARIO.

INTRODUCTION

This report discusses the results of a geological survey carried out on a grid covering 60 contiguous, unpatented mining claims in Cosby Township, District of Sudbury (NTS 41-1/1&2). The claims are recorded in the name of 749494 Ontario Limited, the predecessor of Norgranite Company Ltd. (See Appendix A for claim list). The survey has identified four sites which show good potential as building stone quarries.

LOCATION AND ACCESS

The Cosby Township property is located 10 km northwest of Noelville, Ontario, which is approximately 60 km southeast of Sudbury, Ontario (Figure 1). The property is situated in lots 9, 10, 11, and 12, concessions III, IV, and V of Cosby Township (Figure 2).

The property is accessible from Sudbury via paved highways 69, 64, and 535 (Figure 1). At Noelville, a gravel road separating concessions 2 and 3 of Cosby Township leads west for 9 km. Here a road branches to the north and passes west of Lac Clair (formerly Pure Lake) providing access to the southwestern part of the property (Figure 2). Roads requiring use of a four-wheel drive vehicle provide further access on the property.

GENERAL GEOLOGY

The Cosby Township property lies within the Grenville Structural Province and is underlain by the Cosby Batholith which is a felsic anorthosite-suite

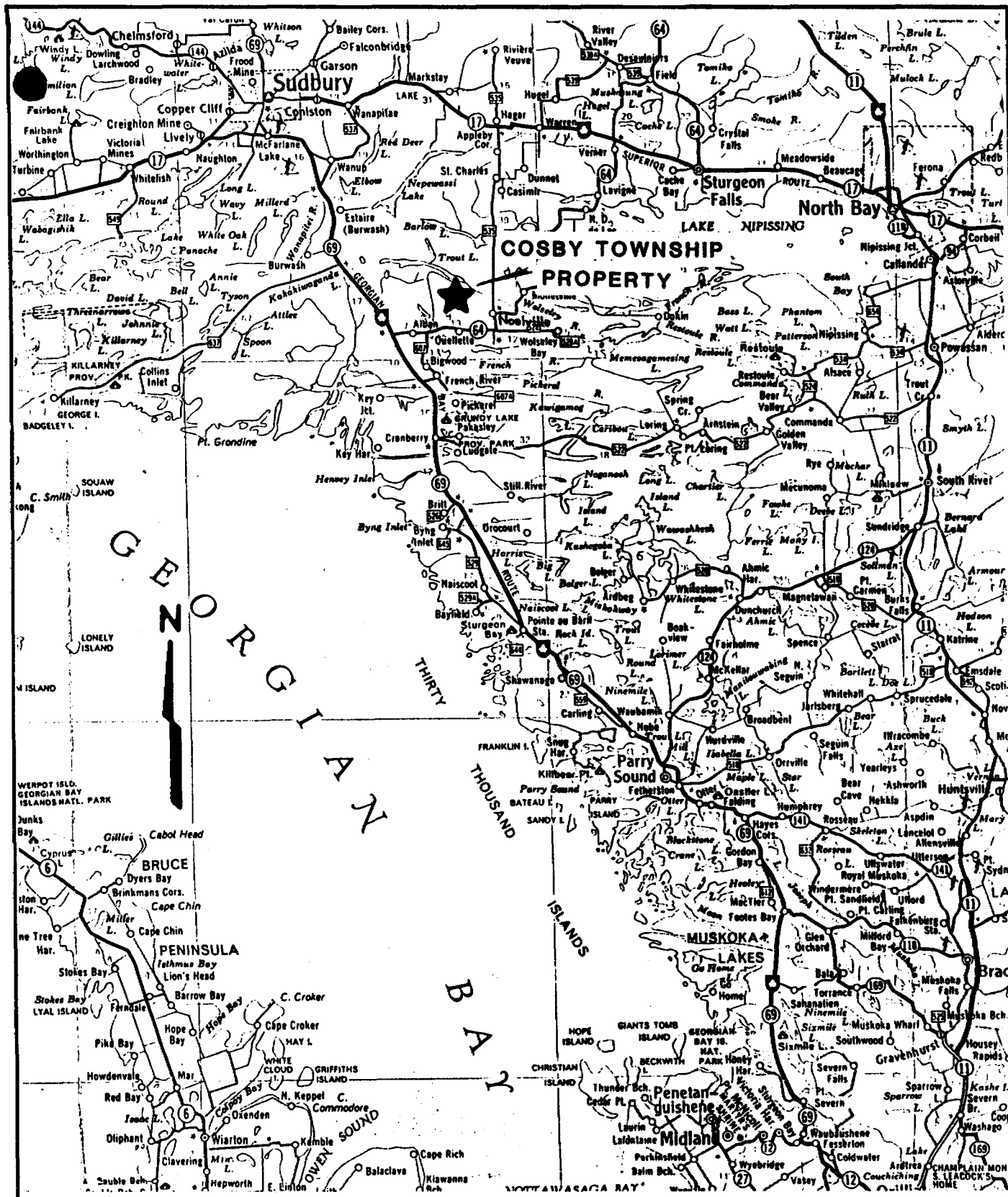


Figure 1.
NORGRANITE COMPANY LTD.
GENERAL LOCATION MAP
OF THE
COSBY TOWNSHIP PROPERTY
COSBY TOWNSHIP ONTARIO

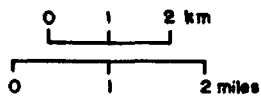
0 5 10 20 30 40 50 60 km

0 5 10 20 30 40 miles
 MARCH 1989 NT941-2/3

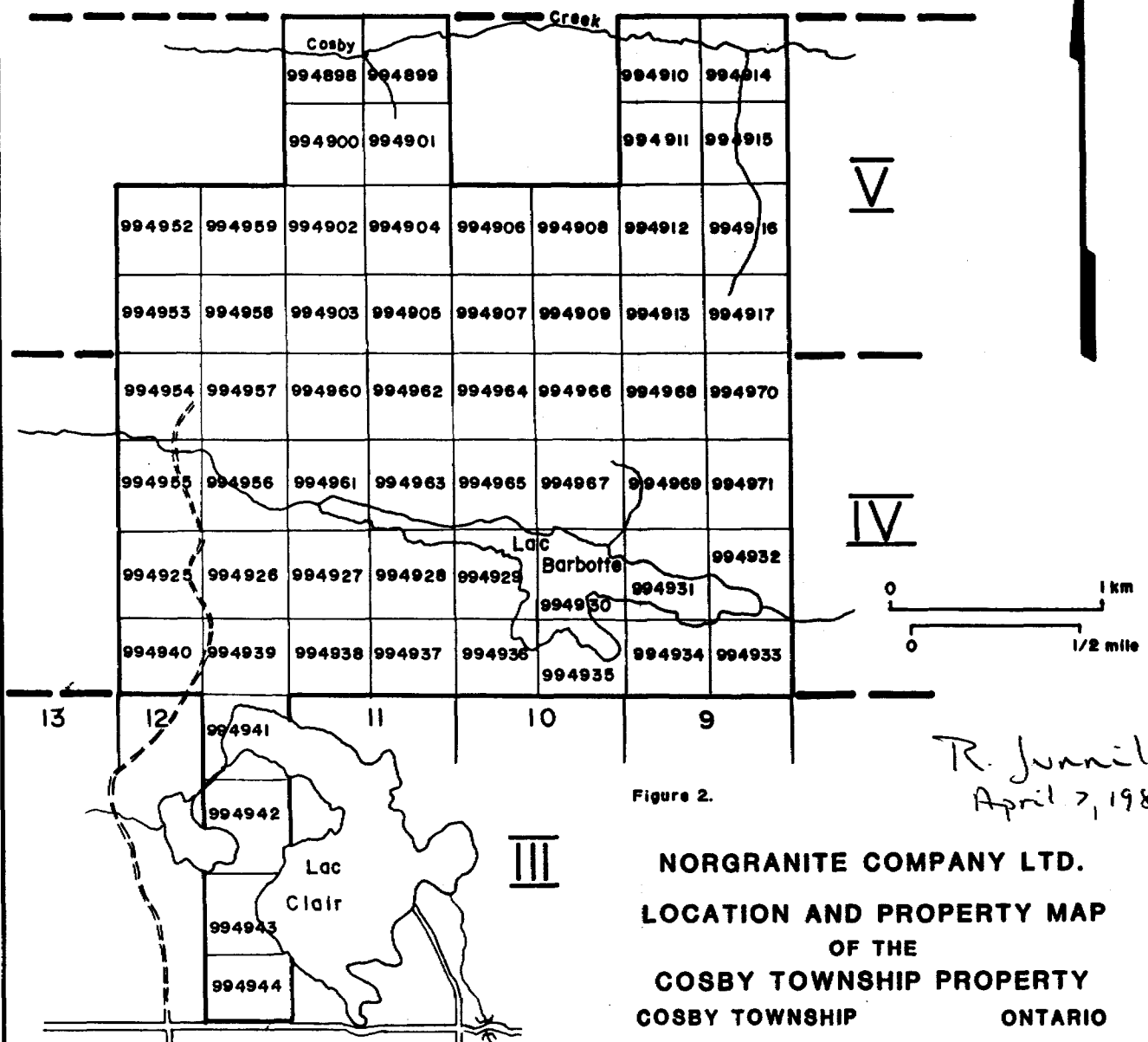
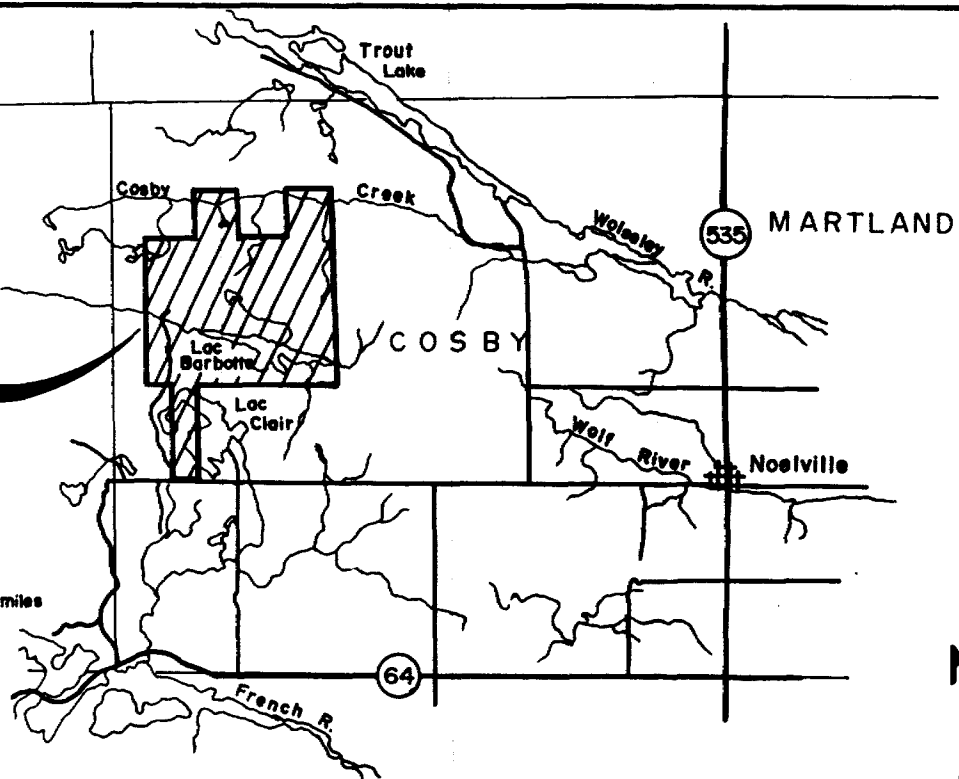
R. Jounila April 7, 1989

From Ralph-McNally Ontario road map.

DELAMERE
PROPERTY



From: Ontario Division of Mines,
Map 2271 - Burwash.



R. Junnila
April 7, 1989

Figure 2.

NORGRANITE COMPANY LTD.
LOCATION AND PROPERTY MAP
OF THE
COSBY TOWNSHIP PROPERTY
COSBY TOWNSHIP **ONTARIO**

intrusive complex of Middle to Late Proterozoic age. The batholith intrudes metasedimentary gneisses of the Middle Proterozoic Central Gneiss Belt. Late Proterozoic tectonism deformed the batholith into an antiformal structure and high rank regional metamorphism of similar age converted the rocks into gneisses (Lumbers, 1975) (Figure 3).

The Cosby Batholith is an elongate, northwesterly trending body 34 km long and 16 km wide. It shows a crude zoning with massive to slightly foliated, medium-grained monzonitic rocks predominating in the interior. These commonly display relict igneous textures. Rocks near the borders of the batholith are fine-grained quartz syenite and quartz monzonite which formed due to the contamination of monzonitic magma by metasediments. Xenoliths of metasediments are numerous in the border zone (Lumbers, 1975).

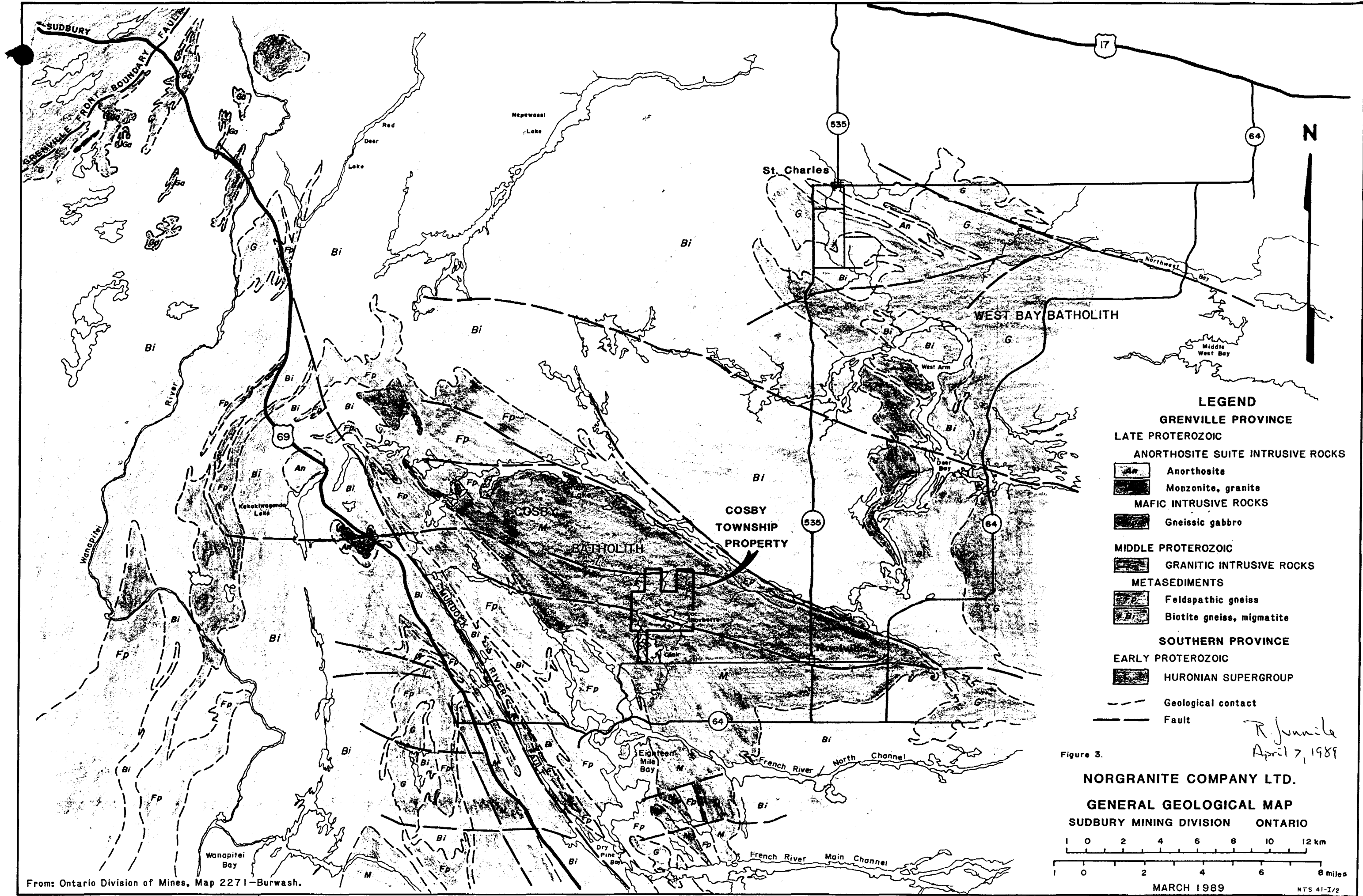
HISTORY AND DEVELOPMENT

The Lac Clair (Pure Lake) outcrop has been previously stripped and sampled by persons unknown. No record of mineral exploration in Cosby Township was found in the assessment files of the Resident Geologist's Office, Ministry of Northern Development and Mines, Sudbury.

WORK PERFORMED AND DISCUSSION OF RESULTS

Line-cutting and mapping

Line-cutting was begun on May 16, 1988. A base line bearing 125° (magnetic) was cut across the main claim group. Lines were turned off at right angles to the base line every 100 m; stations were established every 10 m. A total of 86.5 km of lines were cut (Figure 4; Map 1).



- LEGEND**
- GRENVILLE PROVINCE**
- LATE PROTEROZOIC**
- ANORTHOSITE SUITE INTRUSIVE ROCKS**
- Anorthosite
 - Monzonite, granite
- MAFIC INTRUSIVE ROCKS**
- Gneissic gabbro
- MIDDLE PROTEROZOIC**
- GRANITIC INTRUSIVE ROCKS
- METASEDIMENTS**
- Feldspathic gneiss
 - Biotite gneiss, migmatite
- SOUTHERN PROVINCE**
- EARLY PROTEROZOIC**
- HURONIAN SUPERGROUP
- Geological contact
- Fault

Figure 3.

R. Junnik
April 7, 1989

NORGRANITE COMPANY LTD.

GENERAL GEOLOGICAL MAP

SUBBURY MINING DIVISION ONTARIO

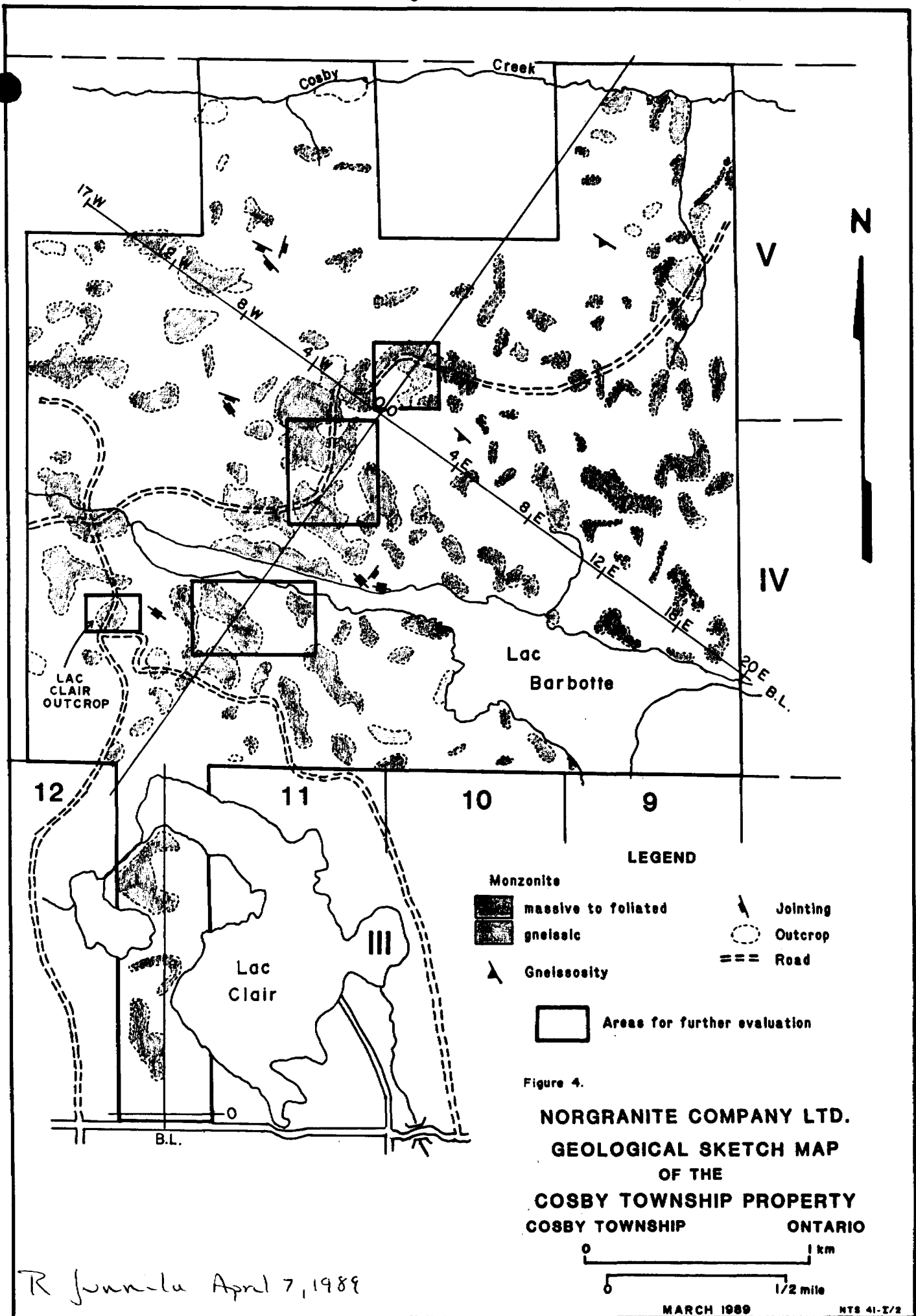
1 0 2 4 6 8 10 12 km

1 0 2 4 6 8 miles

MARCH 1989

NTS 41-1/2

From: Ontario Division of Mines, Map 2271-Burwash.



LEGEND

- Monzonite
 - massive to foliated
 - gneissic
- Jointing
- Outcrop
- Road
- Gneissosity
- Areas for further evaluation

Figure 4.

NORGRANITE COMPANY LTD.
GEOLOGICAL SKETCH MAP
OF THE
COSBY TOWNSHIP PROPERTY
COSBY TOWNSHIP **ONTARIO**

0 1 km
 0 1/2 mile

MARCH 1989 NTS 41-2/2

R Jounila April 7, 1989

West of Lac Clair a base line was established with a bearing of 0° (magnetic). The base line extends from the southern boundary of claim 994994 to the northern boundary of claim 994941, a distance of 1.6 km. Lines were turned off at right angles to the base line every 100 m.

Geological mapping was performed on the grid from July 15 to August 31. Promising areas were revisited to confirm and amplify geological data. Detailed mapping was also performed in selected areas.

Results of the geological survey

The majority of the property lies within the interior zone of the Cosby Batholith; the exception being four claims west of Lac Clair which are part of the border zone of the batholith. The dominant rock type is buff to brown, medium- to coarse-grained, massive to foliated monzonite to quartz monzonite (Figure 4; Map 1). In hand specimen the approximate mineral composition of the rock is: 55% orthoclase and microcline, 25% plagioclase, 12% hornblende, 0-5% quartz, 2% biotite and sericite, and less than 1% accessory minerals.

The rock displays euhedral minerals which are randomly oriented and fresh in appearance. Quartz is interstitial to the major minerals. Relict igneous textures are abundant in the southwestern part of the property from line 16 W to line 6 E and south of the base line. Igneous flow banding consists here of euhedral minerals aligned parallel to the flow direction. These features have a long, sinuous form, are up 25 m long, and grade laterally into massive, homogeneous monzonite. Pegmatite and aplite dikes, which formed during the latter stages of plutonic emplacement, are uncommon.

Gneissic zones occur throughout the property but are most abundant northeast of the base line between line 5 W and line 15 E (Figure 4; Map 1). The gneisses range from uniformly layered to complexly deformed. The uniformly layered gneiss is most abundant. Mineral grains and aggregates are elongated, flattened, and form parallel layers. In coarser-grained, originally porphyritic rocks, this texture forms augen gneiss in which feldspar and quartz eyes are separated by sericite and biotite. The gneiss occurs as discontinuous linear zones over a distance of about 200 m. Contacts of layered gneiss with the surrounding, homogeneous monzonite are gradational over 5-10 m. The dominant gneissosity of 305° - 320° is approximately parallel to the regional trend in the Cosby Batholith. In the northeastern part of the property, the rocks are mainly gneissic.

The complexly deformed gneiss consists of rounded and broken feldspar and quartz grains and aggregates in a sericite-biotite matrix. This rock type has numerous small-scale structures such as chevron folds, kink bands, minor slips or faults and very tight folding at several orientations. The zones of deformed gneiss are irregular and extend laterally for less than 100 m. Abruptly gradational contacts with homogeneous monzonite occur over 1-2 m.

Several outcrops of gneiss along Lac Barbotte (formerly Catfish Lake) and the creek to the west display a granular, recrystallized texture and are intruded by aplitic dikes and quartz veins.

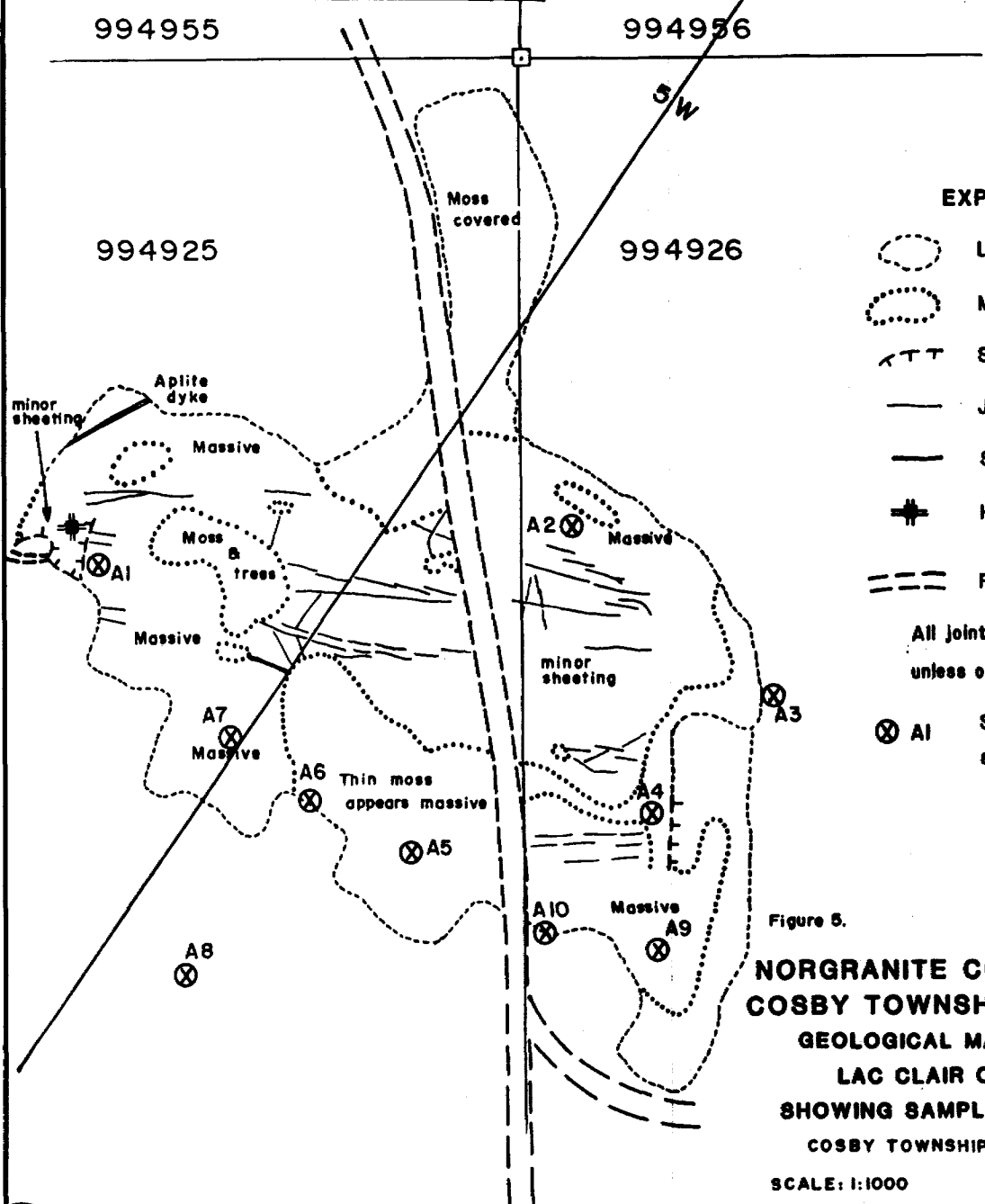
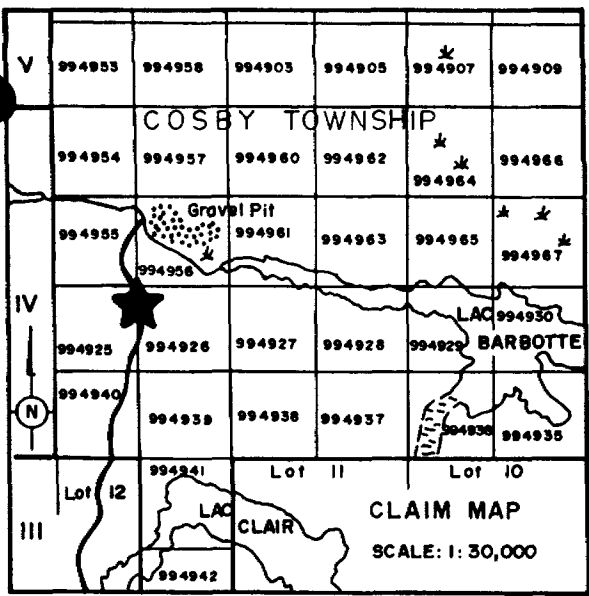
Several groups of joint orientations were observed on the property. The strongest trend is 095° - 110° . En echelon joint patterns were also observed at this orientation. Weaker joint trends occur at 140° with minor sets at 010° - 020° and at 035° . Some irregular splays and arcuate joints were also

noted. Most exposures display joint spacing of less than 1 m. Some areas however, have joint spacing of 1-3 m and are listed below. Sheeting or horizontal jointing was difficult to evaluate due to the scarcity of ledges and suitable faces. Most sheeting sets observed had spacing greater than 1.5 m.

Small dikes and quartz veins are uncommon and occupy late stage, sigmoidal tension gashes and fractures. Hematitic staining on joint surfaces is common. Late-stage faulting is indicated by northwesterly trending lineaments defined by lakes and swamps. Intense fault-related jointing occurs on the south shore of Lac Barbotte.

Testing of samples

Before a rock may be used as dimensional stone, particularly in exterior architectural applications, it must meet specified physical requirements for strength and durability defined by the American Society for Testing and Materials (ASTM). Therefore, a sampling program was performed on the Lac Clair (Pure Lake) outcrop to obtain samples of fresh rock with consistent colour, texture, and grain size. The samples were to be used both in ASTM tests and for visual evaluation. Attempts were made to remove small sample blocks from ten sites on the outcrop. Only site A1 yielded a sufficient volume of rock suitable for testing (Figure 5). The block from site A1 was used to provide samples cut to the dimensions specified for the various ASTM tests. (See Appendix B for details regarding sample removal and cutting)



EXPLANATION

- Limit of outcrop
 - Moss covered
 - Scarp or ledge
 - Joint showing trend
 - Strong joint
 - Horizontal jointing (sheeting)
 - Road
- All joints are vertical unless otherwise indicated.
- A1 Sample location and number

Figure 5.
NORGRANITE COMPANY LTD.
COSBY TOWNSHIP PROPERTY
GEOLOGICAL MAP OF THE
LAC CLAIR OUTCROP
SHOWING SAMPLE LOCATIONS
 COSBY TOWNSHIP ONTARIO
 SCALE: 1:1000 MARCH 1989



R. Junila April 7, 1989

The testing was performed in Ottawa by CANMET, Energy, Mines and Resources, Canada. The results of the tests are as follows:

| TEST | Minimum ASTM Standard | Test Result |
|--------------------------------|---------------------------|---------------------------|
| ASTM C170 Compressive strength | 19,000 psi | 30,680 psi |
| ASTM C99 Modulus of rupture | 1,500 psi | 1,792 psi |
| ASTM C97 Specific gravity | 2.54 tonne/m ³ | 2.71 tonne/m ³ |
| ASTM C97 Average absorption | less than 0.40% | 0.12% |
| ASTM C241 Abrasion resistance | not defined | 58.76 |
| ASTM C880 Flexural strength | apparatus not available | |

CONCLUSIONS AND RECOMMENDATIONS

Geological mapping and sampling have identified four areas which show good quarrying potential. These areas display a combination of favourable joint spacing (1-3 m), plus consistent colour, texture and grain size. Good joint spacing will allow for the extraction of large quarry blocks. Consistently good colour, texture, and grain-size meet the essential criteria for a marketable dimensional stone. Further testing and evaluation of the following areas is recommended (See Figures 4,5; Map 1):

A. The most favourable location is in the eastern part of claim 994925 and the western part of claim 994926, between line 6 W and line 4 W from 1500 S to 1650 S (Map 1). Samples from this area (Lac Clair outcrop) exceed the minimum physical requirements for dimensional stone specified by the ASTM. As this multicoloured stone has high market potential, test quarrying at the Lac Clair outcrop is recommended.

B. Three other areas also have good quarrying potential but exposure is limited. Power stripping and washing of outcrops will be necessary to permit detailed evaluation. A maximum overburden thickness of 1 m is anticipated locally but most areas have only a thin covering of moss. In order of priority the three areas are:

- 1) The southeast part of claim 994962 and the northeast part of claim 994963 between line 1 W and line 2 E, from 200 S to 500 S.
- 2) The west half of claim 994907 between line 2 W and line 1 E, from 100 N to 350 N.
- 3) The north half of claim 994927 between line 2 W and line 2 E, from 900 S to 1250 S.

Sudbury, Ontario
April 7, 1989


R.M. Junnila M.Sc.

REFERENCES AND SOURCES OF INFORMATION

Lumbers, S.B. 1975. Geology of the Burwash Area, Districts of Nipissing, Parry Sound, and Sudbury; Ontario Division of Mines, Geological Report 116, 160p. Accompanied by Map 2217, scale 1 inch to 2 miles.

Sudbury Sheet, Provincial Series Map, NTS 41 I/SE, scale 1:100 000; 1983

Cosby Township, Claim Map No. M773, scale 1 inch to 1/2 mile.

APPENDIX A

COSBY TOWNSHIP PROPERTY

CLAIM NUMBERS AND LOCATIONS

| Claim Number | Location |
|--------------|----------------------------------|
| S 994898 | NW 1/4 of N 1/2, lot 11, conc. 5 |
| S 994899 | NE 1/4 of N 1/2, lot 11, conc. 5 |
| S 994900 | SW 1/4 of N 1/2, lot 11, conc. 5 |
| S 994901 | SE 1/4 of N 1/2, lot 11, conc. 5 |
| S 994902 | NW 1/4 of S 1/2, lot 11, conc. 5 |
| S 994903 | SW 1/4 of S 1/2, lot 11, conc. 5 |
| S 994904 | NE 1/4 of S 1/2, lot 11, conc. 5 |
| S 994905 | SE 1/4 of S 1/2, lot 11, conc. 5 |
| S 994906 | NW 1/4 of S 1/2, lot 10, conc. 5 |
| S 994907 | SW 1/4 of S 1/2, lot 10, conc. 5 |
| S 994908 | NE 1/4 of S 1/2, lot 10, conc. 5 |
| S 994909 | SE 1/4 of S 1/2, lot 10, conc. 5 |
| S 994910 | NW 1/4 of N 1/2, lot 9, conc. 5 |
| S 994911 | SW 1/4 of N 1/2, lot 9, conc. 5 |
| S 994912 | NW 1/4 of S 1/2, lot 9, conc. 5 |
| S 994913 | SW 1/4 of S 1/2, lot 9, conc. 5 |
| S 994914 | NE 1/4 of N 1/2, lot 9, conc. 5 |
| S 994915 | SE 1/4 of N 1/2, lot 9, conc. 5 |
| S 994916 | NE 1/4 of S 1/2, lot 9, conc. 5 |
| S 994917 | SE 1/4 of S 1/2, lot 9, conc. 5 |
| | |
| S 994925 | NW 1/4 of S 1/2, lot 12, conc. 4 |
| S 994926 | NE 1/4 of S 1/2, lot 12, conc. 4 |
| S 994927 | NW 1/4 of S 1/2, lot 11, conc. 4 |
| S 994928 | NE 1/4 of S 1/2, lot 11, conc. 4 |
| S 994929 | NW 1/4 of S 1/2, lot 10, conc. 4 |
| S 994930 | NE 1/4 of S 1/2, lot 10, conc. 4 |
| S 994931 | NW 1/4 of S 1/2, lot 9, conc. 4 |
| S 994932 | NE 1/4 of S 1/2, lot 9, conc. 4 |
| S 994933 | SE 1/4 of S 1/2, lot 9, conc. 4 |
| S 994934 | SW 1/4 of S 1/2, lot 9, conc. 4 |
| S 994935 | SE 1/4 of S 1/2, lot 10, conc. 4 |
| S 994936 | SW 1/4 of S 1/2, lot 10, conc. 4 |
| S 994937 | SE 1/4 of S 1/2, lot 11, conc. 4 |
| S 994938 | SW 1/4 of S 1/2, lot 11, conc. 4 |
| S 994939 | SE 1/4 of S 1/2, lot 12, conc. 4 |
| S 994940 | SW 1/4 of S 1/2, lot 12, conc. 4 |
| S 994941 | NE 1/4 of N 1/2, lot 12, conc. 3 |
| S 994942 | SE 1/4 of N 1/2, lot 12, conc. 3 |
| S 994943 | NE 1/4 of S 1/2, lot 12, conc. 3 |
| S 994944 | SE 1/4 of S 1/2, lot 12, conc. 3 |

Claim numbers and locations, Cosby Township; continued.

| | |
|----------|----------------------------------|
| S 994952 | NW 1/4 of S 1/2, lot 12, conc. 5 |
| S 994953 | SW 1/4 of S 1/2, lot 12, conc. 5 |
| S 994954 | NW 1/4 of N 1/2, lot 12, conc. 4 |
| S 994955 | SW 1/4 of N 1/2, lot 12, conc. 4 |
| S 994956 | SE 1/4 of N 1/2, lot 12, conc. 4 |
| S 994957 | NE 1/4 of N 1/2, lot 12, conc. 4 |
| S 994958 | SE 1/4 of S 1/2, lot 12, conc. 5 |
| S 994959 | NE 1/4 of S 1/2, lot 12, conc. 5 |
| S 994960 | NW 1/4 of N 1/2, lot 11, conc. 4 |
| S 994961 | SW 1/4 of N 1/2, lot 11, conc. 4 |
| S 994962 | NE 1/4 of N 1/2, lot 11, conc. 4 |
| S 994963 | SE 1/4 of N 1/2, lot 11, conc. 4 |
| S 994964 | NW 1/4 of N 1/2, lot 10, conc. 4 |
| S 994965 | SW 1/4 of N 1/2, lot 10, conc. 4 |
| S 994966 | NE 1/4 of N 1/2, lot 10, conc. 4 |
| S 994967 | SE 1/4 of N 1/2, lot 10, conc. 4 |
| S 994968 | NW 1/4 of N 1/2, lot 9, conc. 4 |
| S 994969 | SW 1/4 of N 1/2, lot 9, conc. 4 |
| S 994970 | NE 1/4 of N 1/2, lot 9, conc. 4 |
| S 994971 | SE 1/4 of N 1/2, lot 9, conc. 4 |

TOTAL: 60 CLAIMS

APPENDIX B

DESCRIPTION OF SAMPLING METHOD AT THE LAC CLAIR OUTCROP,
AND SAMPLE DIMENSIONS SPECIFIED FOR ASTM TESTS.

A sampling program was performed on the Lac Clair (Pure Lake) outcrop to obtain samples of fresh rock with consistent colour, texture, and grain size. The samples were to be used both in ASTM tests and for visual evaluation.

Attempts were made at ten sites on the outcrop to obtain sample material (See Figure 5 for sites). To obtain samples, eight holes were drilled about 10 cm apart on the upper surfaces of ledges. The drill was powered by a 150 cfm air compressor. A wedge and feather set was applied to each drill hole and the sample removed. Only site A1 yielded a sufficient volume of fresh rock having consistent colour, texture, and grain size. The sample block from site A1 measured 91 cm x 91 cm x 31 cm. The sampling and rock cutting were performed by L. Bégin and A.R. Durrant.

The block from site A1 was cut on a diamond saw to make samples having the dimensions specified for the various ASTM tests. The number of samples required and the sample dimensions are as follows:

| Test | Number of samples | Dimensions |
|--------------------------------|-------------------|--|
| ASTM C170 Compressive strength | 5 | 50.8 mm x 50.8 mm x 50.8 mm (2 in. x 2 in. x 2 in.) |
| ASTM C99 Modulus of rupture | 5 | 200 mm x 100 mm x 60 mm (8 in. x 4 in. x 2 1/4 in.) |
| ASTM C97 Specific gravity | 3 | 50.8 mm x 50.8 mm x 50.8 mm (2 in. x 2 in. x 2 in.) |
| ASTM C97 Average absorption | 3 | 50.8 mm x 50.8 mm x 50.8 mm (2 in. x 2 in. x 2 in.) |

| | | |
|-------------------------------|---|---|
| ASTM C241 Abrasion resistance | 3 | 50.8 mm x 50.8 mm x 25 mm (2 in. x 2 in. x 1 in.) |
| ASTM C880 Flexural strength | 5 | 300 mm x 38 mm x 25 mm (12 in. x 1 1/2 in. x 1 in.) |

** Note: Although the flexural strength test was not performed by CANMET, the samples for the test were cut and submitted.

ASSESSMENT WORK BREAKDOWN FOR SAMPLING AND CUTTING.

Work on claims S 994925 and S 994926 performed by:

L. Bégin 11 Iberville Street, W., Rouyn-Noranda, P.Q., J9X 3M6
A.R. Durrant 390 Eva Avenue, Sudbury, Ontario, P3C 4N3

Work performed: Nov. 1, 1988 - Dec. 15, 1988

Manual work - 2 men for a total of 34 hours

34 hours/6 = 6 Days Credit

Mechanical work (drilling, rock sawing) -
two men for a total of 302 hours

302 hours/3 = 101 Days Credit

TOTAL CREDITS:

107 DAYS



Type of Survey(s): **GEOLOGICAL**

Township or Area: **COSBY TOWNSHIP**

Claim Holder(s): **749494 ONTARIO LIMITED**

Prospector's Licence No.: **T 4946**

Address: **201-69 CEDAR ST. SUDBURY, ONT. P3E 1A7**

Survey Company: **G.J. HINSE GEOLOGICAL SERVICES LTD.**

Date of Survey (from & to): **16 Day 5 Mo. 88 Yr. 07 Day 04 Mo. 89 Yr.**

Total Miles of line Cut: **86.47 Km (54 mi)**

Name and Address of Author (of Geo-Technical report): **R.M. JUNNILA 803-2200 REGENT ST. S. SUDBURY P3E 5S2**

Special Provisions

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

Airborne Credits

| Geophysical | Days per Claim |
|---|----------------|
| Complete reverse side and enter total(s) here | |
| Geological | |
| Geochemical | |

Expenditures (excludes power stripping)

| Type of Work Performed | Days per Claim |
|------------------------|----------------|
| Electromagnetic | |
| Magnetometer | |
| Radiometric | |
| Other | |

Calculation of Expenditure Days Credits

| | | | | |
|--------------------|---|----|---|--------------------|
| Total Expenditures | + | 15 | = | Total Days Credits |
| \$ | | | | |

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.

Date: **April 7, 1989**
Recorded Holder or Agent (Signature): **R. Junnila**

Mining Claims Traversed (List in numerical sequence)

| Mining Claim Prefix | Mining Claim Number | Expend. Days Cr. | Mining Claim Prefix | Mining Claim Number | Expend. Days Cr. |
|---------------------|---------------------|------------------|---------------------|---------------------|------------------|
| S | 994 898 | | S | 994 928 | |
| | 994 899 | | | 994 929 | |
| | 994 900 | | | 994 930 | |
| | 994 901 | | | 994 931 | |
| | 994 902 | | | 994 932 | |
| | 994 903 | | | 994 933 | |
| | 994 904 | | | 994 934 | |
| | 994 905 | | | 994 935 | |
| | 994 906 | | | 994 936 | |
| | 994 907 | | | 994 937 | |
| | 994 908 | | | 994 938 | |
| | 994 909 | | | 994 939 | |
| | 994 910 | | | 994 940 | |
| | 994 911 | | | 994 941 | |
| | 994 912 | | | 994 942 | |
| | 994 913 | | | 994 943 | |
| | 994 914 | | | 994 944 | |
| | 994 915 | | | 994 952 | |
| | 994 916 | | | 994 953 | |
| | 994 917 | | | 994 954 | |
| | 994 925 | | | 994 955 | |
| | 994 926 | | | 994 956 | |
| | 994 927 | | | 994 957 | |

~ SEE ATTACHED LIST ~

Total number of mining claims covered by this report of work: **60**

For Office Use Only

| | | |
|---------------------------|-----------------|------------------------------|
| Total Days Cr. Recorded | Date Recorded | Miner's Name |
| 2400 | APRIL 12, 1989 | J.C. Miller |
| Date Approved as Recorded | Branch Director | |
| | | See attached work statements |

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: **R.M. JUNNILA 803-2200 REGENT ST. S. SUDBURY, ONT., P3E 5S2**

Date Certified: **APRIL 7 1989**

Certified by (Signature): **R. Junnila**

ASSESSMENT WORK CREDITS - GEOLOGICAL TECHNICAL DATA STATEMENT

ATTACHED LIST: CLAIMS TRAVERSED IN NORGRANITE COMPANY LTD.
GEOLOGICAL SURVEY OF THE COSBY TOWNSHIP PROPERTY,
DISTRICT OF SUDBURY.

- S 994958
- S 994959
- S 994960
- S 994961
- S 994962
- S 994963
- S 994964
- S 994965
- S 994966
- S 994967
- S 994968
- S 994969
- S 994970
- S 994971

TOTAL: 60 claims

R. Juvila

April 7, 1989



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) GEOLOGICAL
Township or Area COSBY TOWNSHIP DISTRICT OF SUDBURY
Claim Holder(s) 749494 ONTARIO LIMITED
201-69 CEDAR ST., SUDBURY, P3E 1A7
Survey Company G. HINSE GEOLOGICAL SERVICES LTD.
201-69 CEDAR ST., SUDBURY P3E 1A7
Author of Report R. M. JUNNILA
Address of Author 803- 2200 REGENT ST. S., SUDBURY
Covering Dates of Survey MAY 16, 1988 - APRIL 7, 1989
(linecutting to office)
Total Miles of Line Cut 86.47 Km (54 miles)

| <u>SPECIAL PROVISIONS</u> <u>CREDITS REQUESTED</u> | DAYS per claim |
|---|------------------------|
| ENTER 40 days (includes line cutting) for first survey. | Geophysical |
| ENTER 20 days for each additional survey using same grid. | -Electromagnetic _____ |
| | -Magnetometer _____ |
| | -Radiometric _____ |
| | -Other _____ |
| | Geological <u>40</u> |
| | Geochemical _____ |

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

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

DATE: April 7, 1989 SIGNATURE: R. Junnila
Author of Report or Agent

Res. Geol. _____ Qualifications 211717

| <u>Previous Surveys</u> | | | |
|-------------------------|------|------|--------------|
| File No. | Type | Date | Claim Holder |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| <u>MINING CLAIMS TRAVERSED</u> List numerically | |
|--|-------------------|
| S | <u>994898</u> |
| | (prefix) (number) |
| S | <u>994899</u> |
| S | <u>994900</u> |
| S | <u>994901</u> |
| S | <u>994902</u> |
| S | <u>994903</u> |
| S | <u>994904</u> |
| S | <u>994905</u> |
| S | <u>994906</u> |
| S | <u>994907</u> |
| S | <u>994908</u> |
| S | <u>994909</u> |
| S | <u>994910</u> |
| S | <u>994911</u> |
| S | <u>994912</u> |
| S | <u>994913</u> |
| S | <u>994914</u> |
| S | <u>994915</u> |
| S | <u>994916</u> |
| S | <u>994917</u> |
| ~ SEE ATTACHED LIST ~ | |
| TOTAL CLAIMS <u>60</u> | |

OFFICE USE ONLY

If space insufficient, attach list

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 _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

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
 p. p. m.
 p. p. b.

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

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____



Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

May 29, 1989

Mining Recorder
Ministry of Northern Development and Mines
Bag 3000
200 Brady Street, 6th floor
Sudbury, Ontario
P3A 5W2


Dear Sir:

Re: Notice of Intent dated April 26, 1989 Geological Survey Submitted
on Mining Claims S 994900 et al in the Township of Cosby.

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,


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

D/K:eb
Enclosure

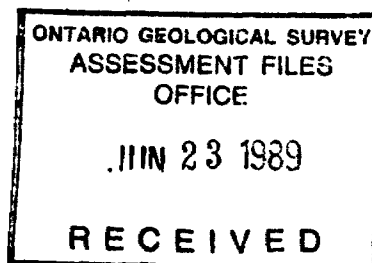
cc: Mr. G.H. Ferguson
Mining and Lands Commissioner
Toronto, Ontario

749494 Ontario Ltd.
Sudbury, Ontario

Mining Lands Section
3rd Floor, 880 Bay Street
Toronto, Ontario
M5S 1Z8

Telephone: (416) 965-4888

Your file: W8907-47
Our file: 2.12336



Resident Geologist
Sudbury, Ontario

R.M. Junnila
Sudbury, Ontario

APRIL 26, 1989

W8907-47

| |
|---|
| Recorded Holder 749494 ONTARIO LIMITED |
| Township or Area COSBY |

| Type of survey and number of Assessment days credit per claim | Mining Claims Assessed |
|---|------------------------|
| Geophysical | |
| Electromagnetic _____ days | S 994900 to 09 incl |
| Magnetometer _____ days | 994911 to 15 incl |
| Radiometric _____ days | 994917 |
| Induced polarization _____ days | 994925 to 28 incl |
| Other _____ days | 994932 |
| Section 77 (19) See "Mining Claims Assessed" column | 994937 to 40 incl |
| Geological _____ days | 994943-44 |
| Geological <u>40</u> _____ days | 994952 to 55 incl |
| Geochemical _____ days | 994957 to 71 incl |
| Man days <input type="checkbox"/> Airborne <input type="checkbox"/> | |
| Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> Credits have been reduced because of partial coverage of claims. | |
| <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant. | |

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

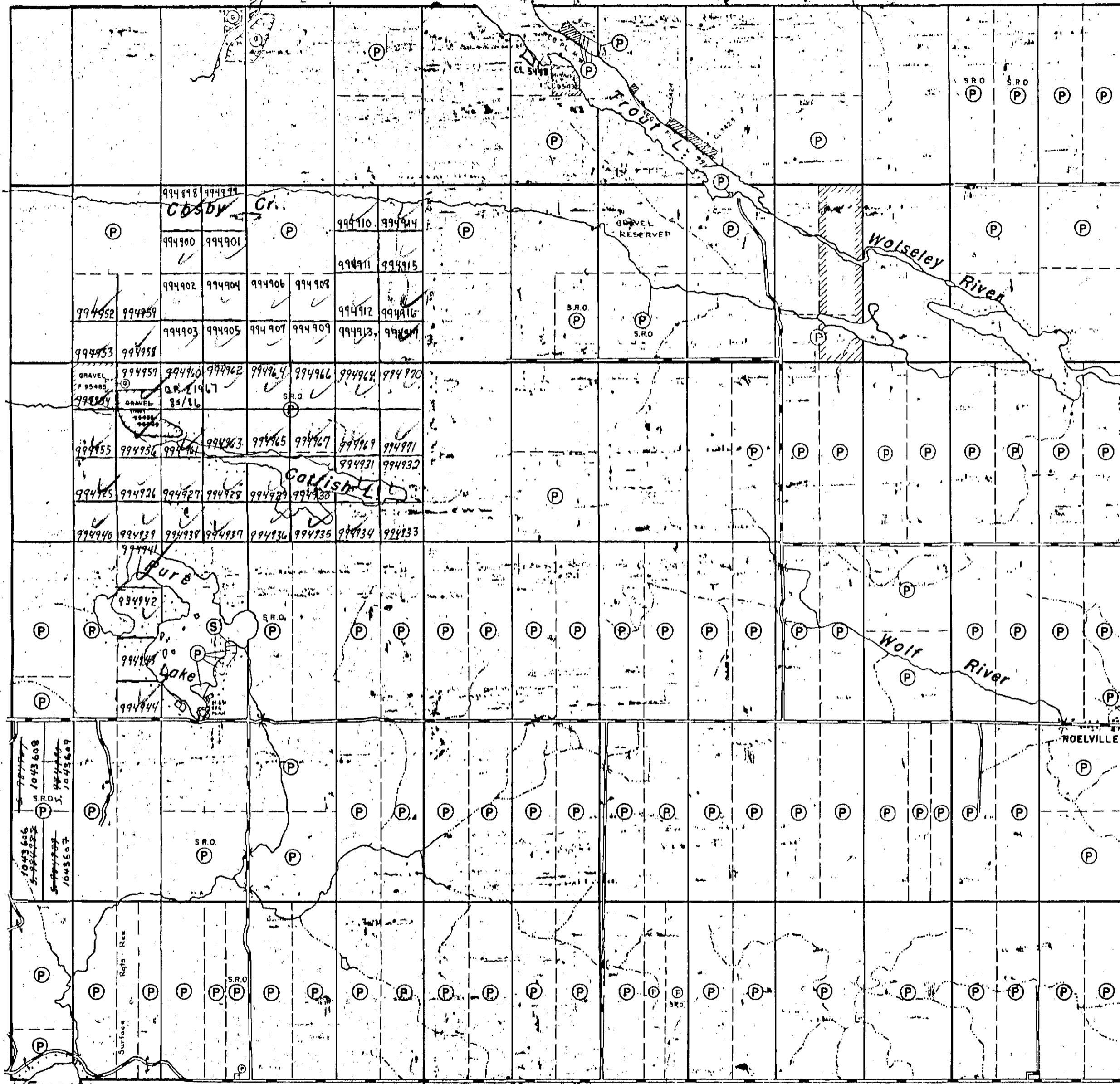
| 30 days Geological | 20 days Geological | 10 days Geological |
|--------------------|--------------------|--------------------|
| S 994910 | S 994898-99 | S 994930 |
| 994916 994942 | 994929 | S 994933-34 |
| 994931 994956 | 994935 | |
| 994936 | 994941 | |

No credits have been allowed for the following mining claims

| | |
|---|--|
| <input type="checkbox"/> not sufficiently covered by the survey | <input type="checkbox"/> insufficient technical data filed |
|---|--|

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

Cherriman Twp



Delamere Twp.

VI

V

IV

III

II

I

Martland Twp.

THE TOWNSHIP OF

COSBY

DISTRICT OF SUDBURY

SUDBURY MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

- PATENTED LAND (P)
- CROWN LAND SALE (C)
- LEASES (L)
- LOCATED LAND (Lo)
- LICENSE OF OCCUPATION (L)
- MINING RIGHTS ONLY (M.R)
- SURFACE RIGHTS ONLY (S.R)
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES

NOTES

400' Surface Rights Reservation around all Lakes and Rivers.

RESERVE TO DEPT. OF HIGHWAYS SHOWN THUS

⊙ QUARRY PERMIT
CL 3892
CL 3893

DATE OF ISSUE
MAY 1 1959
SUDBURY
MINING RECORDER'S OFFICE

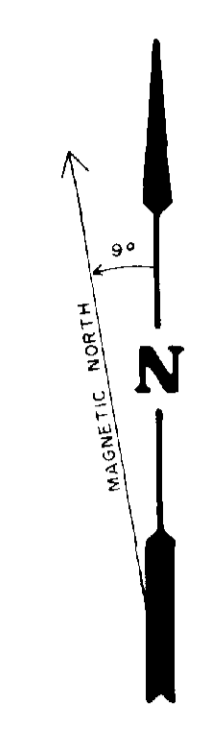
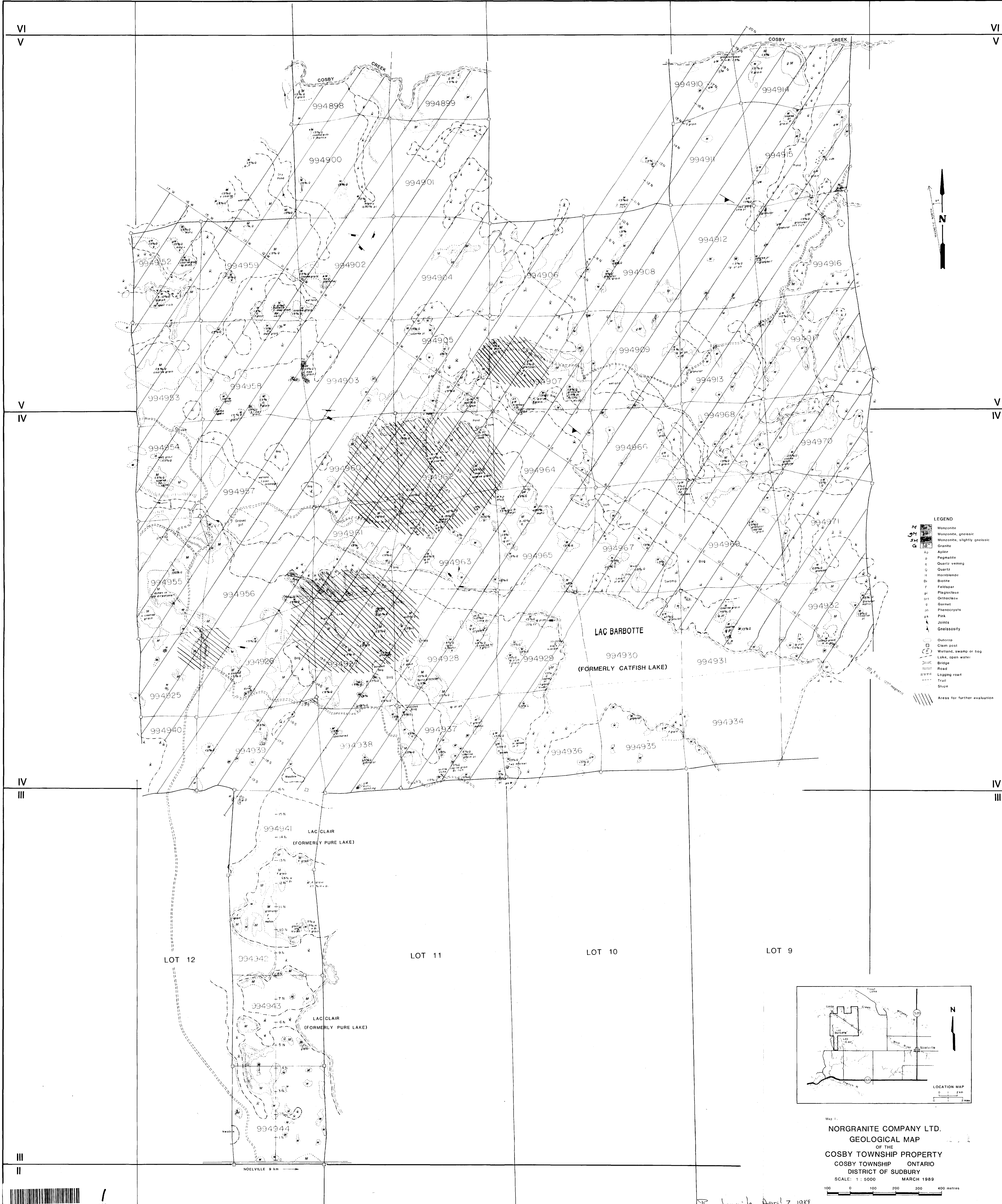
COSBY
PLAN NO.- M733

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

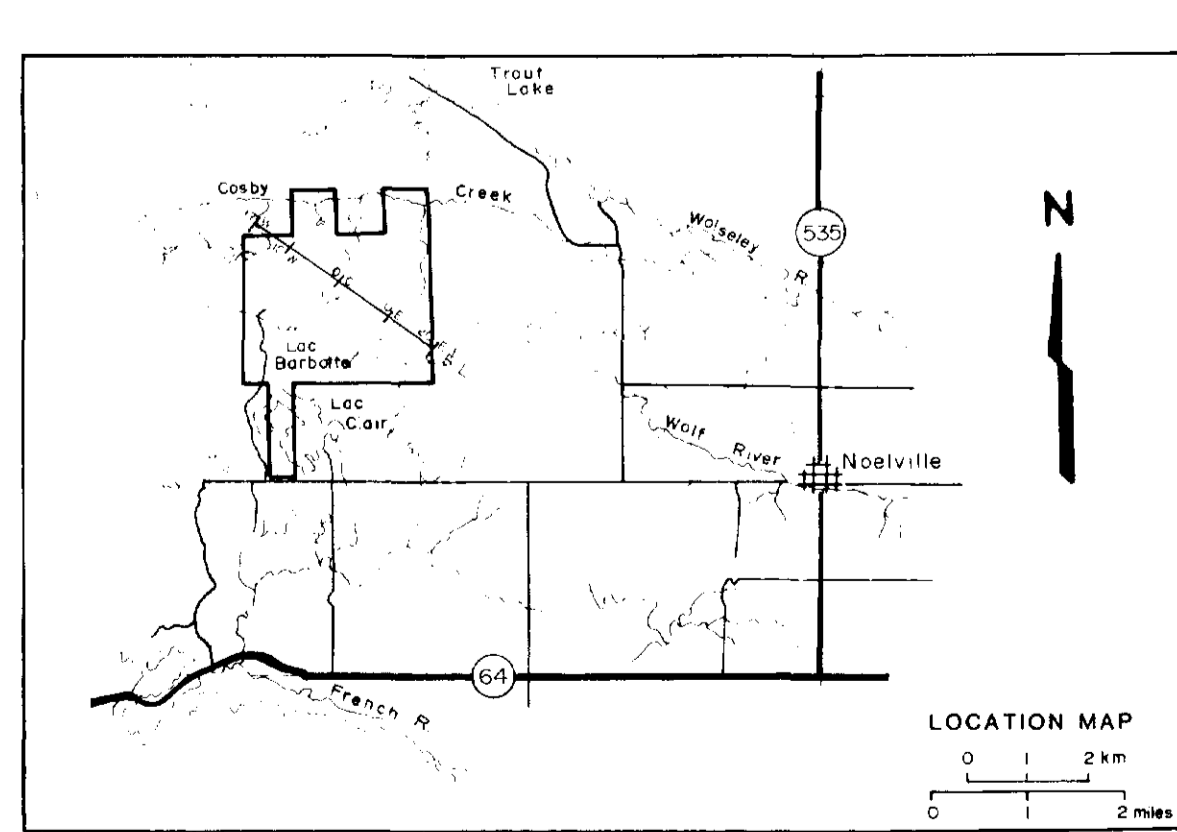
Mason Twp.



41102NE0004 2-12336 COSBY



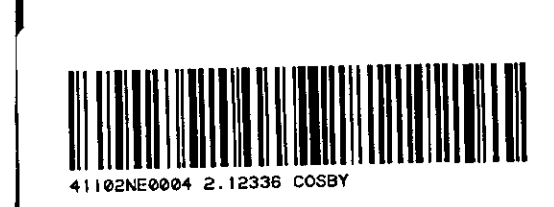
- LEGEND**
- M Monzonite
 - GM Monzonite, gneissic
 - SM Monzonite, slightly gneissic
 - G Granite
 - As Amphibole
 - P Pegmatite
 - Q Quartz
 - QV Quartz veining
 - H Hornblende
 - B Biotite
 - F Feldspar
 - Pl Plagioclase
 - Ort Orthoclase
 - Ga Garnet
 - Ph Phenocrysts
 - Pk Plink
 - J Joints
 - Gs Gneissosity
 - Outcrop
 - Claim post
 - Wetland, swamp or bog
 - Lake, open water
 - Bridge
 - Road
 - Logging road
 - Trail
 - Slope
 - Area for further evaluation



Map 1.
NORGRANITE COMPANY LTD.
GEOLOGICAL MAP
 OF THE
COSBY TOWNSHIP PROPERTY
 COSBY TOWNSHIP ONTARIO
 DISTRICT OF SUDBURY
 SCALE: 1 : 5000 MARCH 1988



R. Jounila April 7, 1988



1
210