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A GEOLOGICAL SURVEY OF THE
DIMENSION STONE RESOURCES ON THE
TURTLE LAKE PROPERTY
THE PARRY SOUND DISTRICT OF ONTARIO

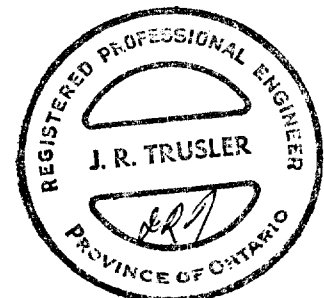
by

JAMES R. TRUSLER ✓

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LONG.: 79°43' 01"W - 79°43' 38"W
LAT.: 45°19' 12"N - 45°19' 40"N
NTS: 31E/5

DATE: December 30, 1993



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SUMMARY

The Parry Sound area of Ontario is underlain by complex gneisses and migmatites of Middle to Late Proterozoic age which are part of the Ontario segment of the Central Gneiss Belt of the Grenville Structural Province. A working model of thrust plates (called domains and sub-domains) which are separated by ductile thrust faults and moved in a northwesterly direction upon each other has been postulated by Davidson et al (1982). Easton (1992) has improved this model in his synopsis using a hierarchy of terranes and domains wherein the terranes include domains of similar age which are autochthonous with respect to each other. Age dating has indicated that four of these large scale terranes or plates are stacked on each other with the base being near Sudbury at the Grenville Front and the top being near Kingston.

Despite the recent wealth of scholarly publications a comprehensive geological map has not yet been made available for the area. However, the limited information available has enabled the clear identification of potentially favourable conditions for both flagstone and dimension stone. Several flagstone occurrences cluster along Davidson's thrusts and several potential dimension stone prospects have been identified within the interior of particular domains.

Although one may ordinarily not expect to find dimension stone within tectonite terranes, it is evident that the autochthonous nature of some of the domains combined with annealing effect of later superimposed amphibolite facies metamorphism preserved large competent blocks of migmatites and gneisses.

As a result of mapping dimension stone potential, and sawing and polishing specimens from many prospects. Seven sites in the Britt domain, and one in each of the Rosseau and Moon River domains have been staked and mapped by the writer resulting in the definition of a large number of potential quarry sites. The two claim unit Turtle Lake property is one of these.

The property is underlain by an unidentified circum 1450 Ma megacrystic granite pluton within the Rosseau domain. A strained megacrystic granite underlies the southern two thirds of the property and a tonalite gneiss underlies the northern portion. The rocks strike ENE and dip very gently to the north. The megacrystic granite contains approximately 20% amphiboles and is attractive. Site planning, geological mapping, and drilling of the large megacrystic granite outcrop in the centre of the property are warranted. Dimension stone resources exceed 10,000,000 tonnes.



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INTRODUCTION

In 1991, the writer commenced a project to evaluate the flagstone and dimension stone resources of the Parry Sound area. At the same time efforts by former Ministry of Northern Development and Mines geologists, principally Chris Marmont and Dave Villard, were being made to outline the substantial potential for these stone resources and make the public aware of the opportunity. In 1992, the regional investigation of flagstone resources by the writer proved discouraging. It was decided late in the field season to focus solely on the dimension stone potential.

By the end of 1992, many prospective dimension stone sites had been identified by either government publications or by the writer's prospecting. Nine of these dimension stone properties have now been staked by the writer, and an initial evaluation of each property involving geological mapping of the outcrops at a scale of 1:5,000 has been completed. The work provides an initial evaluation of potential quarry sites on each property. The project has been supported by the Ontario Prospector's Assistance Program in both 1992 and 1993.

In May and September, 1993, the Turtle Lake property was staked for its dimension stone potential. Geological mapping was carried out in 1993, and the map in the back pocket was prepared and is being submitted with the final report for the OPAP grant in 1993.

The format of the geological report is formulated in compliance with assessment submission requirements.

LOCATION AND ACCESS

The property is located in Christie Township, Parry Sound District, Southern Ontario Mining District, and Sudbury District Regional Geologist's area approximately 135 miles (216 km) north of Toronto (Figure 1). The property is bounded by longitudes 79°43'38"W on the west and 79°43'01"W on the east and latitudes 45°19'12"N on the south and 45°19'40"N on the north. The corresponding UTM co-ordinates in metres are 599,740 on the west, 600,520 on the east, 5,019,140 on the south and 5,019,900 on the north. The property is within National Topographic System area 31E/5 and is recorded on claim map M67.

The Turtle Lake property is 0.5 kilometre east of the Turtle Lake access road at a point 6 km. north of Hwy 141. The Turtle Lake Rd meets Hwy 141 five km west of Rosseau.

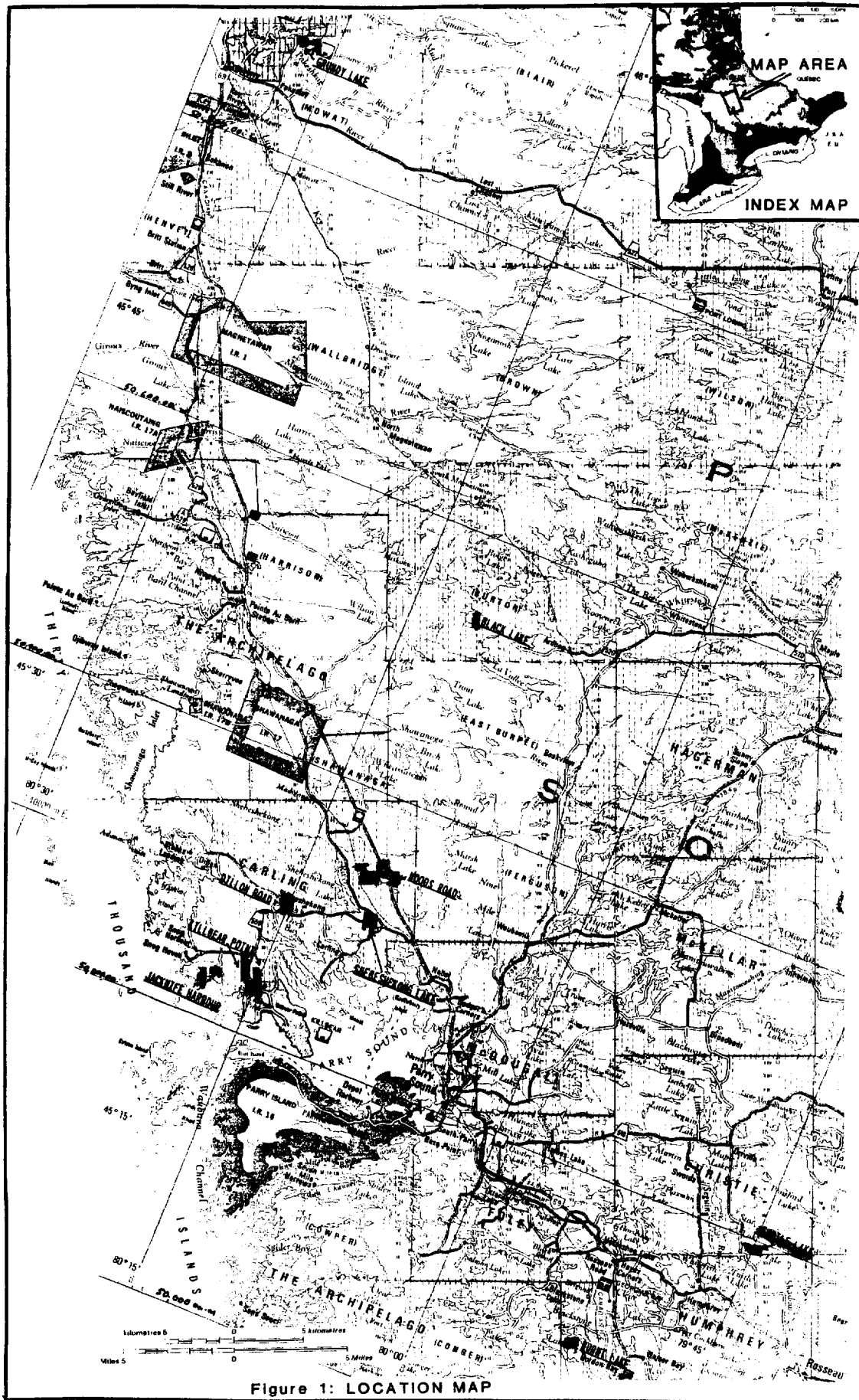


Figure 1: LOCATION MAP

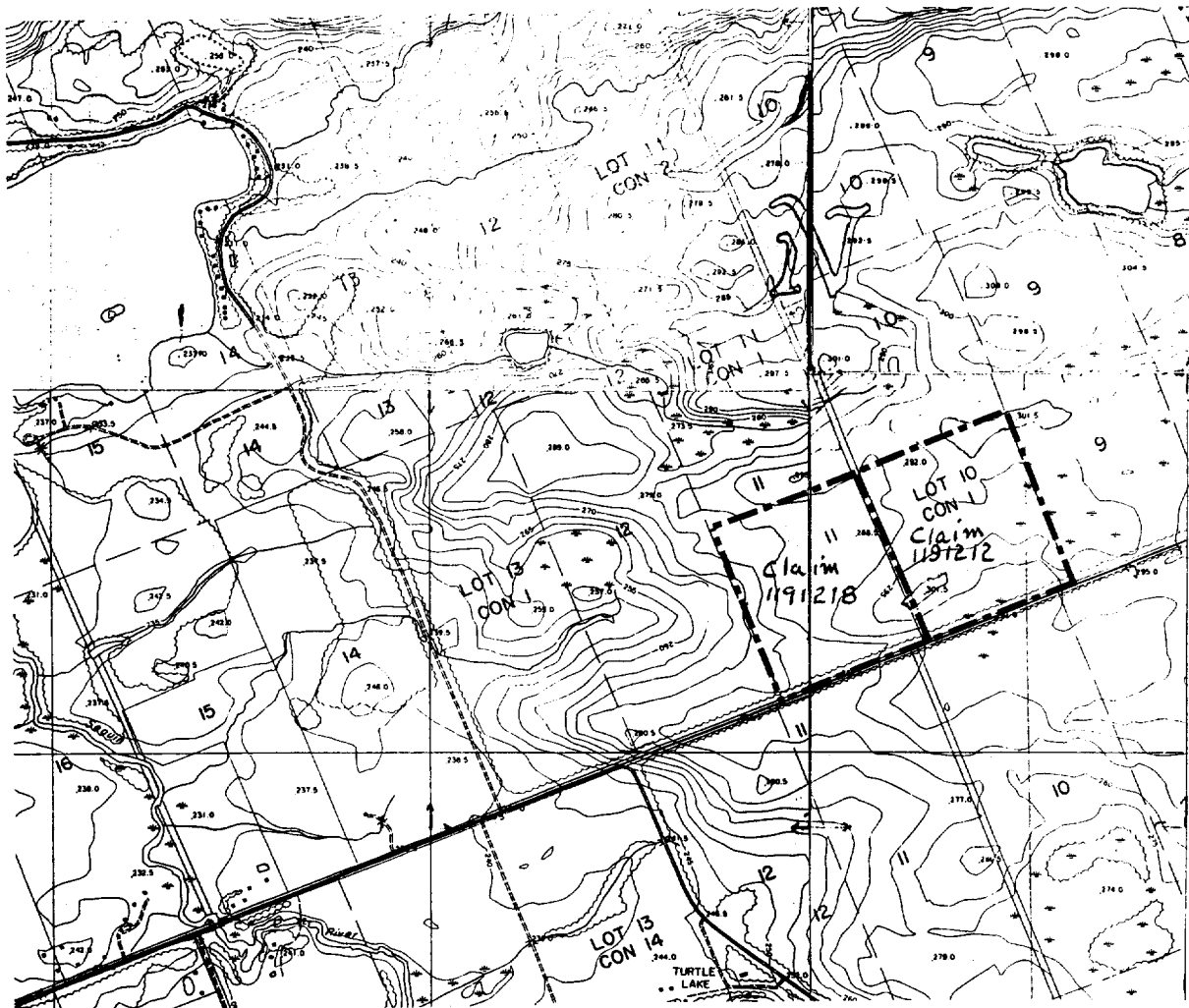
PROPERTY

The Turtle Lake property comprises approximately 100 acres and is more particularly described in TABLE 1 (Figure 2).

Assessment will be filed for the current work on the claims, and it is anticipated, as a result, that sufficient credits should be available to keep the entire claim group in good standing for some five years from the date of submission.

TABLE 1: TURTLE LAKE PROPERTY

<u>Claim No</u>	<u>Township</u>	<u>Lot</u>	<u>Conc.</u>	<u>Area</u>	<u>Recording Date</u>
1191212	Christie	S/2 10	I	50 ac	May 4, 1993
1191218	Christie	S/2 11	I	50 ac	Sept. 7+, 1993



Scale: 1:20,000
Figure 2: Property Map

DATES WORKED METHODS USED ON CURRENT PROJECT

Preparation work on the project commenced in March, 1993, the field work commenced on September 13, 1993 and the map drafting and report writing was completed on December 30, 1993. Actual work days for assessment purposes break down as follows:

Turtle Lake Property: Claims SO1191212, 1191218.

Preparation: Sept. 12, 13, 1993 (2 days)

Field: Sept. 13, 14, 16, 1993 (2½ days)

Drafting: Sept. 29, 30, Oct. 1, 4-7, 20-23, 1993 (3½ days)

Reporting: Sept. 20-24, 27, Oct. 25, Nov. 1, Dec. 16-24, 26-30, 1993 (2½ days)

Preparation for field work involved production of 1:5,000 blow ups of data from Ontario Base Maps and 1:30,000 air photographs. A grid was overlain on the maps, and stations for recording observations at approximately 100 metre centres were plotted and coded. Due to the high percentage of outcrop, visual control was feasible in almost all cases, but traversing by pace and compass from known sites was sometimes supplemented by the use of a rangefinder. The magnetic declination used in the field work is 11°-23' W.

At each station rock types with variations were noted generally with a visual description of colour and textures. Foliations were described and measured where possible. The main emphasis was in measurement of joints and their separations. In this respect at each station joints were observed within a 50 to 100 foot radius of the station. The attitude of each joint was recorded with the minimum and maximum spacing observed and the average spacing estimated.

Observations were directly recorded on a dictaphone in the field. The verbal record was later transcribed to paper notes. Drafting of the data onto maps was later done from the paper notes.

PREVIOUS GEOLOGICAL WORK

A traverse of the shore of Georgian Bay was made by Alexander Murray in 1848, and he gives a brief account of the geology of the shoreline (Murray 1848, p.45,46). The shoreline of Georgian Bay was again examined by Robert Bell in 1876 (Bell 1876, p.198-207). The Huntsville -Bracebridge area was investigated by W.A. Parks (1900, p.121-126), and brief notes on the geology are given. Further field work was done in the area in 1905 by T.L. Walker (1905, p. 84-86). The International Geological Congress had a field excursion in Parry Sound area in 1913. Some local geological features are described by T.L. Walker (1913, p. 98-100).

The first comprehensive reconnaissance mapping in the area was done by Satterly (1942) who visited all the local known mineral deposits. Satterly (1955) also mapped Lount Twp. in detail showing for the first time the existence of mappable units in the Parry Sound area. Hewitt (1967) was able to accurately identify the complexity of petrographic units and correlate some of these in a reconnaissance mapping program.

Greater interest in resolving the geological complexity of the area was kindled by Lumbers who was progressively mapping Grenville terranes in Ontario from the Grenville Front to the south Lumbers (1975) and by Wynne-Edwards (1972). Wynne-Edwards suggested the first interpretive framework for the Central Gneiss Belt of the Grenville Structural Province. The controversy which arose from Wynne-Edwards "Sea of Gneisses" lead a profusion of other researchers into the area who have conducted specific detailed and reconnaissance mapping and synoptic studies. Since 1972 M. W. Schwerdtner and students have concentrated on resolving many of the structural geology problems of the area contributing a great amount to the understanding of the geology of the Central Gneiss Belt.

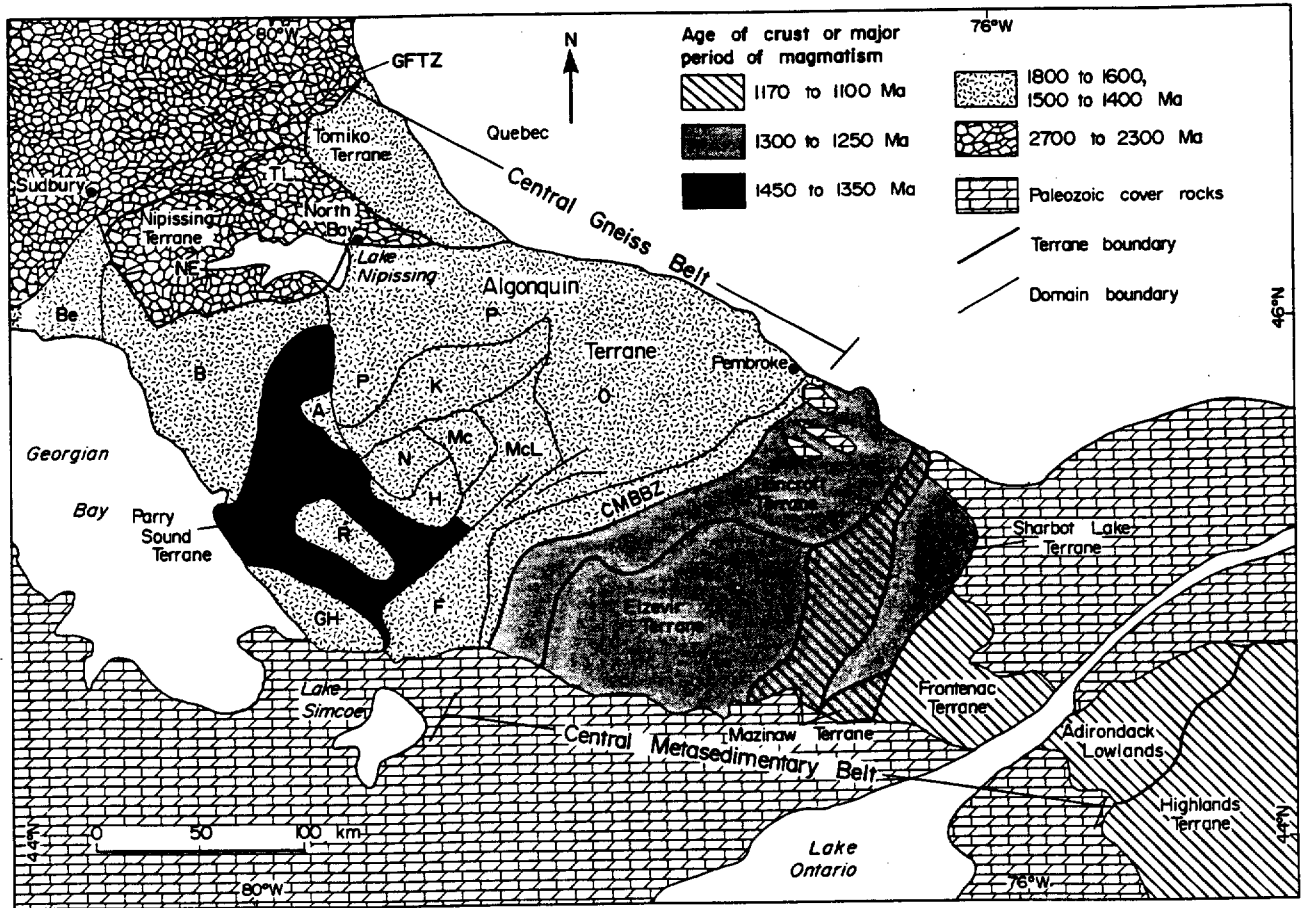
The framework for all current work in the area was provided by Davidson et al. (1982). This has been modified subsequently by Davidson and other workers, and Easton (1992) has synthesized this work eloquently. The tectonic terranes and domains separated by shear zones have become imbedded in the literature.

REGIONAL GEOLOGY

The Muskoka-Parry Sound region is part of the Ontario segment of the Central Gneiss Belt in the Grenville Structural Province (Wynne-Edwards 1972). No detailed geological map of the whole region, which was included in a recent major project on the Ontario Gneiss Segment by the Geological Survey of Canada, has been published to date.

Recent mapping by Davidson et al. (1982) has led to a tectonic model in which the thickening of Proterozoic crust is accomplished by deep-level thrusting and associated reverse ductile

shearing (Davidson 1984a, 1984b). According to this model, major crustal slices (called domains and sub-domains, see Fig.3) have been translated over large distances toward the margin of the Superior Structural Province.



Abbreviations					
A	Ahmic Domain	GH	Go Home Domain	NE	Nepewassi Domain
B	Britt Domain	H	Huntsville Domain	O	Opeongo Domain
Be	Beaverstone Domain	K	Kiosk Domain	P	Powassan Domain
CMBBZ	Central Metasedimentary Belt	Mc	McCraney Domain	PS	Parry Sound Domain
	Boundary Zone	MCL	McClintock Domain	R	Rosseau Domain
F	Fishog Domain	MR	Moon River Domain	S	Sequin Domain
GFTZ	Grenville Front Tectonic Zone	N	Novar Domain	TL	Tilden Lake Domain

Figure 3: Lithotectonic terranes, domains Central Gneiss Belt (Easton, 1992)

This view has been further modified by some more local studies by Hanmer (1988) and Schwerdtner (1987). According to Hanmer the southeast to northwest thrusting was initiated at approximately 1160 Ma and continued for 100 Ma. However he claims that subordinate northeastward thrusting was coeval and that late synmetamorphic extensional shears cut these major thrusts and thrust sheets but are in turn cut by late movement on the thrusts. He further alludes to the comparison to the structural style of the

Central Gneiss Belt and the Himalayas suggesting that the Grenville exposes the architecture and processes presently active in the roots of younger mountain belts. Schwerdtner's observations agree with Hanmer's respecting a northeasterly component to deformation which he invokes to explain north-south buckle folds. However, Schwerdtner observed that not all foliations can be explained by the thrust model and that three sets of folding are superimposed and cross the domain boundaries. He claims that all the structural facts can be explained without large differential translations of crustal slices and most discordances in the regional gneissosity could have been created by décollement and repeated buckling.

Easton (1992) synthesized all previous studies stating that, "Recorded within the Grenville Province is the tectonic evolution of the southeast margin of Laurentia during the Mesoproterozoic. The Grenville Orogeny has overprinted the structural trends and metamorphic effects of the Archean and Paleoproterozoic geological province of Laurentia. It is now generally accepted that this orogenic event or events involved northwest directed thrusting and imbrication of the entire crust, presumably as a result of a terminal collision at about 1100 Ma. with a continental landmass somewhere to the southeast.

The Central Gneiss Belt consists mainly of upper amphibolite and local granulite facies, quartzo-feldspathic gneisses, chiefly of igneous origin with subordinate paragneiss. Distinctive lithotectonic terranes, some further subdivided into domains, have been identified within the Central Gneiss Belt. The terranes and domains are distinguished by differences in rock types, internal structure, metamorphic grade, geological history, and geophysical signature and are bounded by zones of intensely deformed rocks traceable for tens of kilometres."

The Algonquin terrane consists of 1800 to 1600 Ma gneisses intruded by 1500 to 1400 Ma granitic and monzonitic plutons that may represent an extension of the Eastern Granite-Rhyolite Province. Although imbricated by later thrusting the Algonquin terrane is probably parautochthonous. The Britt and Rosseau domains are part of the Algonquin terrane.

The Britt Domain (Figure 4) comprises a complexly deformed and metamorphosed series of rocks. Although some of the rocks are metasedimentary in origin the preponderance of the rocks were originally plutonic, but have been changed by dynamic and thermal metamorphism. The final stages of this metamorphism appear to have annealed the rock into a compact and durable material having some relict textures and many overlapping and lively features. Dips of these rocks are generally flat to 10° to the southeast. Some units are entirely composed of isoclinal sheath folds whereas other units are evidently deformed megacrystic granitic plutons.

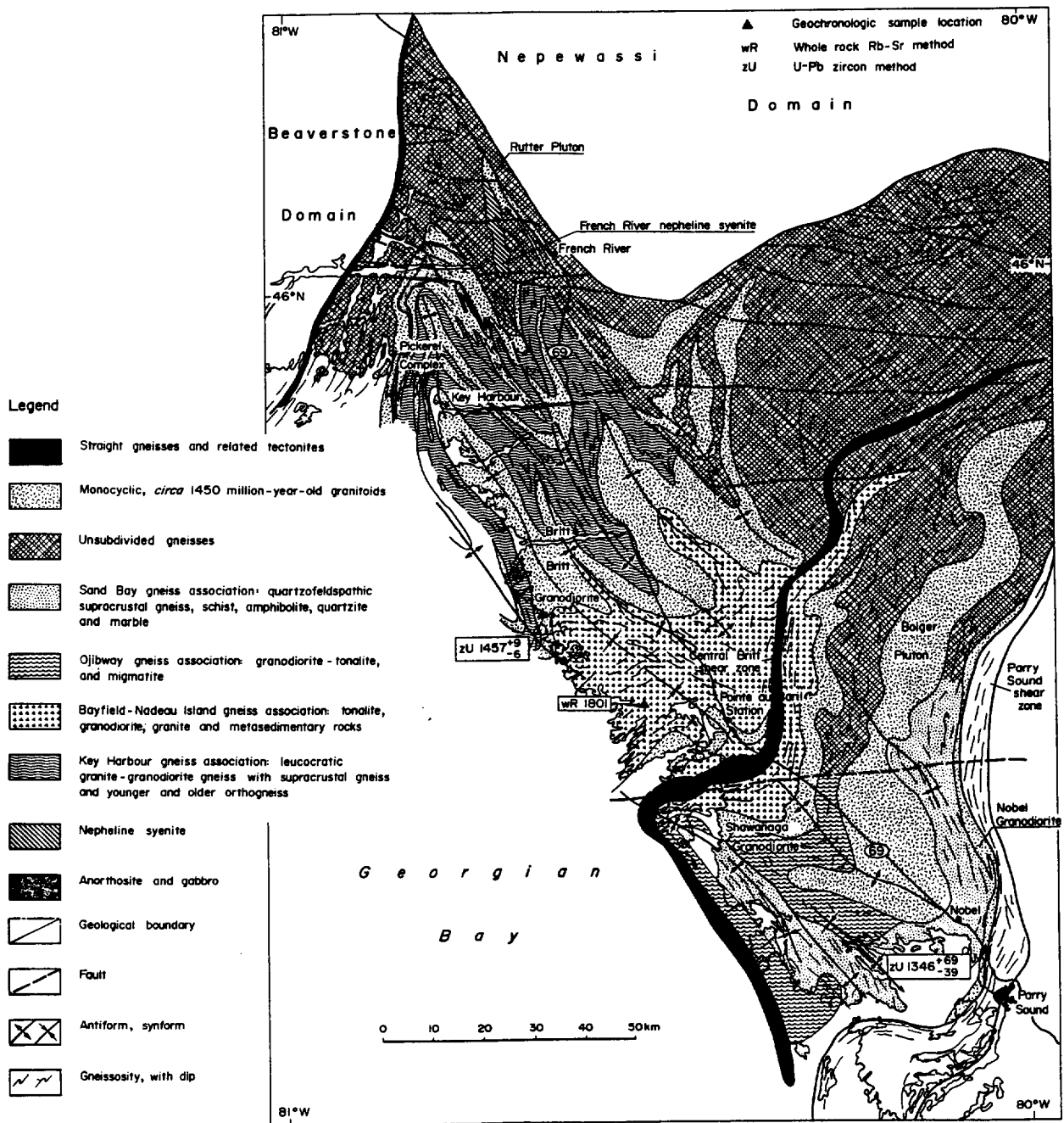


Figure 4: Geology of the Britt Domain (Easton (1992))

The Parry Sound and Moon River domains consist chiefly of juvenile crust 1450 to 1350 Ma in age and are parallochthonous. The Parry Sound domain rocks comprise dense high metamorphic facies rocks (amphibolite and granulite facies) which are emergent on the other domains. The rocks in the Parry Sound domain are dominantly amphibolite and pyroxenite gneisses which strike to the north east and dip 20°-60° to the southeast (at a much steeper angle than the postulated shear couple accompanying thrusting). The bedrock

largely comprises veined, banded and homogeneous pink and grey migmatitic gneisses produced by injection and granitization of metamorphic gneisses of various types. The rocks are mainly of upper amphibolite and granulite metamorphic facies. Hypersthene-bearing charnokitic gneisses are present in the area. The origin of much of the amphibolite gneiss is obscure. Some which is associated with bands of marble is thought to be paragneiss whereas some is proximal to large bodies of gabbro and anorthosite and thought to be orthogneiss. Trusler and Villard (1980) found evidence that some of the mafic and felsic rocks are of volcanic origin. The high metamorphic grade of the rocks is attributed to a deep seated origin possibly involving underplating at an early stage.

The Bolger pluton in the Britt domain is dated at circa 1450 Ma and underlies the Black Lake, Woods Road and Shebeshekong Lake properties (Figure 4). The Dillon Road property is underlain by both the Bolger pluton and the Ojibway gneiss association. The Killbear Point and Jackknife Harbour properties are underlain by the Sand Bay gneiss association. The Grundy Lake property is underlain by an unnamed V-shaped pluton believed to be circa 1450 Ma.

Comparable regional maps do not cover areas about the Turtle Lake property and the Burnt Lake property which are situated in the Rosseau and the Moon River domains respectively.

DESCRIPTION OF ROCK UNITS

Since no comprehensive, detailed geological maps have been produced for the Parry Sound area, none of the previous workers have made an attempt to construct a table of rock units. None of the rock units have been correlated across domain boundaries. Trusler and Villard made an attempt to derive a Table of Rock units for the Parry Sound -Sans Souci area in 1980 and some of that information is used here to produce Table 2. These Formation names are not used in the mapping since these have been inadequately defined for inclusion in the literature. However, the area mapped by Trusler and Villard covers parts of the Britt, Parry Sound and Moon River domains and the lithologic variety is well represented.

The Sans Souci-Killbear Point Group correlates well with the Sand Bay gneiss association of Figure 4 which underlies the Killbear Point and Jackknife Harbour properties. Similar rocks which are younger underlie the Burnt Lake property. The Ojibway gneiss association which underlies part of the Dillon Road property correlates with the tonalite in Table 2. The remaining sites are megacrystic granites or migmatitic derivatives of megacrystic granites classified under quartz monzonite in Table 2.

The rocks on the property have been subdivided into mappable units as follows: megacrystic granite and tonalite.

The megacrystic granite is a moderately strained to gneissic pink and grey rock containing relict pink orthoclase phenocrysts from 2 to 5 cm in original diameter which have been stretched to form a prominent lineation. Rarely this lineation is also crenulated. The orthoclase comprises 20-50% of the rock. Hornblende at between 15 and 20%, quartz at 10-20% and plagioclase are also present. The lineation rakes SSE at a gentle angle. Small bolts of fine grained syntectonic or pretectonic felsite are also present and lineated similar to the phenocrysts.

The tonalite is generally a gneissic, medium to coarse grained, thinly to thickly layered rock generally variegated light grey and greyish black and containing 20 to 40% mafic minerals overall with amphibole being the dominant mafic mineral. Usually approximately 10%, but occasionally up to 25% of the rock unit comprises introduced or anatexitic, syntectonic quartzo-feldspathic material.

TABLE 2: TABLE OF ROCK UNITS FOR THE PARRY SOUND AREA

PHANEROZOIC

CENOZOIC

Quaternary

Recent

swamp, lake, and stream deposits

Pleistocene

bouldery, cobbly and silty sand till, silt, sand, pebble
gravel, and cobble gravel

_____Unconformity (possible regolith)_____

PALAEOZOIC

Cambro - Ordovician

Calcareous fracture fillings

_____Unconformity_____

PRECAMBRIAN

Late Precambrian

Late Breccias- thin mylonites; quartz veined dilatant
breccias of unknown origin

Late Pegmatite

massive granite pegmatite dikes

_____Intrusive Contact_____

High Rank Regional Metamorphism

Middle to Late Precambrian

Tectonites

Mylonite: very fine grained massive to thinly to thickly
laminated rock frequently exhibiting compositional and
graded layering and containing rotated porphyroclasts;
generally marginal to schistose and gneissic rocks; matrix
minerals generally are siliceous and comprise quartz,
microperthite, biotite and/or amphibole and/or pyroxene

Tectonic Breccia: brecciated rock comprising lithic clasts
within a fine to coarse grained schistose to gneissic
cataclastic matrix with quartz, perthitic microcline,
biotite and/or amphibole and/or pyroxene

_____Sheared Contact_____

Syenite and Monzonite Suite Intrusive Rocks

pink to grey and green, massive to porphyritic to lineated
and gneissic biotite, hornblende-biotite and hornblende
syenite and monzonite, charnokite and mangerite.

_____Intrusive Contact_____

Anorthosite Suite Intrusive Rocks

Anorthosite- massive to gneissic labradorite anorthosite, andesine anorthosite with up to 10% pyroxene, and gabbroic anorthosite

_____Intrusive Contact_____

Gabbro- massive to gneissic fine to coarse grained, black pyroxenite, anorthositic gabbro and gabbro

_____Intrusive Contact_____

Tonalite- massive to strongly lineated and gneissic light to dark grey pyroxene tonalite and diorite with minor gabbro

_____Intrusive Contact_____

Quartz Monzonite - Syenite Suite Intrusive Rocks

massive to gneissic medium to coarse grained biotite quartz monzonite, pyroxene quartz monzonite and foliated granite pegmatite, pyroxene syenite and foliated syenite pegmatite; megacrystic granite and derivatives.

_____Intrusive Contact_____

Parry Sound Group Metavolcanic Rocks¹

Spider Lake Formation¹: intermediate to felsic rocks, medium to coarse grained generally porphyritic, massive to gneissic rocks containing quartz, feldspar, almandite, amphibole and pyroxene; some fragmental units present.

Parry Sound Formation¹: mafic, medium to coarse grained, schistose to gneissic, pyroxene-feldspar and amphibole-feldspar bearing massive and fragmental rock

Sans Souci - Killbear Point Group Metasedimentary Rocks¹

Unsubdivided: thinly laminated to extremely thickly layered; interlayered medium to coarse grained schists and gneisses; lower amphibolite to granulite facies; intercalated with metavolcanics above

Killbear Point Formation¹: thinly to extremely thickly layered, schistose and gneissic medium to coarse grained biotite, quartz, feldspar rocks

Bateau Island Formation¹: very thickly layered, medium to coarse grained felsic gneiss with mafic biotite and amphibole rich parting planes; variously interpreted as an arkose or granite; cataclastic textures.

¹ The formation names have not been accepted and criteria for introduction of these names into the literature have not been fulfilled. Identification as to origin is tentative

PROPERTY GEOLOGY

The property principally is underlain by felsic rocks of unusual character of Middle to Late Precambrian age. The property is underlain by a portion of a large megacrystic granite pluton which has undergone relatively uniform simple strain resulting in stretched phenocrysts and amphibolite facies metamorphism. The property is situated in the Rosseau domain for which no reasonably detailed geological map defining the unit which underlies the property has been published.

The individual rock units were described under the heading DESCRIPTION OF ROCK UNITS on Page 9 of this report. The megacrystic granite has a medium to coarse grained, hypidiomorphic granular matrix of quartz, plagioclase, orthoclase and hornblende. The phenocrysts vary from very rare, original, relict orthoclase eyes with sugary grained rims in the least strained rocks to pink sugary aggregates preserving the identity of the original orthoclase.

Although the tonalite also has a cataclastic texture some of the original compositional banding or layering appears to be relict.

Both rock units may be suitable for quarrying although limited in outcrop extent having suitable joint spacing.

Gneissic foliations were measured at each station where possible. Despite some exceptions, the general pattern displayed is of a relatively structurally uniform sequence. The rock units both have a strong gneissic foliation. In the tonalite the foliation is largely imparted by compositional layering, but in the megacrystic granite the gneissic layering is manifested by bands of stretched phenocrysts and to some extent differential cataclasis. Lineations are well developed in the megacrystic granite exhibited by both rolling and stretching of syntectonic felsic stringers and stretching of orthoclase phenocrysts. The foliations trend east to east-northeast and dip 10° - 20° to the north. The lineations plunge to the north-northwest at 10° - 20° ..

The sub-horizontal joint spacing, based on 23 data, averages less than two metres and the vertical joint spacing, based on 79 data, averages approximately five metres. The statistical plot of vertical joints, based on 85 data, exhibits strong polarity about the main joints. thirty-six per cent of the data cluster about an azimuth of 145° and twenty-nine per cent of the data cluster about an azimuth of 80° .

POTENTIAL DIMENSION STONE SITES

The large outcrop centred on the common boundary of the southern portions of lots 10 and 11, concession 1, Christie Twp. is a megacrystic granite exhibiting stretched and recrystallized rapakivi textures. Vertical joints average over 5 metres in separation, and the sub-horizontal joint exceeds 2 metres. The hill that this outcrop is on rises 55 metres above the surrounding area (Photo 1). A cliff face on the south side of the hill provides access for the purpose of initial quarry development. The favourable area of the outcrop is over 500 metres long and 300 metres wide so that the resource initially identified exceeds 10 millions of tonnes. Site planning and detailed geological mapping are warranted, and drilling will be required to confirm reserves.

Some attractive laminated tonalite was noted during the mapping program. This material should be sampled, slabbed and polished for initial evaluation.



Photo 1: Megacrystic granite outcrop on Turtle Lake property showing the relative absence of vertical joints and the homogeneity of the rock; also note that this hill stands 55 metres above surrounding area.

TABLE 3: RESULTS OF SAMPLE POLISHING

<u>Sample No.</u>	<u>Type of Sample</u>	<u>Rock Type</u>	<u>Test Results</u>
1993-3	Polished sample supplied by Chris Marmont and Dave Villard, both formerly of the Ministry of Northern Development and Mines, collected as part of their dimension stone project.	Megacrystic granite with stretched rapakivi texture	Granoblastic, polygonal-interlobate; Groundmass seriate: 0.1-2.0 mm. Garnet poikiloblasts range up to 4 mm; hornblende porphyroblasts up to 5 mm, feldspar porphyroclasts up to 1 cm.; plagioclase(35%), microcline(25%), quartz(20%), hornblende(15%), biotite(3%), garnet(3%), magnetite, apatite, sphene, zircon. The rock produces an excellent polish with minor plucking. (Marmont, 1993)

CONCLUSIONS

The Britt domain comprises a complexly deformed and metamorphosed series of rocks. Although some of the rocks are metasedimentary in origin the preponderance of the rocks were originally plutonic, but have been changed by dynamic and thermal metamorphism. The final stages of this metamorphism appear to have annealed the rock into a compact and durable material having some relict textures and many overlapping and lively features.

Nine dimension stone prospects were staked in the Parry Sound area, and all have been mapped geologically. Many of the rocks underlying these properties are migmatitic derivatives of granitic intrusions and present a great variety of textures. In some cases it is evident that the paleosome constituent was megacrystic and subsequent neosome phases have distinct compositions and fabrics. The sites were chosen for their attractiveness and the apparent availability of accessible large blocks.

The property is underlain by an unidentified circa 1450 Ma megacrystic granite pluton within the Rosseau domain. A strained megacrystic granite underlies the southern two thirds of the property and a tonalite gneiss underlies the northern portion. The rocks strike ENE and dip very gently to the north. The megacrystic granite contains approximately 20% amphiboles and is attractive. Site planning, geological mapping, and drilling of the large megacrystic granite outcrop in the centre of the property are warranted. Dimension stone resources exceed 10,000,000 tonnes.

RECOMMENDATIONS

1. It is recommended that a site plan be devised for the large outcrop in the middle of the Turtle Lake property involving detailed mapping and limited core drilling.
2. The laminated tonalite should be sampled slabbed and polished in order to evaluate its suitability as a dimension stone.

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Report of Work Conducted After Recording Claim

Mining Act

Transaction Number
W9490.00006

Res. No. Sudbury

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used for correspondence. Questions about this collection should be directed to the Provincial Manager, Mining Lands, Ministry of Northern Development and Mines, Fourth Floor, 159 Cedar Street, Sudbury, Ontario, P3E 6A5, telephone (705) 670-7264.

2.15283

- Instructions:**
- Please type or print and submit in duplicate.
 - Refer to the Mining Act and Regulations for req Recorder.
 - A separate copy of this form must be completed
 - Technical reports and maps must accompany th
 - A sketch, showing the claims the work is assign



31E05SE0002 2.15283 CHRISTIE

900

Recorded Holder(s) <i>James R Truster</i>		Client No. <i>203403</i>
Address <i>143 Temperance St. Aurora Ont L4G 2R5</i>		Telephone No. <i>(905) 727-5084</i>
Mining Division <i>Southern Ontario</i>	Township/Area <i>CHRISTIE</i>	M or G Plan No. <i>M67</i>
Dates Work Performed From: <i>Sept 12, 1993</i>	To: <i>Sept 16, 1993</i>	

Work Performed (Check One Work Group Only)

Work Group	Type
<input checked="" type="checkbox"/> Geotechnical Survey	<i>Geological Survey</i>
<input type="checkbox"/> Physical Work, Including Drilling	
<input type="checkbox"/> Rehabilitation	
<input type="checkbox"/> Other Authorized Work	
<input type="checkbox"/> Assays	
<input type="checkbox"/> Assignment from Reserve	

4714
RECEIVED
JAN 27 1994
MINING LANDS BRANCH

Total Assessment Work Claimed on the Attached Statement of Costs \$ *3,792,387*

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 R Truster</i>	<i>143 Temperance St Aurora, Ont L4G 2R5</i>

(attach a schedule 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 11, 1994</i>	Recorded Holder or Agent (Signature) <i>James R Truster</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 R Truster 143 Temperance St Aurora Ont L4G 2R5</i>		
Telephone No. <i>905 727 5084</i>	Date <i>Jan 11, 1994</i>	Certified By (Signature) <i>James R Truster</i>

For Office Use Only

Total Value Cr. Recorded <i>\$ 3,787</i>	Date Recorded <i>Jan 11/94</i>	Mining Recorder <i>[Signature]</i>	Received Stamp RECEIVED JAN 11 1994 AM 7,8,9,10,11,12,13,3,4,5,6 P/A
	Deemed Approval Date <i>April 11/94</i>	Date Approved <i>[Signature]</i>	
	Date Notice for Amendments Sent		



Ministry of Northern Development and Mines

M. ère du Développement du Nord et des mines

Turtle

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
W9490.00006

15283

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		
	Field Supervision Supervision sur le terrain		
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert-conseil	Type Geological Mapping & Preparation 4 days @ 400/day	1600.	
	Drafting 3.5 days @ 150/day	525.	
	Report writing 2.5 days @ 400/day	1000	3,125
Supplies Used Fournitures utilisées	Type field consumables	7.31	
	maps & photos	327.96	
	film & batteries	40.97	
	stationery & misc	61.58	437.82
Equipment Rental Location de matériel	Type		
			3562.82
Total Direct Costs Total des coûts directs			3,567.9

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 personal car		
	58.3 km @ 3.00/km	174.90	
	parking	1.88	
			176.78
Food and Lodging Nourriture et hébergement	motels & meals		47.80
Mobilization and Demobilization Mobilisation et démobilitation			
Sub Total of Indirect Costs Total partiel des coûts indirects			224.58
Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excédant pas 20 % des coûts directs)			224.58
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)			3792.48
			3787.40

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.

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 [Signature] Date Jan 11, 1997



Ontario

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Geoscience Approvals Office
933 Ramsey Lake Rd., 6th Flr
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

Our File: 2.15283
Transaction #: W9490.00006

June 21, 1994

Mining Recorder
Ministry of Northern Development
and Mines
Sudbury

Dear Mr. Denomme:

RE: Approval of Notice of Reduction issued for assessment work reported on mining claims 1191212 in Christie Township.

The assessment work credits as outlined in the Notice of Reduction dated April 11, 1994 have been approved as of May 26, 1994. Please see the attached assessment work credit form.

If you require additional information please contact Dale Messenger at 670-5858.

Yours sincerely,

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

DEM/vni

cc Assessment Files Office
Sudbury

cc Res Geo
Sudbury

ASSESSMENT WORK CREDIT FORM

FILE NUMBER: 2.15283

DATE: May 26, 1994

TRANSACTION NUMBER: W9490.00006

RECORDED HOLDER: James Trusler

TOWNSHIP: Christie

CLIENT NUMBER: 203403

Level of Assessment Credit to be approved \$3,137.00

CLAIM NUMBER	VALUE OF ASSESSMENT WORK DONE ON THIS CLAIM	VALUE APPLIED TO THIS CLAIM	RESERVE
1191212	\$1600.00	\$1600.00	
1191218	1537.00	1537.00	



Ontario

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Geoscience Approvals Office
933 Ramsey Lake Rd., 6th Flr
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

Our File: 2.15283
Transaction #: W9490.00006

June 21, 1994

James R. Trusler
143 Temperance Street
Aurora, Ontario
L4G 2R5

Dear Mr. Trusler:

**RE: Approval of Notice of Reduction issued on mining claims 1191212 et al
in Christie Township.**

The assessment work credits as outlined in the notice of reduction dated
April 11, 1994 have been approved as of **May 26, 1994**. Please see the
attached assessment credit form.

If you require additional information please contact Dale Messenger at
670-5858.

Yours sincerely,

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

DEM/vni
Enclosures:



Ontario

File

May 26/94

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Geoscience Approvals Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

Our File: 2.15283
Transaction #: W9490.00006

April 11, 1994

James R. Trusler
143 Temperance Street
Aurora, Ontario
L4G 2R5

Dear Sir:

Subject: NOTICE OF REDUCTION, SUBSECTION 6(3) MINING ACT REGULATIONS.

An examination of your Work Report indicates that the requirements of the Mining Act Regulations have not been fully met. This notice will outline the reduction in the Assessment Credits for your submission.

Note that the 90 day deemed approval provisions, Sub Section 6(5) of the Mining Act Regulations, are no longer in effect for this Work Report.

This work will be approved, as outlined in the attached Assessment Work Credit form, on **MAY 26, 1994**, which is 45 days from the date of this notice.

Please note that the Mining Lands Branch cannot issue extensions on this 45 day period.

REDUCTION OF WORK

The Minister may reject or reduce Assessment Work for a number of reasons, as outlined in subsection 6(2) of the Mining Act Regulations. This work is being reduced under the following subsection:

- subsection 6(2)(e): the cost claimed for assessment work credit exceeds the industry standard for similar work.

.../2

After reviewing the 8 Geological submissions for work done in the Parry Sound area we have determined that the costs claimed for assessment credit are excessive. We are therefore reducing the assessment credit allowed for these submissions.

We are taking this action because in many instances the information (text, legends) contained in the reports is identical. This we feel would have substantially reduced your preparation, drafting and report writing time.

Turtle Lake Property

Total assessment credit claimed in these categories: **\$2325.00**

Total assessment credit allowed:

Preparation reduced from 2 to 1.5 days @ \$400.00/day	= \$ 600.00
Drafting reduced from 3.5 to 2.5 days @ \$150.00/day	= \$ 375.00
Report writing reduced from 2.5 to 1.75 days @ \$400.00/day	= \$ <u>700.00</u>
	\$1675.00

Direct Costs

Preparation, Drafting, Report writing	-	\$1675.00
Field Work	-	\$ 800.00
Supplies	-	\$ <u>437.82</u>
		\$2912.82

Total value of Assessment Credit allowed: **\$3137.00**

EFFECT ON MINING CLAIMS

The enclosed Assessment Work Credit Form outlines the work credits which will be reduced, and the claims on which the reduction will occur.

OPTIONS, REDUCTION OF WORK


If the anniversary date for the claims has not passed, a number of options are available. Contact the Mining Recorder to discuss these options.

If you have questions regarding this matter or any other assessment work related queries, please contact Dale Messenger at (705) 670-5858.

Yours sincerely,



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



DEM/lis

Enclosures:

cc: Mining Recorder
Sudbury, Ontario



Ontario

April 8/94

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Geoscience Approvals Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

Our Files: 2.15281 to 285
Transaction #s: W9490.00005
to 00012

March 9, 1994

James R. Trusler
143 Temperance Street
Aurora, Ontario
L4G 2R5

Dear Sir:

**RE: GEOLOGICAL SURVEYS SUBMITTED FOR ASSESSMENT WORK ON MINING CLAIMS
1151137 ET AL. IN THE PARRY SOUND AREA.**

With respect to the above mentioned, Geological submissions and the 8 Report of Work-Statement of Cost Forms attached to same.

In order that we may verify expenses for supplies used in the Direct Costs Section of the Statement of Costs Form, please forward to this office receipts for the expenditures of field consumables, maps and photos, film and batteries and stationary and miscellaneous supplies.

In order to assist us in providing prompt service, please provide the said receipts within 30 days (**April 8, 1994**) of the date of this letter.

If you have any questions concerning this matter or any other assessment work related queries, please contact Dale Messenger at (705) 670-5858.

Yours sincerely,

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

DEM/jl
Enclosures:

cc: Recording Office
Toronto, Ontario

REQUIREMENTS OF GEOTECHNICAL SUBMISSIONS FOR ASSESSMENT CREDIT

File No. 2.15283

Report of Work No.

W9490.00006

Type of Survey *GEOL*
Township or Area
CHRISTIE

Report

1. ✓ Typewritten, suitable for reproduction.
2. ✓ Table of Contents.
3. ✓ Identify mining claims and names and addresses of holders.
4. ✓ Location and means of access.
5. ✓ Key map showing claims in relation to topographic features, township boundaries, established survey lines.
6. ✓ Author's signature and date of completion.
7. ✓ Name of person/s who supervised survey.
8. ✓ Dates during which survey work was performed.
9. ✓ Summary of exploration and development work performed on claims.
10. ✓ All assays and analyses with appropriate certificates.
11. ✓ Statement of qualifications.
12. ✓ Interpretation of anomalous values and recommendation for further exploration.
14. ✓ List of references or bibliography.

Maps

1. ✓ Scale between 1:10 and 1:5000 (or in the case of a regional survey, between 1:500 and 1:250,000, utilising a graphic or bar scale).
2. ✓ North arrow indicating whether bearing is astronomic or magnetic.
3. ✓ Shows lakes, rivers and other notable topographic features including railways, roads, trails, powerlines, and buildings.
4. ✓ Shows claim posts and boundary lines, township boundary lines, lot and concession lines, grid lines, traverse lines.
5. ✓ Survey stations and markers in relation to topographic features.
6. ✓ Claim numbers of all claims covered by the survey.
7. ✓ Printed name of author of accompanying report.

REQUIREMENTS OF GEOLOGICAL SURVEY REPORTS AND MAPS

File No. 2.15283
Report of Work No. W9490.00006
Township or Area
CHRISTIE

Reports

1. Contain a table of rock types, lithologies and formations with their descriptions and illustrated on any accompanying maps and illustrations.
2. Describe the regional geology.
3. Give descriptions of significant geological structures.
4. Identify the character, attitudes and dimensions of any veins, mineralisation and alteration found during the survey.
5. Identify the sources of geological data contained in the report if obtained from sources other than the survey being reported.

Maps

1. Contain a table of rock types, lithologies and formations, with a descriptive list of the symbols used.
2. Show outcrops designated by a letter or number corresponding to the rock type, lithologies and formations.
3. Show the character of the overburden including boulder, clay, gravel or sand, and the distribution of swamp, muskeg and forest cover areas along all lines traversed, particularly where no outcrop is found and identified.
4. Show all observed and interpreted folds, schistosity, actual and indicated faults, attitudes of flows and stratified rocks, including strikes and dips, and the direction in which they face, locations and attitudes of actual and interpreted contacts and other structural features.
5. Show zones of shearing, alteration or mineralisation and veins.
6. Show the location of trenches, test pits, shafts and adits.
7. Show the location, direction and dip of drill holes.

798/20 @ 3.5 days (approx. dew
time shown)
= \$2618

V

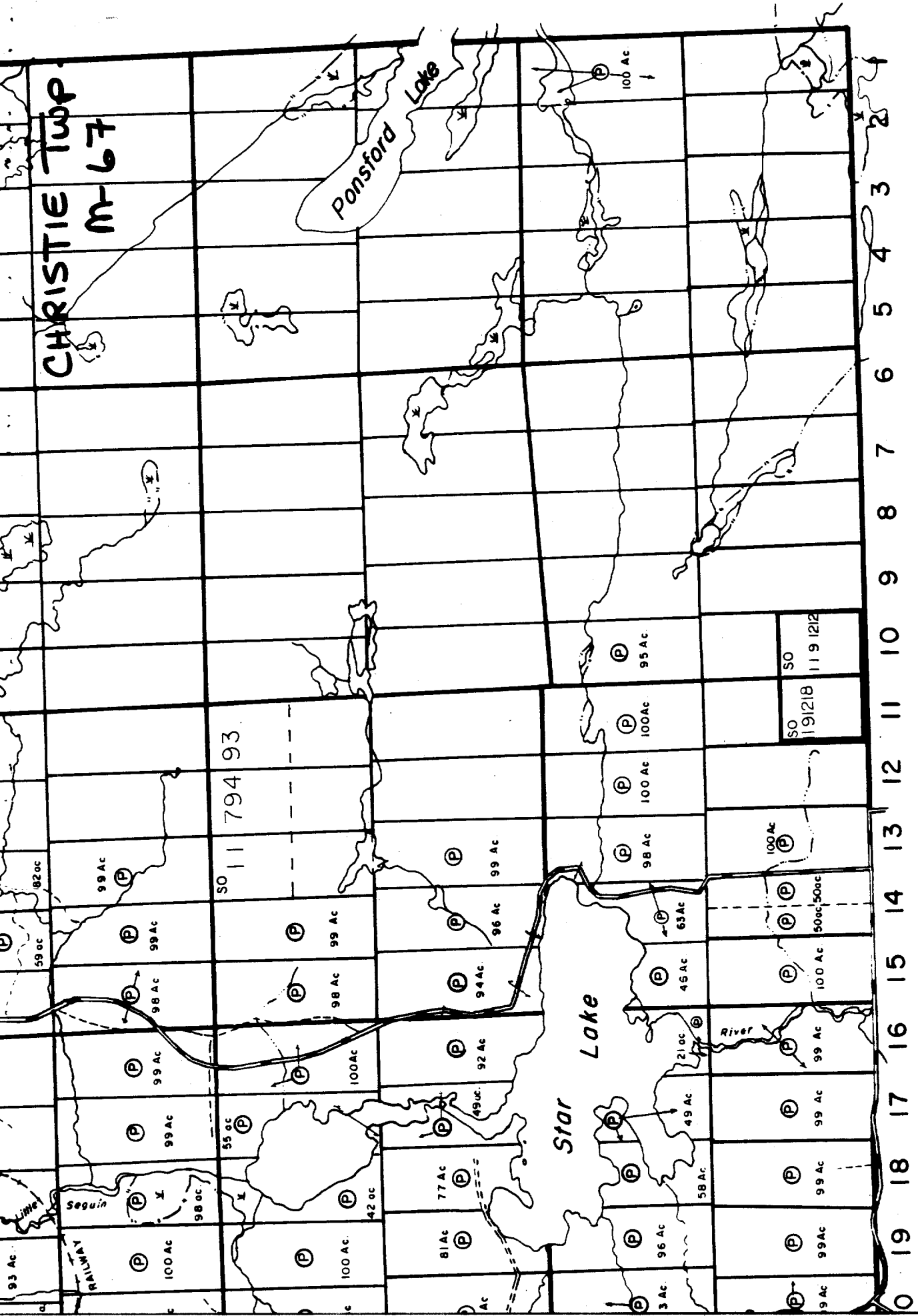
IV

III

II

I

CHRISTIE TWP.
M-67



Humphry Twp. (M.181)

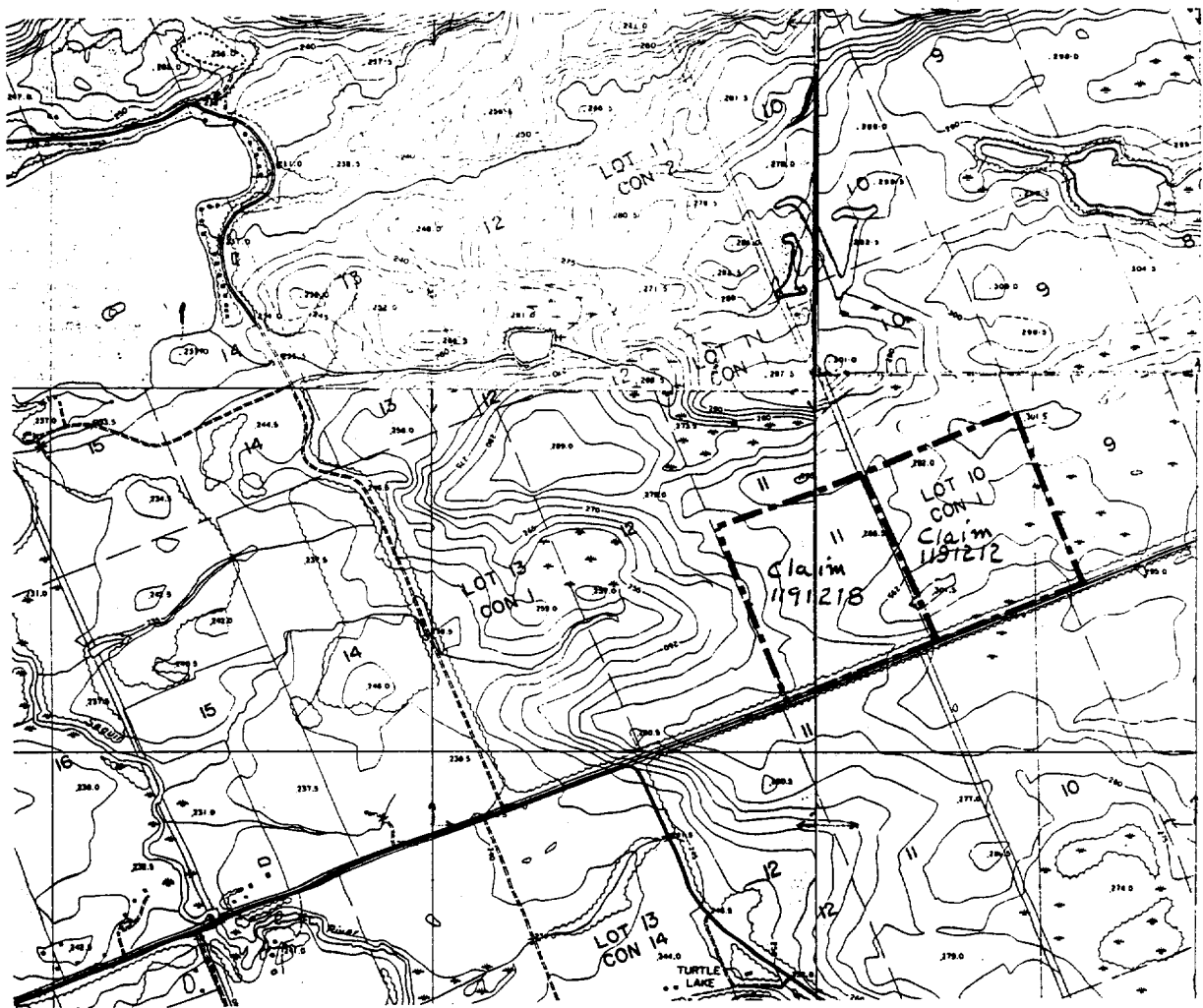
PROPERTY

The Turtle Lake property comprises approximately 100 acres and is more particularly described in TABLE 1 (Figure 2).

Assessment will be filed for the current work on the claims, and it is anticipated, as a result, that sufficient credits should be available to keep the entire claim group in good standing for some five years from the date of submission.

TABLE 1: TURTLE LAKE PROPERTY

<u>Claim No</u>	<u>Township</u>	<u>Lot</u>	<u>Conc.</u>	<u>Area</u>	<u>Recording Date</u>
1191212	Christie	S/2 10	I	50 ac	May 4, 1993
1191218	Christie	S/2 11	I	50 ac	Sept. 7+, 1993



Scale: 1:20,000
Figure 2: Property Map

Jackknife Harbour Property: Claims SO1191213, 1191214.

Preparation: (2½ days)

Field: June 3, Oct. 28, 29, 1993 (3 days)

Drafting: Sept. 29, 30, Oct. 1, 4-7, 22, 30, Nov. 2, 1993
(4½ days)

Reporting: Sept. 20-24, 27, Oct. 30, 31, Nov. 1, Dec. 16-24, 26-30, 1993 (4 days)

Shebeshekong Lake Property: Claims SO1191215.

Preparation: (2½ days)

Field: Aug. 29, Sept. 2, 1993 (2 days)

Drafting: Sept. 29, 30, Oct. 1, 4-7, 22, Dec. 5, 6, 10, 1993
(4 days)

Reporting: Sept. 20-24, 27, Nov. 1, Dec. 16-24, 26-30, 1993
(2½ days)

*** Turtle Lake Property: Claims SO1191212, 1191218.**

Preparation: (2 days)

Field: Sept. 13, 14, 16, 1993 (2½ days)

Drafting: Sept. 29, 30, Oct. 1, 4-7, 20-23, 1993 (3½ days)

Reporting: Sept. 20-24, 27, Oct. 25, Nov. 1, Dec. 16-24, 26-30, 1993 (2½ days)

Woods Road Property: Claims SO1151130, 1151131, 1151132, 1151133 and 1151217.

Preparation: (5½ days)

Field: May 11, 12, July 3, 4, 5, 6, 13, Aug. 23, 24, 25, 26, 27, 28, 1993
(12½ days)

Drafting: Aug. 19, 20, Sept. 29, 30, Oct. 1, 4-8, 12, 22, Nov. 8-13, Dec. 11, 12, 1993 (12 days)

Reporting: Sept. 3, 10, 20-24, 27, Nov. 1, Dec. 16-24, 26-31, 1993
(6 days)

Note: Geological mapping on claims SO1151130-1151133 of the Woods Road property commenced in May prior to the staking and recording of claim SO1151217. This latter claim was recorded on July 22, 1993. Mapping of this claim and the adjoining claims was done in August, 1993 after recording claim SO1151217. All of this work is being reported on one "Report of Work Conducted" form.

CHRISTIE

DISTRICT OF PARRY SOUND

SOUTHERN ONTARIO MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	⊙
CROWN LAND SALE	⊙
LEASES	⊙
LOCATED LAND	⊙
LICENSE OF OCCUPATION	⊙
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	—
IMPROVED ROADS	—
KING'S HIGHWAYS	—
RAILWAYS	—
POWER LINES	—
MARSH OR MUSKES	—
MINES	—
CANCELLED	—

NOTES

This Map Is Not To Be Used FOR SURVEY PURPOSES

Lot And Concession Lines Shown Hereon Are Projected From The Best Information Available But Their True Position Is Not Guaranteed. For Official Survey Purposes Consult The Original Survey Plans And Field Notes Of Records In The Dept Of Lands & Forests

400' Surface Rights Reservation Around All Lakes And Rivers.

The Acreages Shown Are The Amount That Were Patented And Do Not Necessarily Represent The True Surveyed Area Of The Parcel

Parcels Indicated Thus
● Patented Mining & Surface Rights
⊙ Surface Rights Only.

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

DATE OF ISSUE

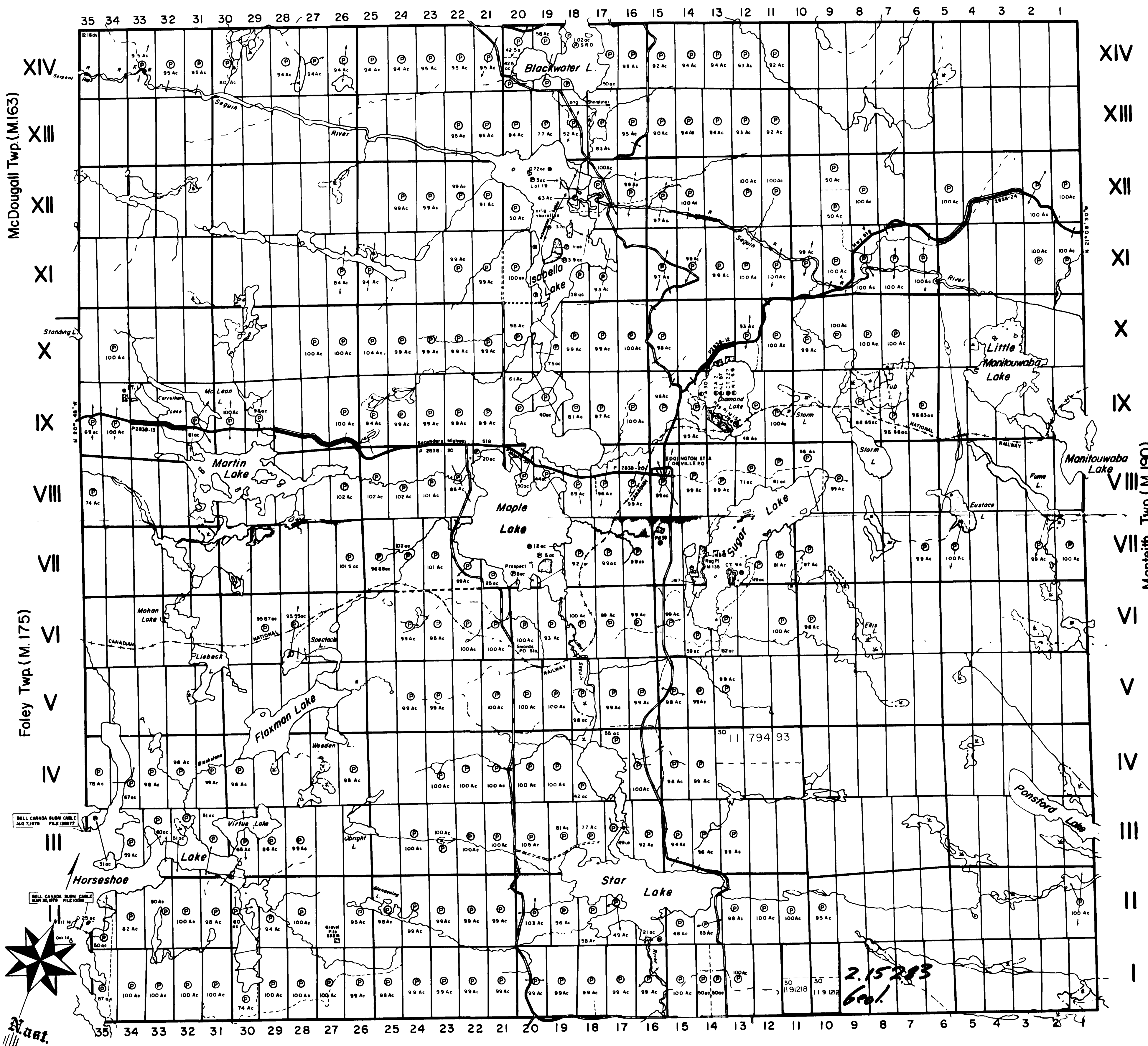
JAN 12 1994

SOUTHERN ONTARIO MINING DIVISION

RES. GEO. SUDBURY
M.N.R. DIST. PARRY SOUND

PLAN NO.-M.67

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

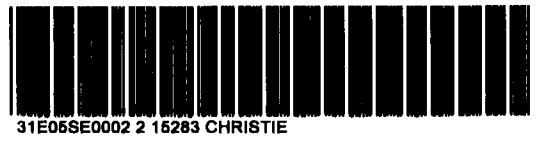
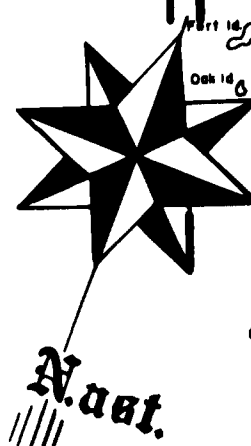


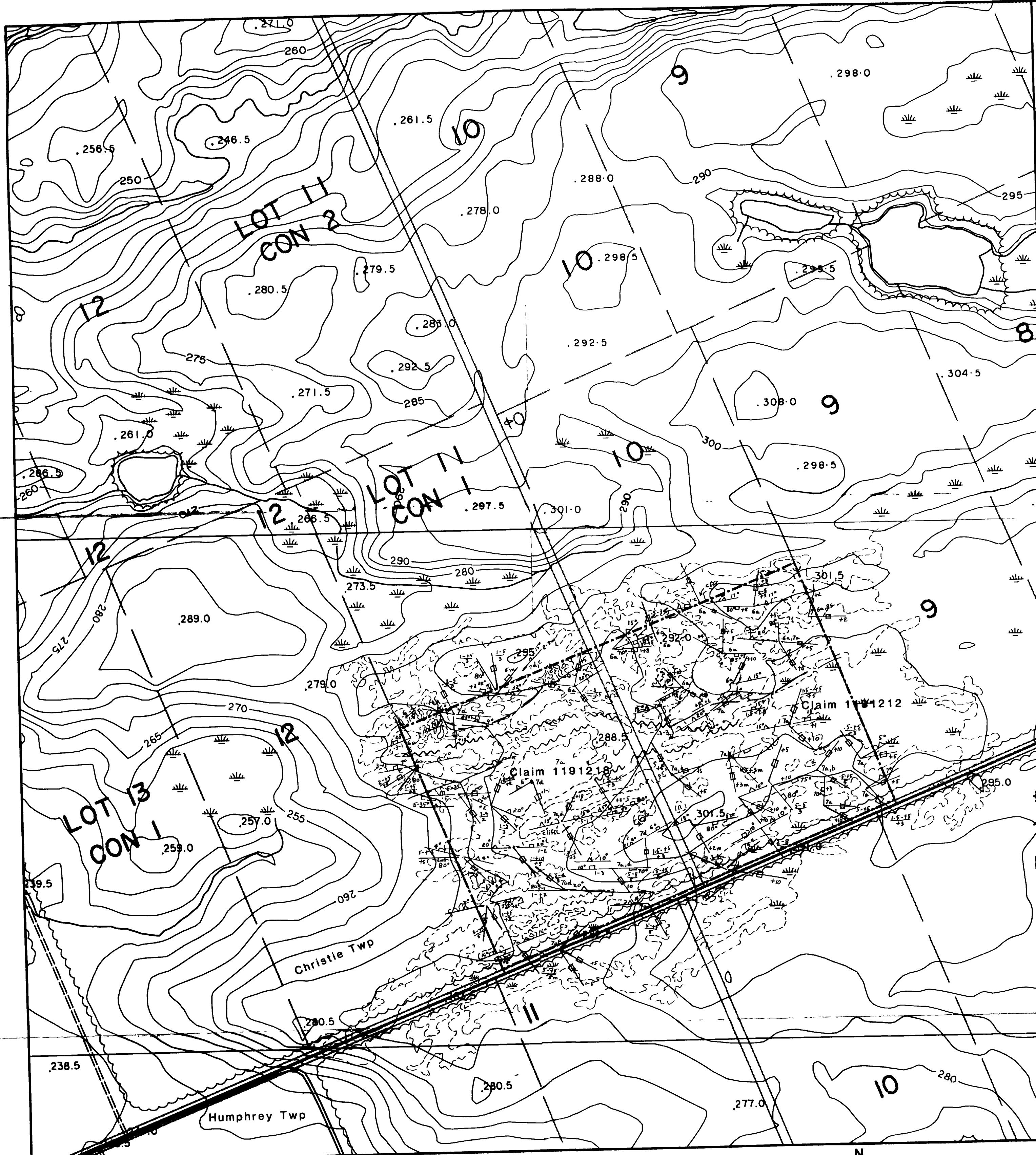
McDougall Twp. (M.163)

Foley Twp. (M.175)

Monteth Twp. (M.190)

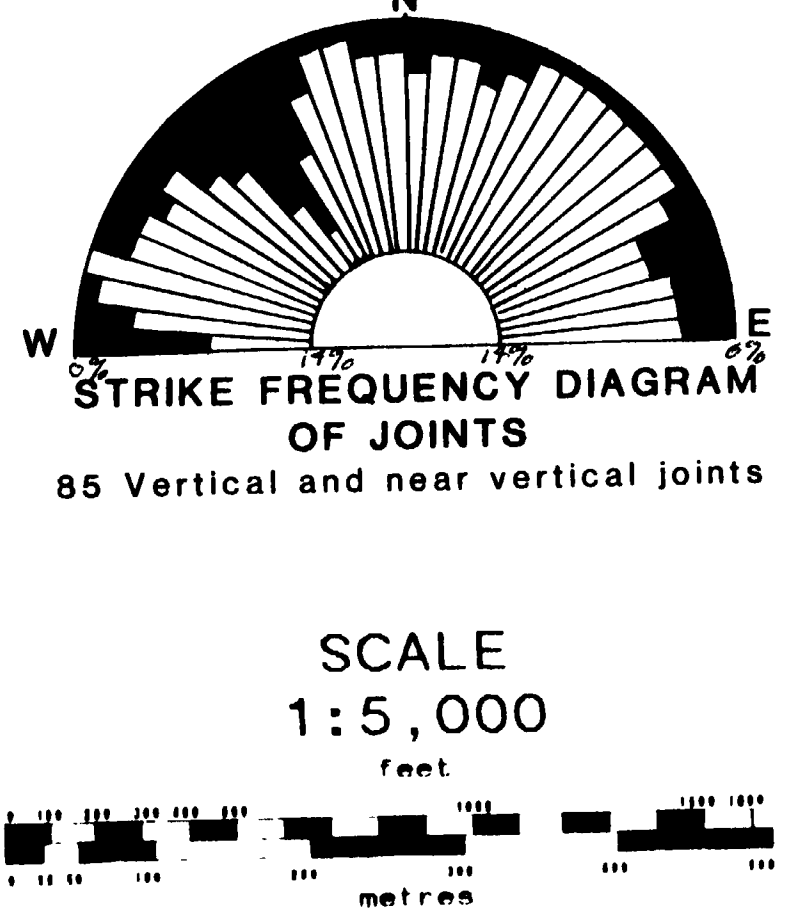
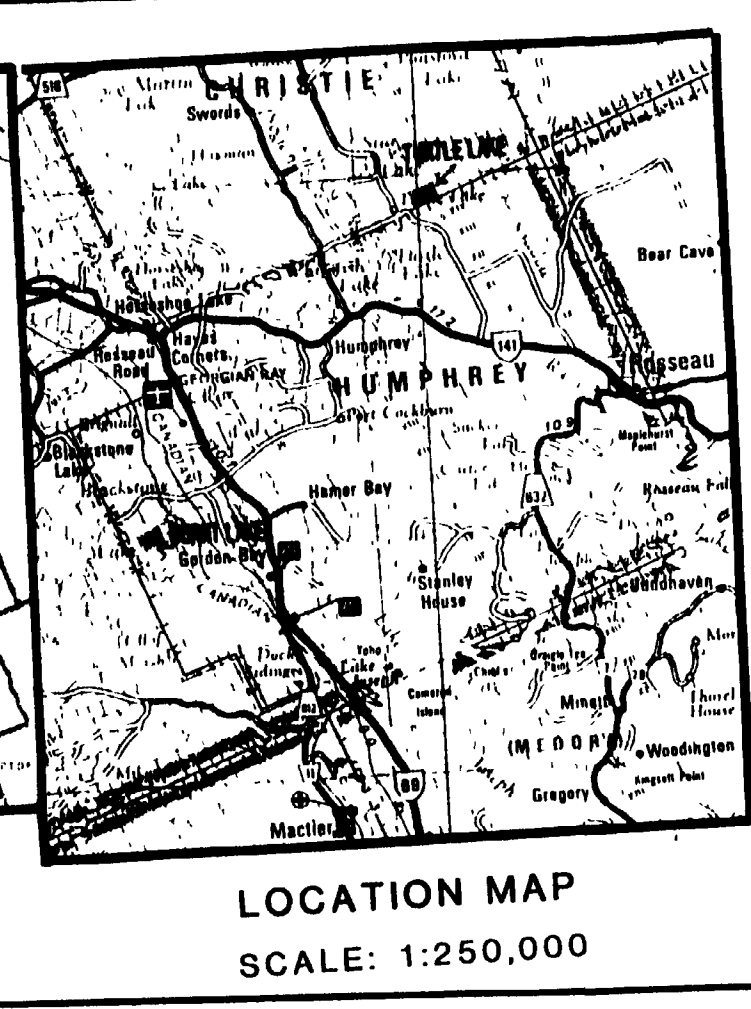
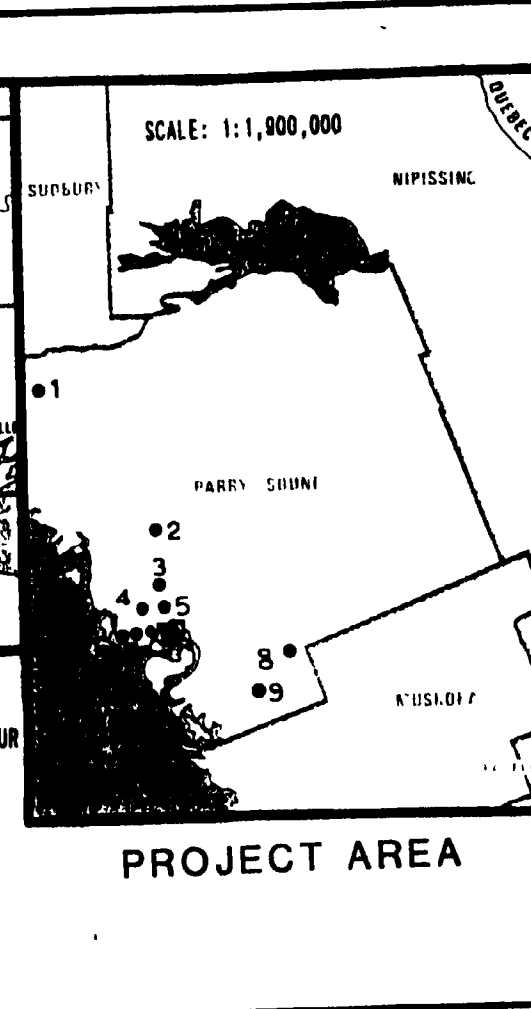
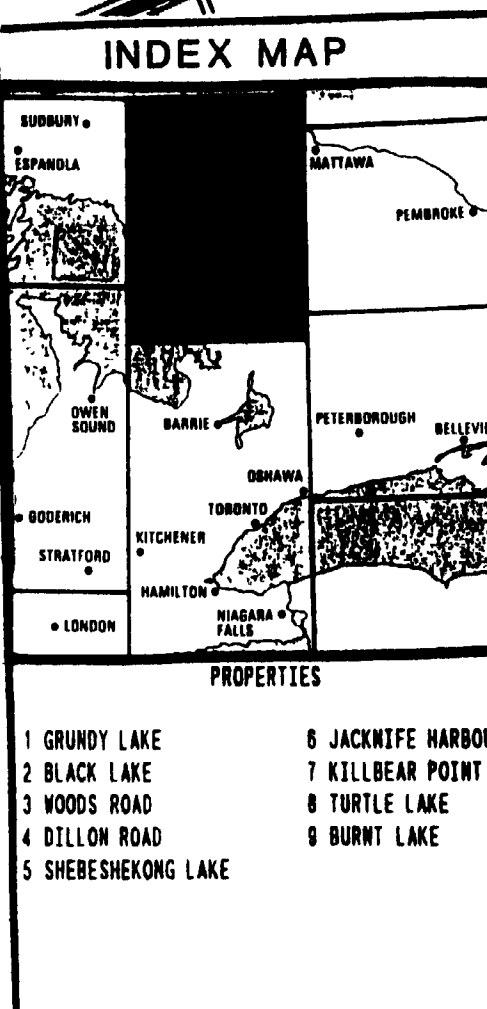
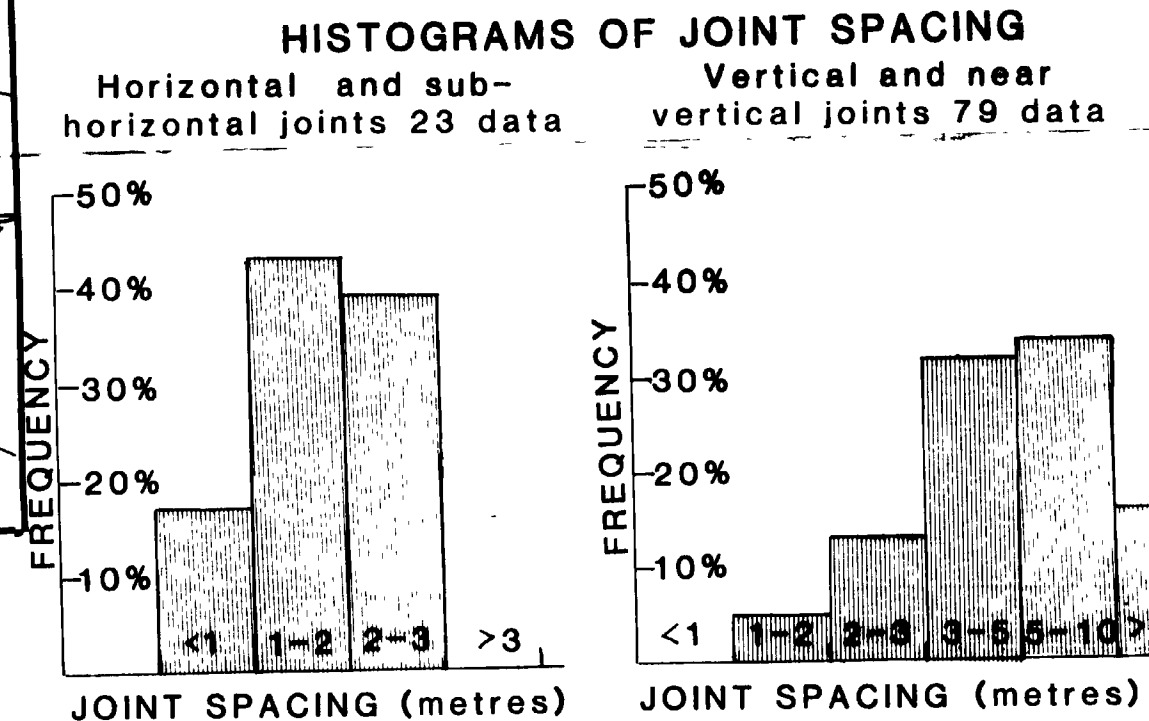
Humphry Twp. (M.181)





- ### LEGEND
- 1 **FELSIC GNEISS** - layered to massive rock mainly composed of quartz, plagioclase and microcline with minor matrix biotite and variable accessory magnetite, hematite and ilmenite: a) coarse grained equigranular rock, very weakly layered, b) unit 1a with coarse reddish-mauve speckles of hematite; c) strongly layered fine to coarse grained cataclastic rock; d) unit 1a containing very large breccia fragments of pegmatite which show no internal strain; e) fine to medium grained massive pink to rose coloured rock with thin biotite-rich partings; f) unit 1e more thinly layered and containing mauve hematite-bearing laminae.
 - 2 **AMPHIBOLITE GNEISS** - layered to massive, fine to coarse grained, greyish black to black rock generally comprising 40 to 70% amphiboles with plagioclase in its unaltered state: a) fine to coarse grained, thinly to thickly layered uniform gneiss occasionally with some biotite rich partings; b) lit par lit migmatite comprising unit 2a the paleosome constituent and parallel bands of late tectonic pegmatite; c) migmatite breccia comprising clasts of late tectonic pegmatite within unit 2a.
 - 3 **BIOTITE HORNBLENDE MIGMATITE** - a fine to coarse grained, highly variable rock of multicomponent origin generally lit par lit layered and frequently comprising similar intrafolial folds; the paleosome constituent comprises biotite, hornblende, feldspar and quartz and frequently has a relict foliated or thinly laminated texture; the neosome constituent is generally coarser and comprises a syntectonic, cataclastic, originally pegmatitic aggregate of quartz, feldspar and minor hornblende and/or biotite: a) variegated pale and dark grey with mafic content >20%; b) variegated pale and medium grey with mafic content >10% <20%; c) variegated pink and medium grey with mafic content >10% <20%; d) variegated pale and light grey with biotite content <10%; e) variegated pink and light grey with biotite content <10%; f) intense pink schlieren with biotite content <5%; g) minor purple hematite spotting; h) late tectonic pegmatite >10%; i) late tectonic pegmatite <10%; j) hornblende dominant mafic mineral; k) biotite dominant mafic mineral.
 - 4 **PURPLE AND PINK MIGMATITE** - variegated rock with laminations of medium to coarse grained unit 1a or 3f and a fine to medium grained reddish mauve layer comprising quartz, feldspar, biotite, ilmenite and hematite; often a milky to buff late tectonic granulated quartz-feldspathic pegmatitic material forms conformable layers which generally exhibit pinch and swell textures: a) thinly laminated or layered pink and mauve or pink, mauve and buff rock; b) 4a with brecciated mauve fragments in pink or buff layers or concentrations of mauve layers in the pink or buff layers; c) 4a or 4b with >5% biotite or hornblende-rich mafic layers.
 - 5 **GABBRO** - coarse grained mafic to ultramafic rock: a) Coronitic megacrysts having relict outlines of original pyroxene phenocrysts or olivocrysts and a massive to slightly foliated texture; b) amphibolite gneiss - foliated and generally layered rock with >40% amphiboles.
 - 6 **TONALITE** - coarse grained intermediate rock with >20% <50% mafic minerals generally with some relict plagioclase phenocrysts and a strained to uniform gneissic fabric: a) variegated medium to dark grey and pale grey, regularly layered rock generally medium to coarse grained usually having patches of relict phenocrysts; b) porphyritic rock with elongated pink feldspar phenocrysts within a foliated to gneissic medium to coarse grained matrix of amphibole, feldspar and quartz.
 - 7 **MEGACRYSTIC GRANITE** - Porphyritic rock with relict, strained, orthoclase phenocrysts within a medium to coarse grained matrix of quartz, plagioclase, orthoclase and biotite and/or hornblende: a) pink phenocrysts with prestrained diameters of >2cm; b) pink phenocrysts with prestrained diameters of <2cm; c) >5% <20% pink, fine to medium grained, syntectonic pegmatite; d) folding, stretching, rolling and rodding of preexisting phenocrysts and pegmatite stringers.
 - 8 **GRANITE PEGMATITE** - fine to coarse grained quartz, microcline plagioclase, and biotite-bearing rock varying in texture in response to its tectonic history: a) very coarsely crystalline, unstrained, post-tectonic rock; b) very coarse crystalline tectonic breccia; c) medium to coarse grained cataclastic rock with occasional large clasts; identical to unit 1d in appearance.
*No origin is inferred by this name
*No relative ages are inferred by this order of the legend

- ### SYMBOL LIST
- Geologic foliation: with dip; vertical; horizontal
 - Joints: horizontal; vertical with average spacing; with dip, minimum and maximum spacing and average separation
 - Schistosity or foliation
 - Lineation: with plunge
 - Property boundary
 - Highway, road
 - Secondary road
 - Abandoned road or trail
 - Road allowance
 - Railroad
 - Concession line
 - Lot line
 - Electric power line
 - Topographic contour (5 metre interval ASL)
 - Swamp
 - Clearing
 - Outcrop
 - Quarry
 - Buildings
 - Geological contact inferred
 - Fault



15283

JR TRUSLER & ASSOCIATES
 MINERAL CONSULTANTS

TURTLE LAKE PROPERTY

GEOLOGICAL MAP

DATE Oct. 18, 1993 SCALE 1:5,000 DRAWN BY JR TRU