

S. W. Evans, B.

MINING GEOLOGIST



42A03SE0226 63A.531 BEEMER

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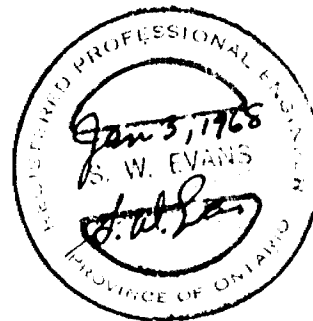
DON MILLS, ONTARIO

29 SOUTHWELL DR.

PRELIMINARY GEOLOGY ON PART OF THE BOYCHUCK PROPERTY,
ENGLISH AND BEEMER TOWNSHIPS, MONTREAL RIVER MINING DIVISION,
DISTRICT OF SUDBURY, ONTARIO.

Toronto, Ontario.
Jan. 3, 1968.

S. W. Evans, P. Eng.,
Mining Geologist.



INTRODUCTION:

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These mining claims, adjacent to the west shore of Muskasenda Lake, were mapped geologically during November, 1967, under somewhat difficult weather conditions.

There is a copper showing in a fractured rhyolite on the north shore of Telluride Bay associated with a feldspar porphyry mass. Since cursory investigation indicated that the showing was of interest and a definite scarcity of geological information in this locale existed, it was decided that in spite of the lateness of the season, that a preliminary geological approach to the exploration project was required. The writer was engaged to proceed with this phase of the investigation.

PROPERTY AND LOCATION:

The acreage under discussion concerns 20 mining claims located in English and Beemer Townships, Montreal River Mining Division, District of Sudbury, Province of Ontario.

These 20 claims form the western portion of a larger block presently under option to Cyprus Exploration Corporation Limited. They are specifically numbered as follows:

Beemer Twp.	MR 47839	MR 48568	MR 45567
	47838	45569	45566
	47837	47836	47835
	47840	47841	

English Twp.	MR 39096	MR 38322
	39102	47842
	39101	45572
	38317	45571
	45573	

Note: These 20 mining claims enclose an area of, approximately, 600 acres with 80 acres being water-covered by Muskasenda Lake.

The property lies, approximately, 29 air miles south of South Porcupine, Ontario, and 31.7 air miles northwest of Matatchewan, Ontario.

There are no camps on the property mapped but camp facilities exist on a point at the south end of Muskasenda Lake where there is an abandoned saw mill. A high voltage transmission line of the Ontario Hydro Electric Corporation, traverses English Township from north to south, approximately, 4 miles east of the map area.

Much of the area was cut over when the saw mill was in operation and present growth is mixed with a few ridges of mature jack pine growth. Scattered large spruce were observed.

ACCESSIBILITY:

The property is accessible by bush road from the Porcupine Mining Area and the road distance is, approximately, 50 miles. From Matatchewan, access is by Highway No. 566 and Wicks' logging road which passes to the south of Ferrier Lake.

From the old camp area at the south end of Muskasenda Lake, a bush road extends south for four miles along the west side of Ferrier Lake to join the Wicks Lumber Company road at the south end of Ferrier Lake. The road distance to Matatchewan is, approximately, 50 miles.

Charter air service with helicopter and fixed wing aircraft is available from Timmins and South Porcupine, respectively.

METHOD OF INVESTIGATION:

It was considered desirable to establish control for the geological mapping and a line grid was completed over the desired area. A baseline was cut starting at the southwest corner of the group and extended through the property on a bearing of N 42° W. (true: declination 11° W). Chained picket lines were cut at right angles to this baseline every 400 feet. These lines were chained east and west from the baseline to the property boundaries (North, South, and West) and to the shore of Muskasenda Lake on the east side. Two picket lines were extended east over the ice of Telluride Bay.

All the lines were traversed including the baseline, and outcrop where observed along the lines was examined. The shoreline of Muskasenda Lake was mapped between the line extremities as was the Telluride Bay shoreline. However, dangerous lake ice conditions prevented the shoreline exam-

ination north of L 68 N. The south boundary was traversed and several boundary traverses between the west line extremities were covered during the survey.

15.51 miles of picket lines (includes baseline) and 6 miles of shoreline and intermediate traversing were covered for a total distance of geological traversing of 21.51 miles. The final plan of the survey was completed on a scale of 1 inch equals 200 feet and accompanies this report.

GEOGRAPHY:

Muskasenda Lake lies along the east side of the map area. This lake, trending in a general north-south direction, is 6 miles long and up to 1.5 miles wide. The west shoreline of this lake is precipitous and rises steeply to elevations, approximately, 150 feet above the water level.

The shoreline escarpment is interrupted and breached by Telluride Bay which allows an outlet to the Lake for Telluride Creek. Telluride Creek is a meandering stream with a well defined channel. An outwash area has developed at the mouth of this brook. Telluride Creek drains the south-central sector of the area. In the central part of the property, a north to south drainage pattern joins the Telluride Creek system. There is a great amount of flooding due to beaver dams both on Telluride Creek and on the subsidiary drainage system.

The rock exposures, in general, are confined to the ridges and knolls located in the swampy areas and to the higher elevation locales. There is good rock exposure over much of the property but it is located, primarily, in the north and central sectors, and adjacent to Muskasenda Lake, with diminishing exposures to the south and the west, where considerable swampy overburden predominates.

Although snow-cover prevented a good estimate of the percentage of rock outcrop to the total acreage involved, 25% is probably a reasonable approximation.

PREVIOUS EXPLORATION WORK:

The map area has received sporadic attention over the years as a gold prospect. However, it was not until the present line cutting and mapping program that the old excavations were located. It is believed that some of these trenches and pits were excavated as long ago as 40 years. Two principal locations were observed:

- a) Western extremity of L 36 N
Claim MR-47836
- b) Baseline area at L 72 N
Claim MR-47842

Although snow prevented anything more than a limited examination, it would appear that the excavations are generally confined to silicified and quartz rich sections in a pyritiferous biotite rich metavolcanic unit (possibly basalt or andesite in origin) .

The present copper showing is located on the north shore of Telluride Bay on claim MR-38322. Very little work has been done at this location other than exposing a limited area of fresh rock. Pyrite, chalcopyrite, with minor bornite are associated with a fracture system in a quartz sericite schist (Rhyolite). This exposure is approximately 40 feet wide and to the west it is in immediate contact with a rhyolitic feldspar porphyry. The contact appears to be quite irregular, and the limits and attitude of the host sericite schist are not readily apparent.

There is no indication, other than the old excavations, that the property has ever been tested by controlled geophysical methods of prospecting.

GENERAL GEOLOGY OF THE PROPERTY:

Precambrian rocks of Archaean age are exposed within our map area. There are probably Nipissing and Matatchewan diabase dikes in the area. The basic metavolcanics are tightly folded and relatively steep dipping to the north. Although this map unit is undifferentiated, it is believed that their origin has mainly evolved from andesites and basalts with intercalated rhyolites and dacites. Sedimentary rocks are represented within the flows as green carbonates. The metavolcanics have also been invaded by mafic and ultramafic intrusives generally as sills, but dikes were observed.

Fresh hornblende gabbro and altered equivalents have intruded the volcanic series. Associated with this horizon we have an extensive quartz diorite intrusive invading the regions of structural weakness.

In certain instances, our rhyolites may have been recrystallized as rhyolitic feldspar porphyry and where the rhyolite has been sheared and fractured, quartz sericite schists have developed.

West of the quartz diorite and gabbro there is a large area of quartz monzonite which is probably associated with the granite masses further to the west in Beemer Township.

Table of Formations

- 1: Biotite Granite
- 2: Quartz Monzonite
- 3: Quartz Diorite and meta-quartz diorite
- 4: Gabbro and metagabbro
Mafic sills and dikes, Lamprophyres, Aplites
- 5: Rhyolitic quartz feldspar porphyry
- 6: Rhyolite and quartz sericite schists
- 7: Metavolcanics, basic lavas, mainly andesites and basalts now represented as chlorite schists, quartz biotite hornblende schist, and hornblende schists, with intercalated rhyolite and green carbonate rocks.

Metavolcanics:

The best exposures of these undifferentiated lavas is along the shore of Muskasenda Lake. Fine to medium grained dark green schisted rocks predominate, and are probably derived from andesites and basalts. Chlorite schists and quartz biotite hornblende schists predominate.

The basic volcanics are intercalated with rhyolites and green carbonate zones. Mafic sills and dikes invade this unit but differentiation is generally difficult except in the case of certain rhyolite horizons. (A petrographic study would probably establish a relationship between metavolcanic rocks with rounded blue quartz eyes and similar quartz accessories in the quartz diorite unit).

Rhyolite:

The rhyolites are scattered throughout the property and in the southeastern sector appear generally as narrow discontinuous lenses but in the vicinity of Telluride Bay (south and north) they become quite extensive.

They are generally a light grey, fine grained, cherty flow and where sheared and fractured have developed considerable sericite. In some instances, small quartz phenocrysts were observed. The weathered surface is usually a light creamy color and where sulfides are present, the surface is rusty. Small inclusions of hornblende are associated.

Rhyolite: (cont'd)

Traces of pyrite and chalcopyrite are common, and on the north shore of Telluride Bay, a 40 foot exposure of fractured quartz sericite schist has pyrite, chalcopyrite and bornite localized along the fractures.

Rhyolitic Feldspar Porphyry:

This conspicuous rock unit was observed at several locations on the property with extensive outcropping along the northwest side of Telluride Bay and southeast from its mouth along Telluride Creek. This light grey, fine grained matrix, is spotted with feldspar phenocrysts up to 1/2 inch in diameter. It is generally hard and resistant to weathering. The odd fracture in this unit was observed to be tightly filled with quartz veins up to 1/2" in width with feldspathization of the wall rock over 2 to 3 inches.

Gabbro and Lamprophyre:

Ultramafic, coarse grained, dark green, 'hornblendite' gabbro has intruded the volcanic series and extends from the north section of the property near Muskasenda Lake southwest for approximately 1 mile. Where highly sheared, this rock has developed intense chloritization, with heavy concentrations of biotite. Minor pyrite and chalcopyrite were observed associated with this rock. On L 72 N at 650' W a sheared metagabbro contains scattered cuprite with significant disseminated minute metallic specks

Gabbro and Lamprophyre: (cont'd)

that could be chalcocite. Locally the gabbro is magnetic.

The mafic dikes and sills include those of the lamprophyre type, kersantite. The main constituents are biotite, hornblende, quartz, and feldspar. They are generally fine grained, sugary, and vary from grey to black, and are magnetic. Good exposures may be observed on the shore of Muskasenda Lake south of the entrance to Telluride Bay. At this location, they intrude the rhyolite and rhyolitic feldspar porphyry. Contacts are very sharp and outstanding due to the color difference. Several fine grained, reddish tinged, siliceous aplite dikes and sills were observed. In general, these acid intrusions were observed in the vicinity of rhyolite exposures.

Quartz Diorite:

Next to the metavolcanics, the quartz diorite is probably the second most extensive unit. In proximity to the gabbro and metagabbro, the quartz diorite extends from north to south through the map area. The texture varies from fine to coarse grained with well developed phenocrysts of plagioclase feldspar, and hornblende. This porphyritic habit is common and in certain areas lath-like feldspars create an ophitic or diabasic texture. Scattered rounded blue quartz eyes were observed at several locations.

Quartz Diorite: (cont'd)

In certain instances, lath-like crystals of labradorite are trapped in the hornblende crystals (hornblende after augite) inferring that plagioclase in the labradorite range crystallized ahead of the pyroxene and that the quartz diorite replaced an original gabbro.

Magnetic, 'gneissoid' metavolcanics probably belong with the quartz diorite. The quartz diorite is transitional to the quartz monzonite which, in turn, is probably related to the biotite granite located to the west in Beemer Township.

The meta quartz diorites and metagabbros are probably related since under shearing, chlorite schists, gneisses and amphibolite schists will develop. It is difficult to establish an exact division between the quartz diorite and the highly sheared gabbro but in this instance a suggestion of coarse grained well developed hornblende remnants places the exposure within the gabbro limits. This arbitrary method may have to be restudied with further additions to the petrographic evaluations.

A number of outcrops were magnetic. Traces of pyrite and chalcopyrite were observed.

Quartz Monzonite:

The quartz diorite is transitional to the quartz

Quartz Monzonite: (cont'd)

monzonite and in general the latter rock type lies along the western side of the quartz diorite. This unit is generally medium to coarse grained, granitoid, and the feldspar and hornblende phenocrysts display a porphyritic habit. Some lineation of the hornblende and the feldspar phenocrysts was observed.

Although ratios vary widely, there is considerable potash feldspar allied with the predominant plagioclase. The rock is similar to some of the quartz diorite exposures in that we have an interesting display of labradorite color from cleavage surfaces of the amphibole. This again indicates replacement of an original gabbro type material.

Biotite Granite:

Even though the outcrop of biotite granite on L 32 N, 960' E may be float, this reference is made since the quartz monzonite is probably allied with the major granite pluton to the west.

Footnote:

A great number of the rocks exposed on the property possess varying degrees of silicification. This partial alteration feature may be diagnostic to a further hydrothermal injection of quartz and feldspar.

The metavolcanics have been tightly folded and along the shore of Muskasenda Lake they have a general east-west strike and dip north from 60° to 70° . There is much minor shearing associated with these rocks.

The metavolcanics and rhyolites are cut by the gabbro and quartz diorite intrusives and it is within and near these units that our major shears, as indicated on the plan, occur. The Telluride Shear strikes parallel to the baseline and extends at least from L 36 N to L 80 N. This shear probably continues to the southwest but there is not enough detail to plot the extension. The Beaver Shear strikes $N 25^{\circ} E$ from L 36 N, 400' W to the north boundary. Subsidiary transverse shears strike $N 60^{\circ} W$ from the Beaver Shear. It is in this area of mafic rocks trapped between the two subsidiary shears that intense shearing of the gabbro has taken place.

Telluride Bay appears to be the loci for a number of structural lineaments, and since this is the area of our copper occurrence, the structures here are important. There is not enough detail to establish movements along the main shears but the schistosity, and fracture strikes and dip in this area certainly indicate that faulting has occurred. Of interest are two locations just outside Telluride Bay where minor faulting was observed.

a) South of the bay entrance: A quartz filled vug has been displaced six inches by a steeply dipping fracture to the north. The throw is north side down.

b) North of the bay entrance: An aplite dike has been displaced approximately 2 feet by a steeply dipping fracture to the north. The throw is north side up. Drag folded quartz veins in this vicinity dip to the west at 40° .

The west contact of the quartz sericite schist (copper show host) strikes $N 35^{\circ} E$ and dips to the east at 80° . This contact is quite irregular and the inferred extension of the zone is of doubtful validity. The schistosity is vertical and the strike is $N 5^{\circ} E$. The major fracture system conforms with the schistosity trend but there are a number of minor fracture patterns.

The rhyolitic quartz feldspar porphyry is exposed over an extensive area southwest along the baseline from Telluride Bay, and flanks both sides of the Telluride Shear. The southeast contact with the rhyolite is obscured by overburden and may not be valid as it is indicated. (In retrospect this porphyry mass is assuming intrusive aspects and may not be derived from the recrystallization of the rhyolite).

The rhyolite outcrop on L 56 N, at 1300' E, is cut by a mafic dike up to 3 feet wide. It is of interest that the horizontal fractures in the rhyolite do not pass through

the dike and are bent due to competency variations.

Another transverse shear striking N 75° E is inferred on the south side of the large rhyolite horizon on claim #39101.

A brook flowing into Muskasenda Lake on claim #39096 drains a large swampy area and appears to have followed the rock jointing pattern in order to cut a channel down to the lake.

At L 84 N, a north south fault is interpreted. There appears to be a horizontal displacement of the gabbro of approximately 450 feet. Relative movement is west side south.

The preliminary mapping of this property has revealed that complex structures exist. There is no doubt that other strong shear zones could be inferred and significant changes in interpretations would follow. Detail work in selected areas under good field conditions would no doubt add to, and clarify the structural picture.

The existence of a major north south structural lineament underlying Muskasenda Lake appears certain. However, this is outside the present map area and has not been taken into consideration.

ECONOMIC CONSIDERATIONS:

The preliminary study clearly indicates that the property has a complex, interesting geological history. The environment for ore deposition is excellent.

For example:

- a) Pyrite, chalcopyrite and bornite concentrated along fractures in a quartz sericite schist adjoining a feldspar porphyry.
- b) Cuprite and possibly chalcocite in an intensely sheared gabbroic horizon of good dimensions.

Both petrographic and structural associations are conducive to a comprehensive exploration program based on geophysics and diamond drilling.

Dated at Toronto, Ont.,
January 3, 1968.

Respectively submitted,

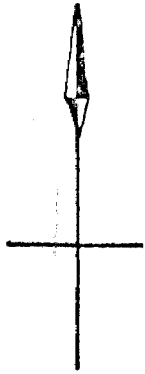
S. W. Evans

S. W. Evans, P. Eng.,
Mining Geologist.



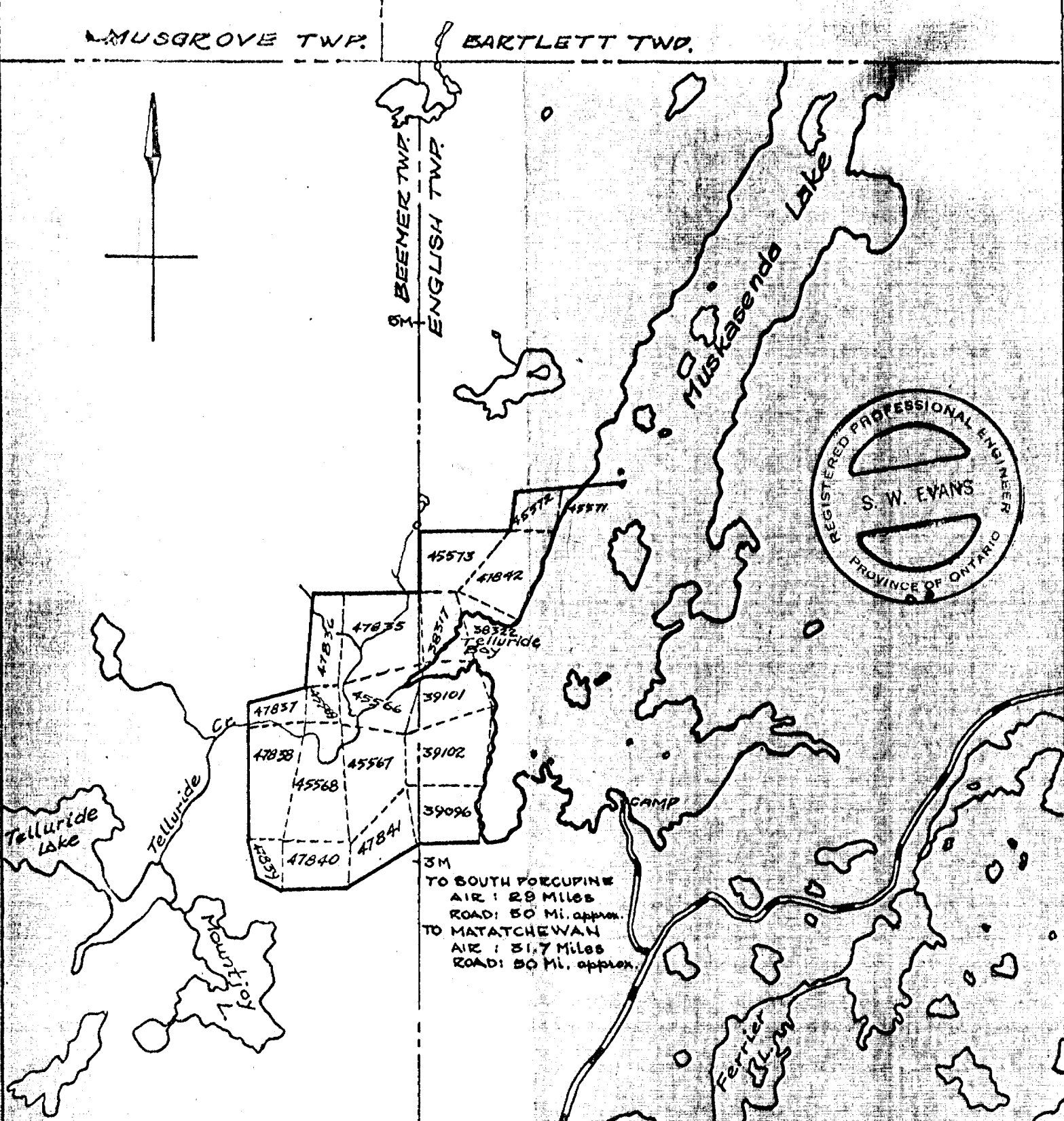
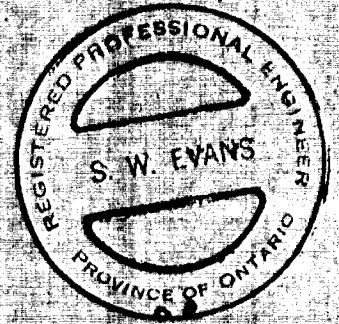
MUSGROVE TWP.

BARTLETT TWP.



BEEMER TWP.
ENGLISH TWP.

Muskasenda Lake



3M
TO SOUTH PORCUPINE
AIR: 29 Miles
ROAD: 50 Mi. approx.
TO MATACHEWAN
AIR: 31.7 Miles
ROAD: 50 Mi. approx.

2M

DISTANCE FROM CAMP TO MAIN LOGGING ROAD AT SOUTH END OF FERRIER LAKE: 4 MILES, Approx.

S. W. EVANS, MINING GEOLOGIST
BOYCHUK PROPERTY
ENGLISH & BEEMER TWP.
MONTREAL RIVER MINING DIV.
SUDBURY DISTRICT ~ ONT.

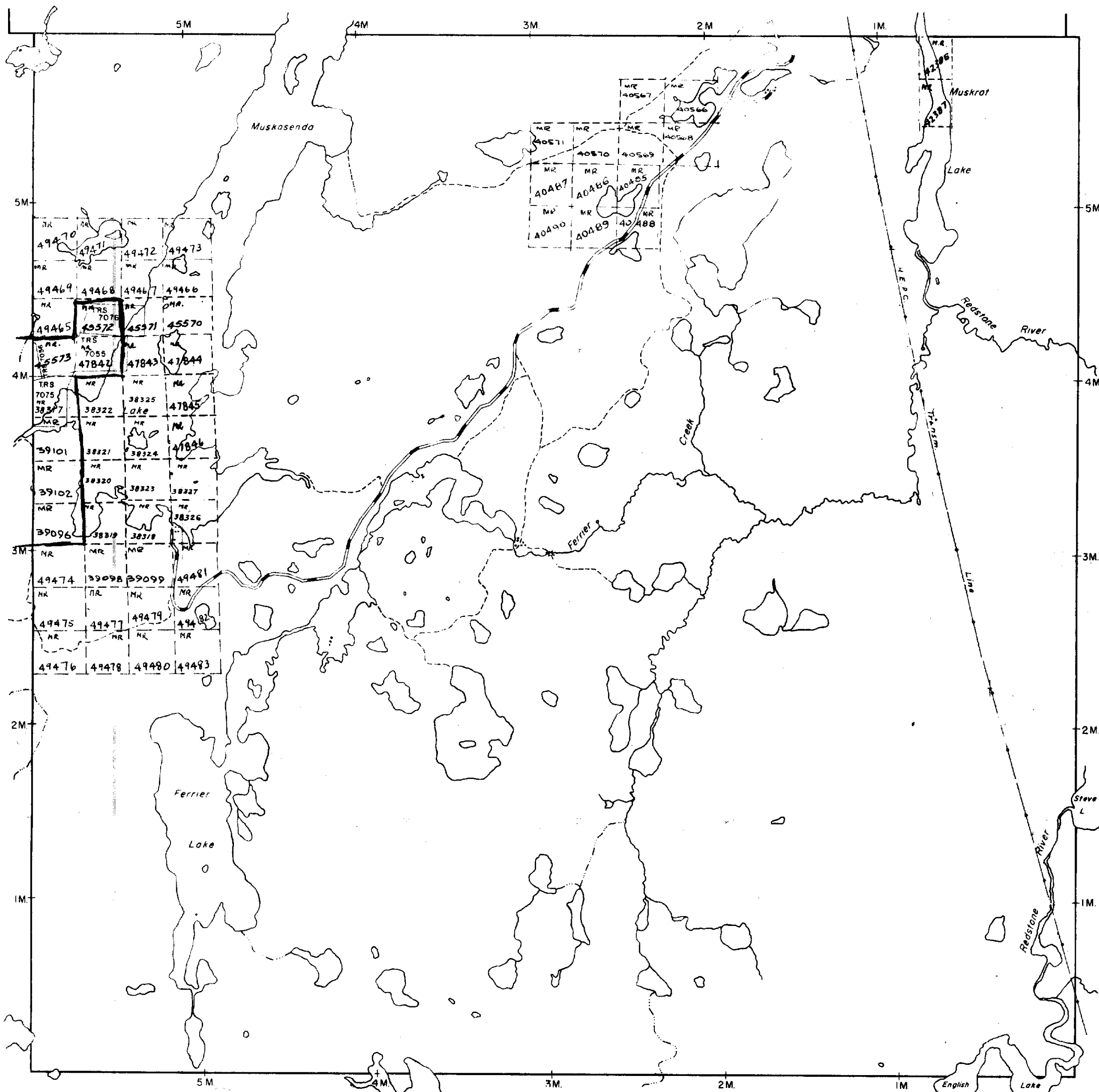
Scale: 1 inch = 1/2 mile. Dec. 20, 1967
S.W.E.

Bartlett Twp. - M.262

Beemer Twp. - M.656

Zavitz Twp. - M.1189

Semple Twp. - M.1100



THE TOWNSHIP OF

ENGLISH

DISTRICT OF SUDBURY

MONTREAL RIVER MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

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

NOTES

This township lies within the TEMAGAMI PROVINCIAL FOREST

400' Surface Rights Reservation around all lakes and rivers.

ONT. DEPT. OF MINES
 MINING LANDS BR.
 THIS MAP FOR CHECKING
 PURPOSES ONLY - MUST
 NOT BE SOLD.

DATE OF ISSUE
 MAY 30 1968
 ONTARIO DEPT. OF MINES

PLAN NO. - M.787

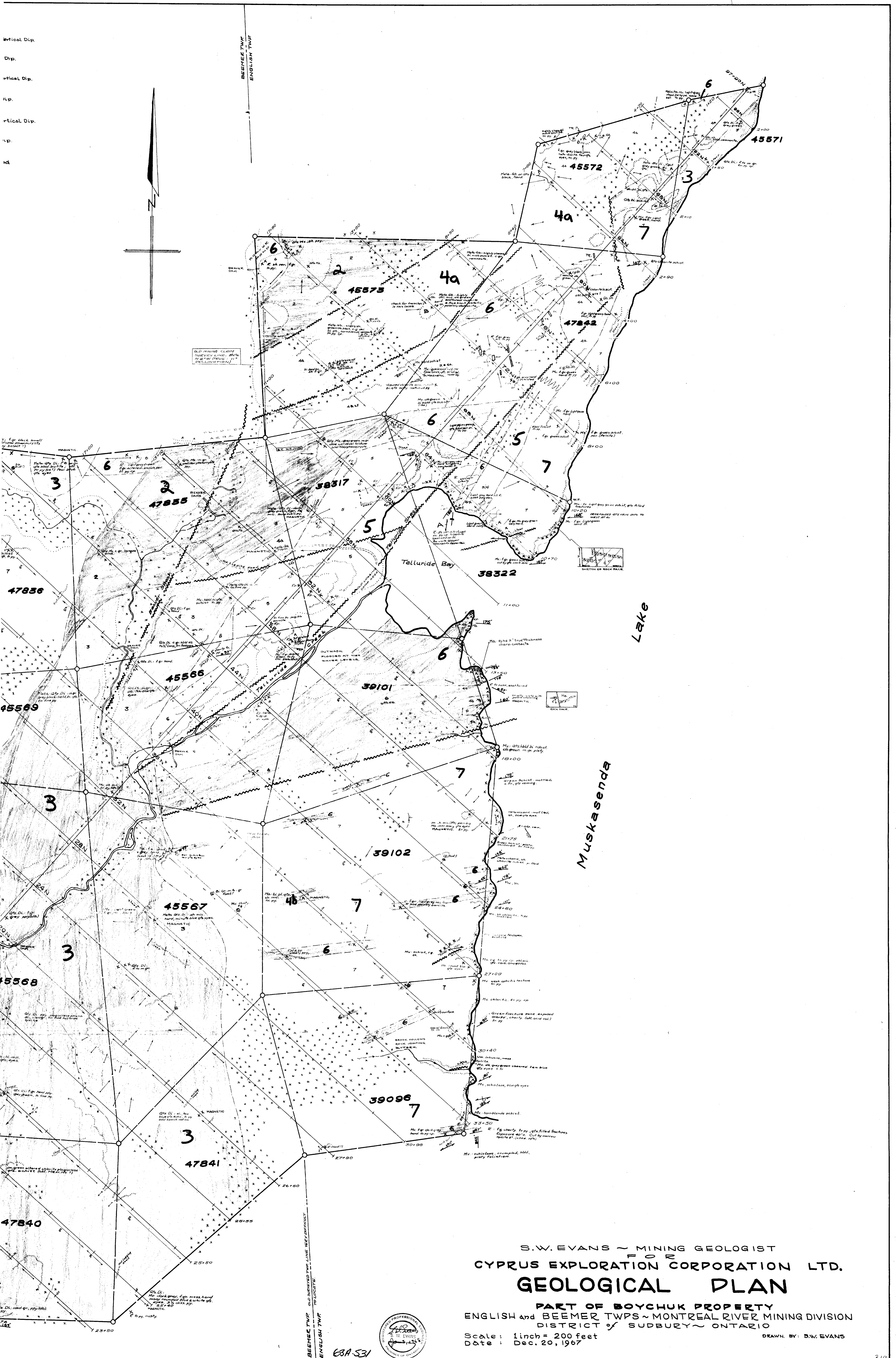
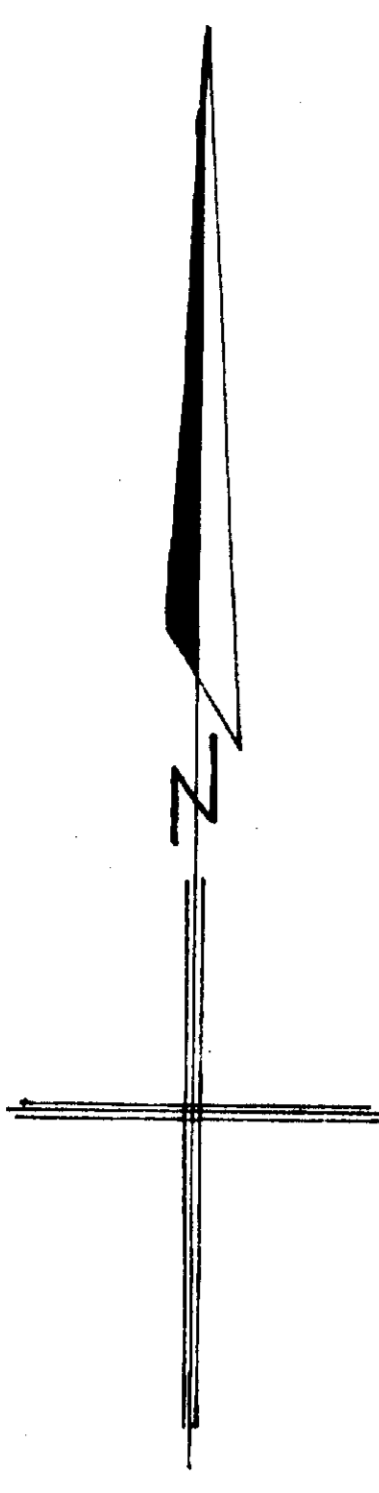
DEPARTMENT OF MINES

— ONTARIO —



42A635E0226 63A.531 BEEMER

Vertical Dip.
 Dip.
 Vertical Dip.
 Dip.
 Vertical Dip.
 Dip.



S.W. EVANS - MINING GEOLOGIST
 FOR
 CYPRUS EXPLORATION CORPORATION LTD.
GEOLOGICAL PLAN

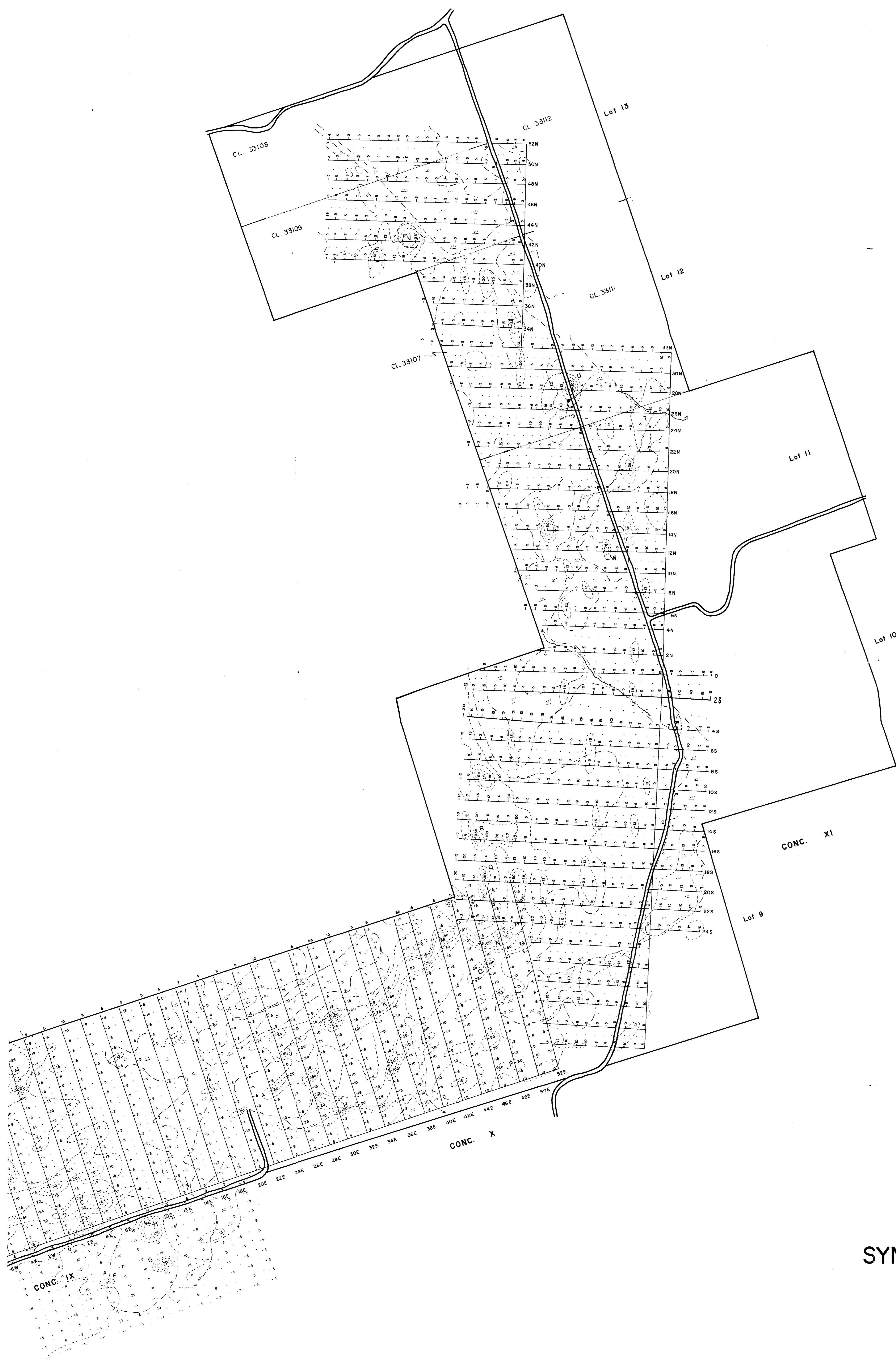
PART OF BOYCHUK PROPERTY
 ENGLISH AND BEEMER TWP'S - MONTREAL RIVER MINING DIVISION
 DISTRICT OF SUBBURY - ONTARIO

Scale: 1 inch = 200 feet
 Date: Dec. 20, 1967

DRAWN BY: S.W. EVANS



68A-531



LEGEND

- Up to 100 ppm
- 100 to 200 ppm
- 200 to 300 ppm
- 300 to 500 ppm
- Over 500 ppm
- Swamp
- Outcrop area
- Overburden - sand and/or boulders

A, B, C, etc. Anomalies

Values in pp 100,000

SYNGENORE EXPLORATIONS LIMITED.

SOIL GEOCHEMISTRY - ZINC

SAGER PROPERTY

MADOC TOWNSHIP, ONTARIO.

Scale 1 inch = 400 feet.

R. W. Benson
March 5 1968

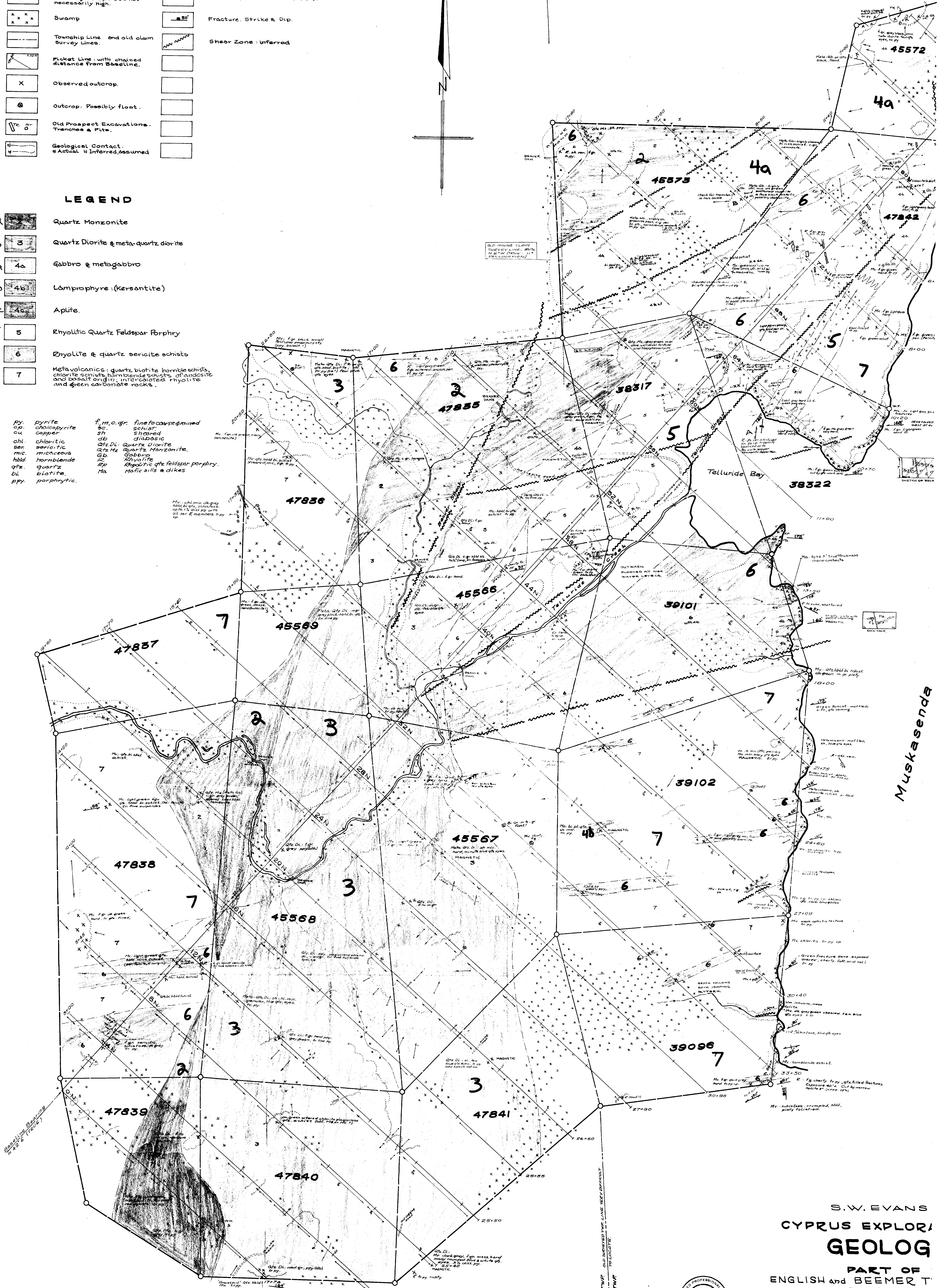
SYMBOLS

	Claim Boundary.		Schistosity: Strike & Vertical Dip.
	Claim Post.		Schistosity: Strike & Dip.
	Water Course & Flow Direction.		Formation Strike & Vertical Dip, Contacts, Flow Lines.
	UP Slope Direction gr. signifies gradual slope.		Formation Strike & Dip, Contacts, Flow Lines.
	Changes in Elevation Generally abrupt but not necessarily high.		Fracture, Strike & Vertical Dip.
	Swamp		Fracture, Strike & Dip.
	Township Line and old claim Survey Lines.		Shear Zone: Inferred
	Pocket Line with chained distance from Baseline.		
	Observed outcrop.		
	outcrop, Possibly float.		
	Old Prospect Excavations, Trenches & Pits.		
	Geological Contact. # Actual, @ Inferred, assumed		

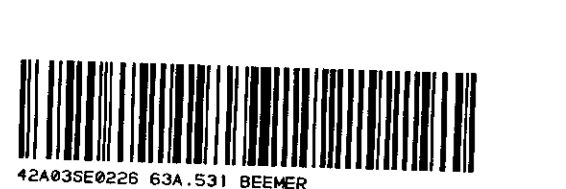
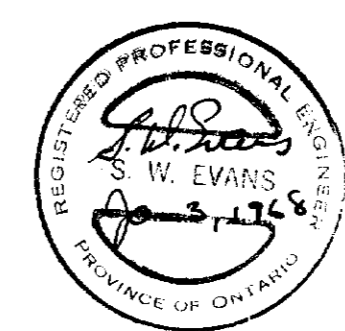
LEGEND

2		Quartz Monzonite
3		Quartz Diorite & meta-quartz diorite
4a		Gabbro & metagabbro
4b		Lamprophyre (Kersantite)
4c		Aplite
5		Rhyolitic Quartz Feldspar Porphyry
6		Rhyolite & quartz sericite schists
7		Metavolcanics: quartz biotite hornblende schists, chlorite schists, hornblende schists, of andesitic and basalt origin, intercalated rhyolite and green carbonate rocks.

py.	pyrite	f. m. c. gr.	fine to coarse grained
cp.	chalcopyrite	schist.	schist
cu.	copper	sh.	shaded
chl.	chloritic	diabas.	diabasitic
ser.	sericitic	qtz. Di.	Quartz Diorite
mic.	micaceous	qtz. Mz.	Quartz Monzonite
hbl.	hornblende	Gabbro	Gabbro
qtz.	quartz	Rhyolite	Rhyolite
bl.	biotite	Rhyolitic qtz. feldspar porphyry.	Rhyolitic qtz. feldspar porphyry.
ppy.	porphyritic.	Ma	mafic sills & dikes



S.W. EVANS
 CYPRUS EXPLORER
 GEOLOG
 PART OF
 ENGLISH and BEEMER TOWNSHIP
 DISTRICT
 Scale: 1 inch = 200 feet
 Date: Dec. 20, 1907



CL. 33108
CL. 3

