

GEOLOGICAL REPORT  
PIISPANEN OPTION GROUP  
VERNON TOWNSHIP

2-82

Introduction:

The property, consisting of seven claims, is held by Canadian Johns-Manville Co. Limited under option from V. Piispanen and T. Tammisen of Worthington, Ontario. Total miles of line cut equalled 7.29 with the base line running north - south and grid lines cut normal at 400 foot intervals.

Location:

The claims group is situated in the centre of Vernon Township, Sudbury Mining Division, Province of Ontario. Vernon Township is 77 miles due west of Sudbury or 16 miles north of Espanola. The latter town is just south of Highway 17.

Access:

Access to the property is best gained by taking a bush road from Cartier which is the road to Fox Lake Lodge. From Cartier to Porter Lake is about 40 miles on gravel and bush road. Two muskeg tractor roads run west from this major bush access. The first, about 5 miles before Porter Township, takes on to the central part of the claims and is about 2 miles in. Using the second road, which is 3 miles from Porter Lake, one only has 1/2 mile to go and it ends at the southeast claim corner of the block. One-quarter of a mile in, the road comes to a "T" junction and the right turn leads to a clearing with some old shacks. It is here on the east side that the claim corner lies.

Topography and Vegetations

The southern 3 claims rise to the east and south into high hills with well established trees on the ridges and reasonably clean underbrush. The northern 4 claims are in contrast swamp and hills. The southeast claim is almost wholly spruce swamp while the other 3 claims each have a large hill, these separated by bad hazel brush and swamp. The south end of the outcrop, on claim 138333, ends in a cliff about 100 feet high.



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Geology:

The claims block covers an area of Huronian rocks unconformably lying on the Algonian granite. These are highly folded and faulted and are cut by later intrusives.

Table of Formations

OLIVINE DIABASE	intrusive
HEPESING DIABASE	intrusive
GONGANDA	conglomerate
SERPENT	quartzite
ESPANOLA	greywacke, limestone
BRUCE	conglomerate
MISSISSAGI	quartzite, argillite, greywacke

Unconformity

ALGOMAN GRANITE

The Algonian granite is a medium to coarse grained pink granite which on some weathered surfaces appears white due to feldspar weathering.

Unconformably above this lies the Mississagi quartzite of the Huronian sequence. Where seen this was greyish to white in colour and showed good current bedding. Many laminations of thin argillite and greenish greywacke were seen in the south. Generally these were radioactive. Weathering has given rise to rusty alteration of the argillites and rusty pebbles in the quartzites and greywackes. This is due to oxidation of original specks of sulphide.

The contact of the Bruce formation in the southwest corner of claim 138333 is sharp. Here the quartzite/greywacke suddenly changes to a conglomerate. This conglomerate contains white granite pebbles and some cobbles in a dark grey to black fine grained matrix with small blue quartz eyes.

Above this unit lies a limestone bed of the Espanola. The rock is typically creamy white with narrow silt bands which show differential weathering on outcrop.

Small silt ridges stand out about 1/8" to 1/4" above the limestone sections. Nowhere was any contact seen of this bed with the Bruce conglomerate. In the northeast corner of claim 135296 the laminated limestone is rusty and bright red in colour. On lines 32400N and 36400N radioactivity is high in these outcrops.

The unit of the Espanola also contains greywacke. This rock is abundant and is a uniform grey greywacke lying above the limestone. The width of outcrop is due mainly to its generally flat dip and to the nature of the folding.

In the southwest corner of claim 135296 two small outcrops of Serpent quartzite occur. This is a hard fine grained white quartzite. Tracing the claim line south two small outcrops of Gowanda conglomerate can be seen. These last two rock types are only represented by the four outcrops and no contacts were seen thus structural interpretation is difficult here. Fortunately only a small area is concerned.

In the south on claim 138333 a large outcrop of Nipissing diabase occurs. This is sill-like, intruding into the Mississagi quartzite. This varies from medium to coarse grained with an indistinct chilled edge.

The olivine diabase can be seen on outcrop on claim 138333. This dyke has brought about intense alteration to the quartzite outcrop 4450E on line 16400E. The outcrop is impregnated with quartz veins and is baked. The olivine diabase is fairly coarse grained and equigranular in outcrop.

Folding: During the course of mapping significant folding was noticed particularly on the two claims in the north. Some folding is also found on claims 138334 and 138335. Generally the fold axes are striking N10°E.

Faulting: The faulting is very strong with most major movement in an east-west direction. The south end of outcrop is cut by an extremely strong east-west fault and another of this type runs close to line 24400N with an east-west movement about 400 feet.

A southeast trending fault cuts the base line at 24400N - this also has

a lateral displacement of about 400 feet.

A northeast trending fault has been indicated cutting the base line at 13400N. This was inferred only because of the valley formed in this direction in the northwest of claim 138335.

Previous Work:

The old set-up for Texas Gulf's diamond drill hole V-5 was located 100 feet west of the base line at 28400N. This vertical hole was drilled in December of 1966 to a depth of 369 feet after reconnaissance mapping had been completed by R. M. Cinn.

Economic Geology:

Strong radioactivity was found in two areas -

- a) the red limestone found 13400E on lines 32400N and 36400N and
- b) argillite beds within the quartzite covering the west half of claim 138333.

The limestone showing is by far the more radioactive but the readings are due to thorium not uranium.

In contrast the argillites within the quartzite contain some uranium values; an assay of about 0.2 lb/ton  $U_3O_8$  was obtained from one band. These bands read a maximum of 700 c.p.s. on a scintrex model BGS-1 Scintillometer.

Conclusions:

From information gathered to date further work on this property is not recommended.

*P. A. R. Brown.*

Submitted: August 18th, 1970  
by: P. A. R. Brown - Geologist.

REPORT ON GEOPHYSICAL SURVEYS  
PIISPANEN OPTION GROUP  
VERNON TOWNSHIP  
SUDBURY MINING DIVISION  
PROVINCE OF ONTARIO

Introduction:

The following report describes the geophysical surveys recently completed on claims optioned by Canadian Johns-Manville Co. Limited located in Vernon Township, Sudbury Mining Division, Province of Ontario.

Cutting and chaining of picket lines were contracted to H. McLenaghan of Timmins and this work was completed in July 1969. Lines, spaced at 400 foot intervals, were cut at right angles to a north - south trending base line. Pickets were fixed every 100 feet along these lines by chainage. A total of 7.29 miles of picket and base lines were cut and chained during the course of this program.

Magnetometer surveying was conducted by T. Wright, geophysical operator and fieldman with Canadian Johns-Manville Co. Limited, using a Sointrex Fluxgate Magnetometer.

Electromagnetic surveying was carried out by R. Haley, geophysical operator and fieldman with this Company using a McPhar Dual Frequency Reconnaissance Electro-magnetic Unit.

Supervision and interpretation of this work were the responsibility of the writer, Regional Geologist with Canadian Johns-Manville Co. Limited and based at Matheson, Ontario.

Property:

The claims surveyed are situated in the south-central part of Vernon Township in the Sudbury Mining Division. These claims are numbered S-138333, 138334, 138335, 138336, 138337, 138338 and 135296 and comprise approximately 280 acres.

This group is held under option agreement from V. Piispanen and T. Tamminen of Worthington, Ontario.

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Accessibility:

See "Geological Report"

Topography:

See "Geological Report"

Previous Works:

See "Geological Report"

General Geology:

See "Geological Report"

Magnetometer Surveys:

A magnetometer survey was conducted over the Vernon Township claims by T. Wright, geophysical operator with this Company during the latter part of July, 1970. Magnetic readings were recorded using a Scintrex Fluxgate Magnetometer Model MF-1 having sensitivities of 20, 50, 200, 500 and 2,000 gammas as per division for the corresponding scales.

This instrument was checked on Munro Mine Base Station No. 2 (Munro-Beatty Sill) and adjustments were made so that a gamma value of 1220 corresponds closely to an absolute value of  $57,599 \pm 15$  gammas as established at the Government Magnetic Base Station at Matheson.

On the claims surveyed base control stations were established as listed below: -

- B. C. S. No. 1 - Line 12400 North on the Base line - 930 gammas
- B. C. S. No. 2 - Line 8400 South on the Base Line - 840 gammas
- B. C. S. No. 3 - Line 28400 North on the Base Line - 630 gammas

During the course of the survey, base control stations were observed at regular intervals (four readings per day) as a check on the working condition of the instrument and to record the daily diurnal variation. Stations were spaced at 50 foot intervals along the picket lines and a total of 649 readings was recorded on the claims group.

Magnetometer Survey: (cont'd)

The results of the survey are depicted on the accompanying "Geo-Magnetic Profile Plan" on a scale of one inch equals 200 feet. Profiles have been plotted on a scale of one inch equals 1,000 gammas with north being positive and south negative.

Due to the relative uniformity of the magnetometer readings on the claims group the interpretation has been based strictly upon the results of the geological mapping. It should be noted, however, that many of the structural features were interpreted from a study of aerial photographs on scales of one inch equals 1320 feet and one mile.

In general, magnetic readings range in value from 600 to 1,000 gammas over the sedimentary formations on the claims. Exceptions occur over the Mississagi quartzites in both the northeast and extreme south parts of the group. Magnetic intensities in the former range up to 6210 gammas while some reach 1700 gammas in the latter along the northeast side of a diabase dike. One reading having a value of 2350 gammas was recorded over the granite basement rocks in the northwest corner of the map area.

The results of the magnetometer survey indicate the sedimentary rocks of the Bruce, Espanola, Serpent and Gowganda formations on the claims surveyed to have weak, relatively uniform magnetic properties. However, local, erratic concentrations of magnetite do occur in Mississagi quartzites and in the rocks of the granite basement.

Electromagnetic Survey:

An electromagnetic survey was conducted over the Vernon Township claims by R. A. Halsey, geophysical operator with this Company, during the latter part of July, 1970. Readings were recorded using a McPhar Dual Frequency Vertical Loop Reconnaissance Electromagnetic unit on a frequency of 1,000 cycles per second.

Electromagnetic Survey: (cont'd)

The McPhar unit is suitable for use as both a reconnaissance and relatively detailed instrument employing three separate configurations. In this case the transmitter was held vertically at a distance of 400 feet from the receiver; the receiver was then tilted about the axis joining the two coils until a null was observed. The transmitter and receiver were moved on the same picket line, 400 feet apart, and readings were recorded at 100 foot intervals. Under these operating conditions a depth penetration of 200 feet was attained.

Null widths, which were extremely low, were recorded at each station but have not been shown on the accompanying plan. A total of 303 stations was recorded during the course of the survey. Walki-Talki units were used by operators of the transmitting and receiving coils for control and communication throughout this work.

The results of the survey are shown on the accompanying Electromagnetic Profile Plan on a scale of one inch equals 200 feet. Interpretation shown has been traced directly from the Geological Plan.

On the Vernon claims the results of the vertical loop electromagnetic survey are extremely weak and uniform. No conducting zones of any interest have been delineated on the claims. The only "crossover" on the property was recorded on Line 0400 to the east of the base line and attains a peak of only 6°.

Conclusions and Recommendations:

Geophysical surveys - both magnetic and electromagnetic - have failed to reveal any anomalies or conducting zones of interest on the Vernon Township claims. In consequence, no further exploration work is warranted for this property at the present time.

  
F. J. Evelegh,  
Regional Geologist.

September, 1970














FOR ADDITIONAL  
INFORMATION

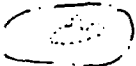












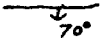


SEE MAPS:

VERNON-0010 #4-5

LEGEND SHEET  
ELLIOT LAKE-ESPANOLA AREA

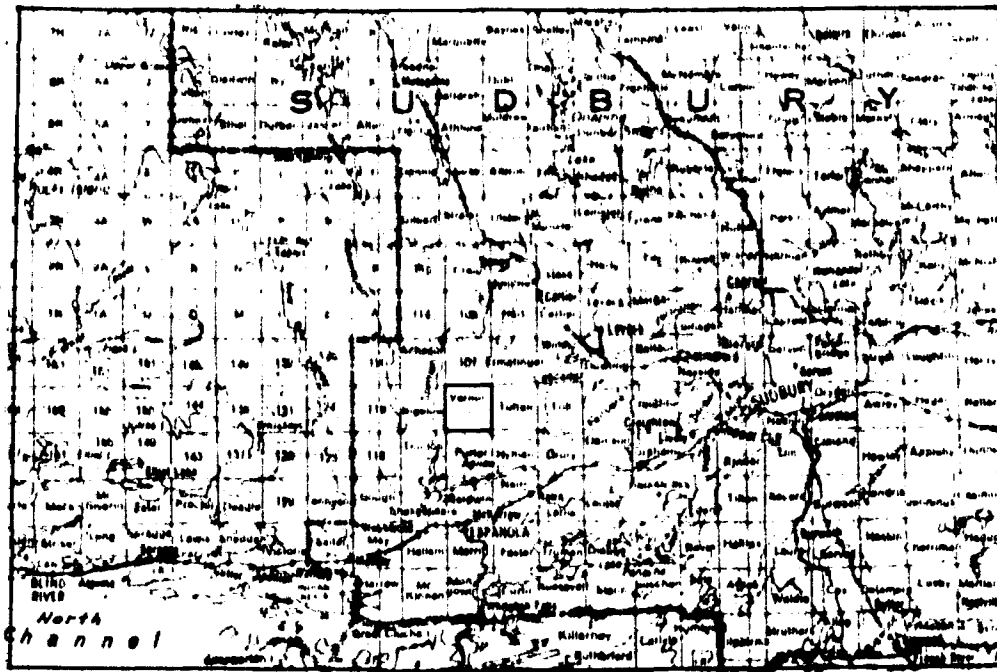
17	KWEENAWAN	olivine diabase
16	PENOKEAN	granite
	NIPISSING	pheneric fine grained
14	BAR RIVER	quartzite
13	GORDON LAKE	siltstone
	LORRAIN	quartzite
	GONGANDA	conglomerate, greywacke
10	SERPENT	quartzite
	ESPANOLA	upper limestone greywacke basal limestone
	BRUCE	conglomerate
	MISSISSAGI	argillite siltstone
6	PECORS	argillite
5 5a	RAISAY LAKE MIDDLE MISSISSAGI	conglomerate conglomerate
4	McKIM	argillite
3	MATINENDA	quartzite, conglomerate, arkose
	ALGOMAN	granite, gneiss, syenite
1a 1b	KEEWATIN	sediments volcanics

SYMBOLS  
ELLIOT LANE-ESPAÑOLA AREAS

	Outcrop enclosed by outcrop area
	Bedding (vertical, inclined) with prominent parallel metamorphic foliation
	Crossbedding
	Bedding, inclined, overturned with dip in direction of loop. Top of bedding (direction of arrow) is known from crossbeds.
	Bedding with prominent parallel shear and phyllitic foliation
	Rake of phyllitic axis; bedding plane
	Shear and phyllitic foliation
	Schistosity
	Gneissosity
	Igneous banding
	Jointing and shear fracture
	Contact (definite, assumed)
	Fault
	Dip of contact
	Dip of fault, rake of slickensides along fault
	Glacial striae














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
LEGEND  
SHEET  
PROVINCE  
OF  
ONTARIO








ELLIOT LAKE  
SUDBURY  
LOCATION  
SHEET  
SCALE - 1" = 25 MI.

CANADIAN JOHN'S MANVILLE CO. LTD. - MATHESON ONTARIO

-  Direction in which lava flows face, indicated by shape of pillows
-  Outcrop
-  Swamp or muskeg
-  Scarp
-  Creek
-  Drill hole
-  Bush road
-  High ground
-  Cabin
-  Shaft
-  Pit or trench
-  Saber
-  Swamp border

- MOPHAR V. L. UNIT
-  Dip angle profile  
North & East - Positive  
South & West - Negative

Scale  
40° - 2"

- GEO-MAG SYMBOLS
-  Contour intervals 500 gammas.
  -  Profile - 1" = 1000 gammas
  -  B.C.S. "1" Magnetic Base Control Station
  -  Geological contact
  -  Fault zone - G - Geological  
M - Magnetic  
T - Topographic

Geol. Survey by - P. Brown and R. Ward  
Scintrex Survey by - I. Dea  
E.M. Survey by - R. A. Maley  
Mag. Survey by - T. Wright

AUG - - 1970

*Stevenson*

VERNON TWP.

TOTTEN TWP.

HYMAN TWP.

VERNON GROUP

No. 2

VERNON GROUP No. 1

SHINER GROUP

PORTIER GROUP

PORTER TWP.

Sutherland L.

Big Swan L.

Swan L.

Porter L.

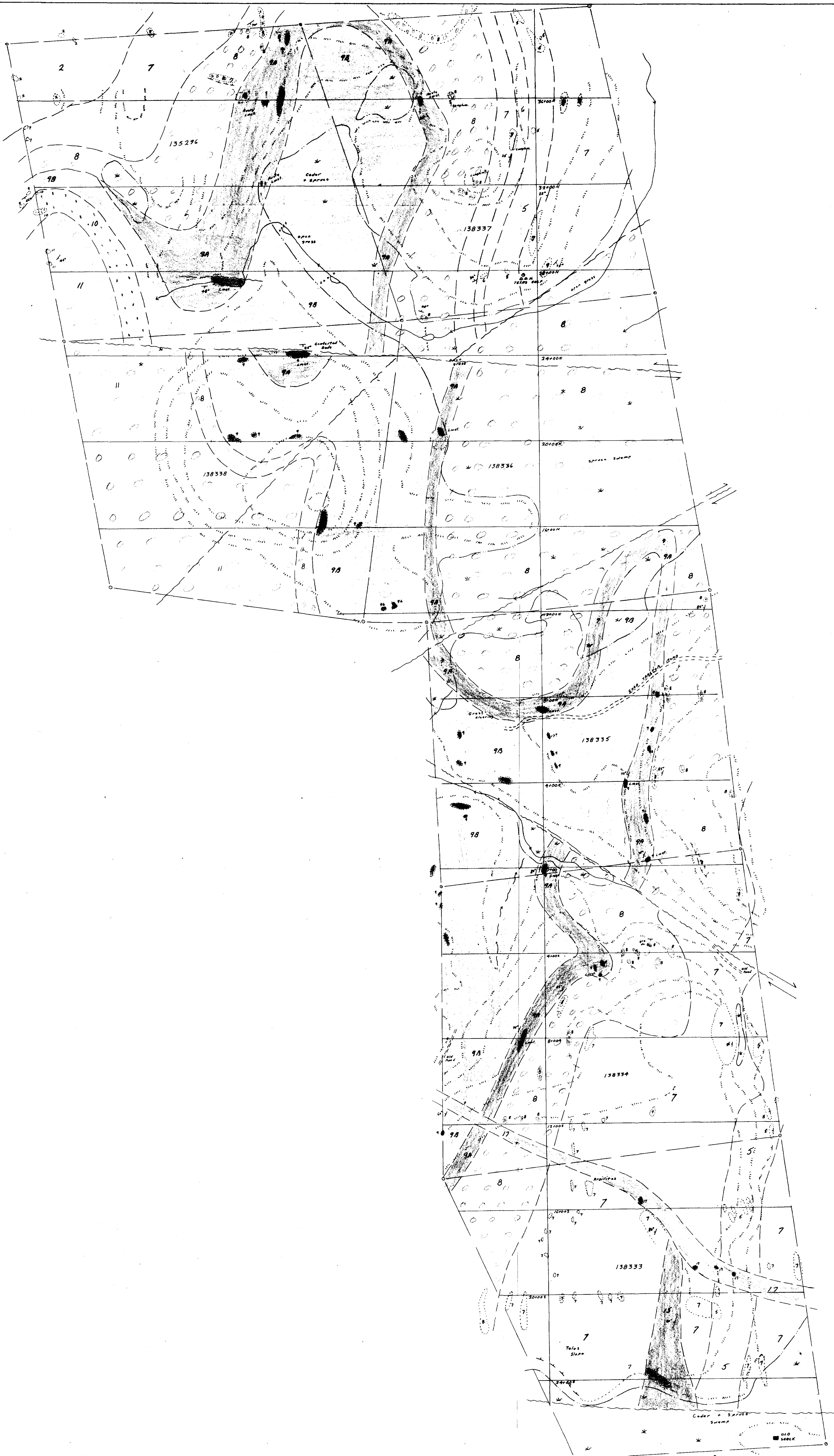
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PROPERTY PLAN SHOWING GEOLOGY

SEP. 10. 1970

1:1320' TWPS ONT.





CANADIAN JOHN MANVILLE CO. LTD. - MATHESON, ONT.

ADJOINS SHEET No.



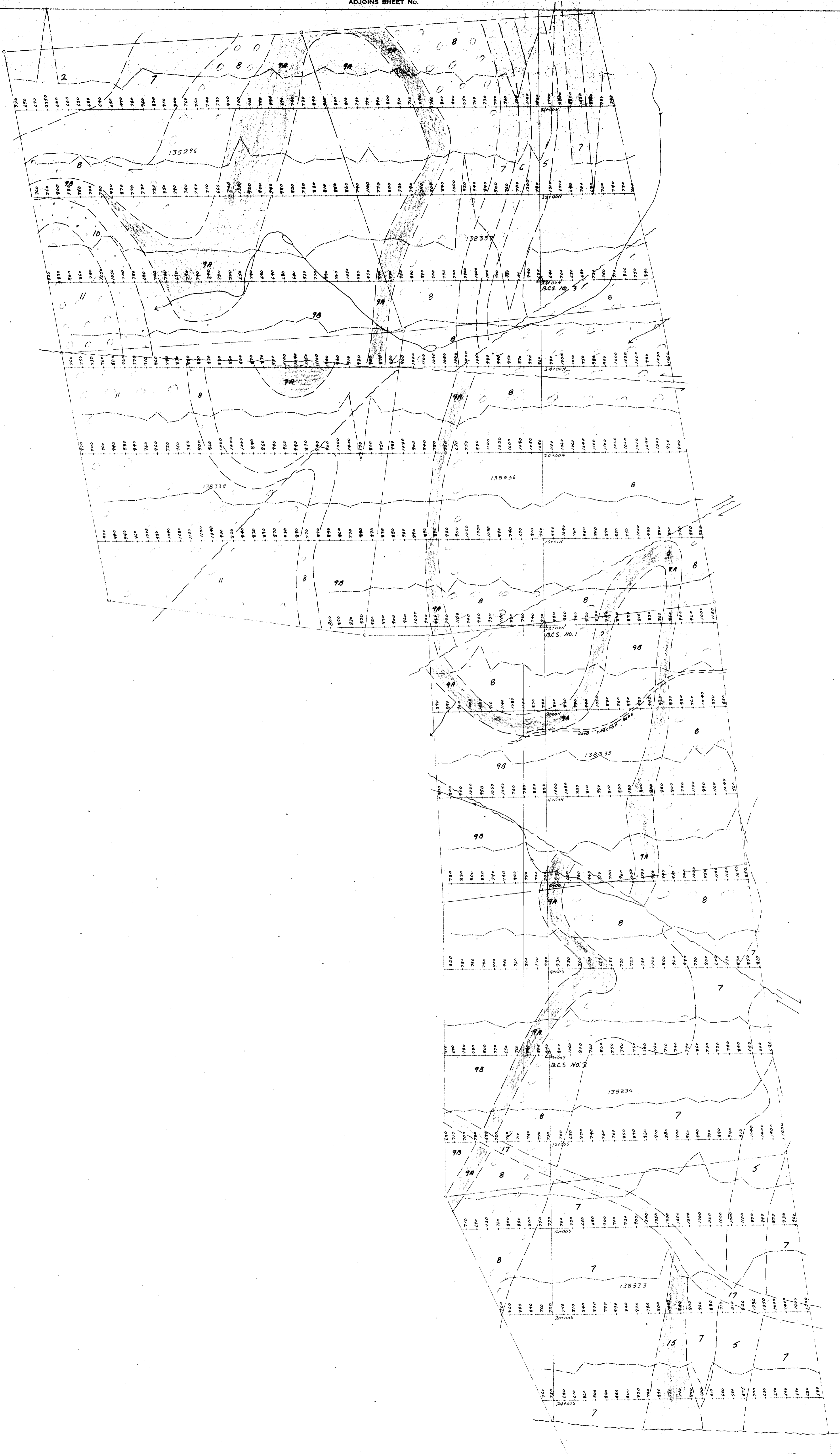
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PISPANEN OPTION GROUP *Handwritten signature* AUG -- 1970

ONT.-1"200'- GEOL. & TOPO. PLAN - -VERNON TWP.







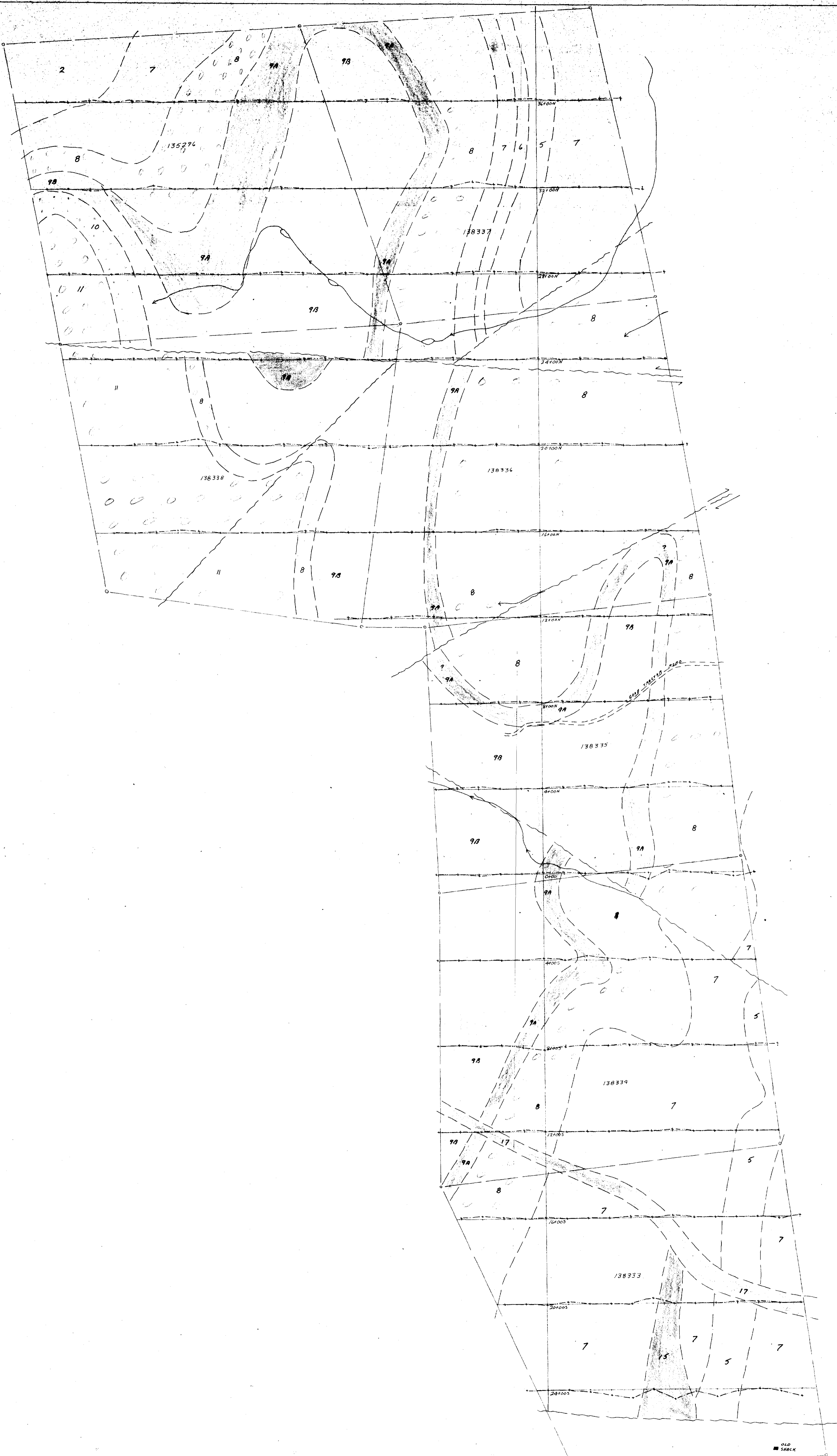
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PIISPANEN OPTION GROUP *August* AUG -- 1977

ONT. - 1:200 - GEO-MAGNETIC PROFILE PLAN - VERNON TWP.



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CANADIAN JENSEN MINING CO. LTD. - HAMILTON, ONT.

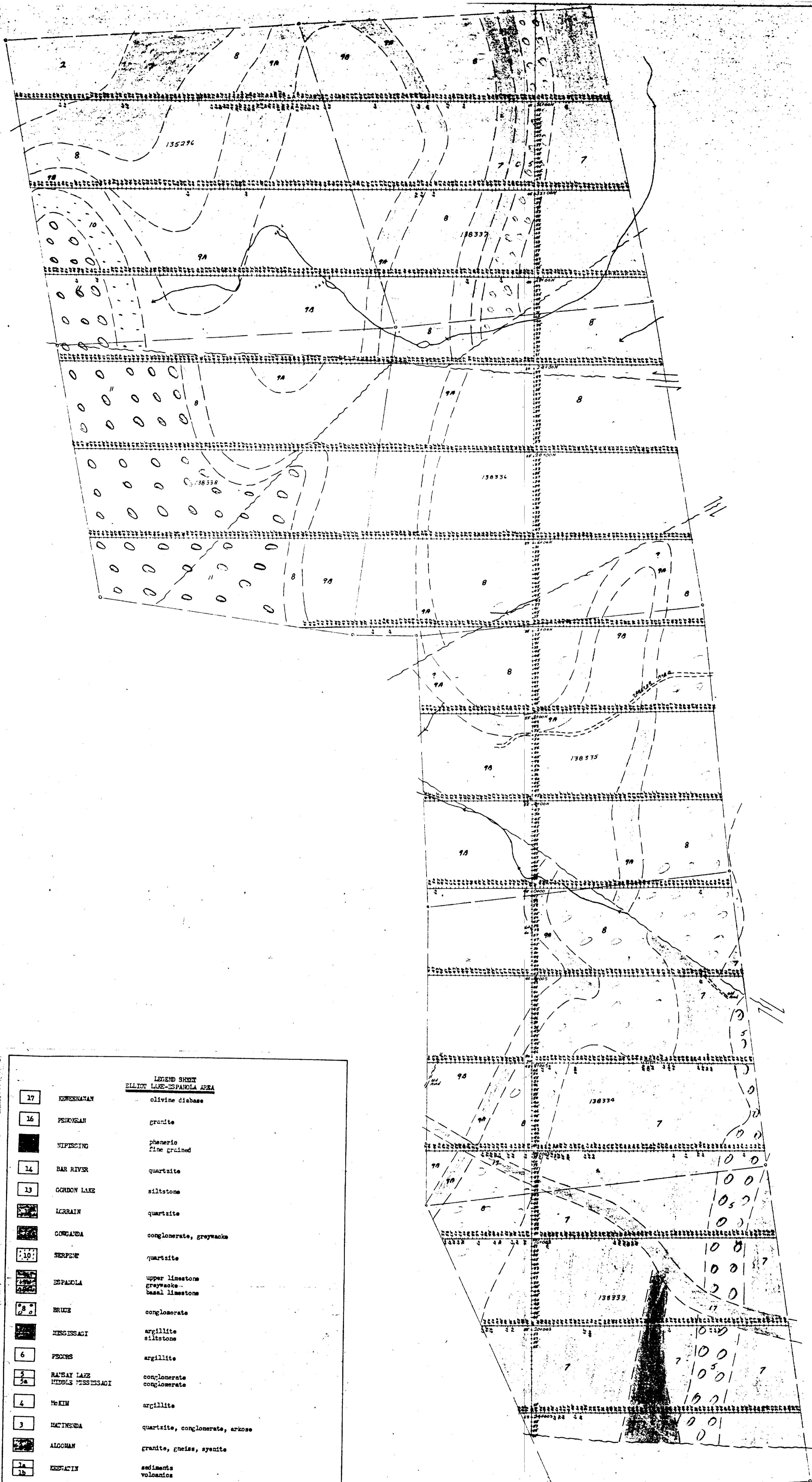


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# VERNON-0010-A1-#4

PIISPANEN OPTION GROUP *Atchafalaya* AUG -- 1970  
 ONT.-1:200-ELECTRO-MAGNETIC PROFILE PLAN-VERNON TWP





**LEGEND SHEET**  
**ELLIOT LAKE-ESPANOLA AREA**

17	KEMESHANAN	olivine diabase
16	PSHOYKAN	granite
	WIPISCING	phaneric fine grained
14	BAR RIVER	quartzite
13	GORDON LAKE	siltstone
	LCRRAIN	quartzite
	CORCA'WA	conglomerate, graywacke
10	SERPENT	quartzite
	ESPANOLA	upper limestone graywacke basal limestone
8	BRUCE	conglomerate
	MISSISSAUGI	argillite siltstone
6	PECCOS	argillite
5	RA'SAY LAKE	conglomerate
5a	MIDDLE MISSISSAUGI	conglomerate
4	McKIM	argillite
3	MACINENDA	quartzite, conglomerate, arkose
	ALGOMAN	granite, gneiss, syenite
1a	KESTACIN	sediments
1b		volcanics

**VERNON-0010-5**

PIISPANEN OPTION GROUP  
ONT.-1-200-SCINTREX, PLAN-  
AUG -- 1979  
-VERNON TWP.

CANADIAN JOHNS MANVILLE CO. LTD. - MATHESON, ONT.

ADJOINS SHEET NO.

