

2.1970

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REPORT
 ON
 A MAGNETOMETER SURVEY
 ON
 THE GAUTHIER TOWNSHIP PROPERTY
 MAYFAIR MINES, LIMITED
 KIRKLAND LAKE AREA

PROJECTS UNIT
by hand

LOCATION & DESCRIPTION

The groups consists of 9 contiguous unpatented mining claims numbered as follows: L.373800 - L.373805 inclusive and 373809 - 10 - 11. Located in the southeast corner of Gauthier Township, the claims lie 12 miles east of Kirkland Lake, Ontario and are crossed by Highway 66, the O. N. Railway and power lines of the Ontario Hydro. Numerous bush roads passable to tractors give access to other parts of the property.

HISTORY

Prior to 1938 the following work had been completed:

1. Line cutting at 200 foot centres over the property north of the Misema River.
2. A geological survey
3. Prospecting, trenching and 3 shallow shafts
4. A drilling program by Olivet Mines
5. A drilling program by Ventures Limited
6. A geophysical survey (type unknown)

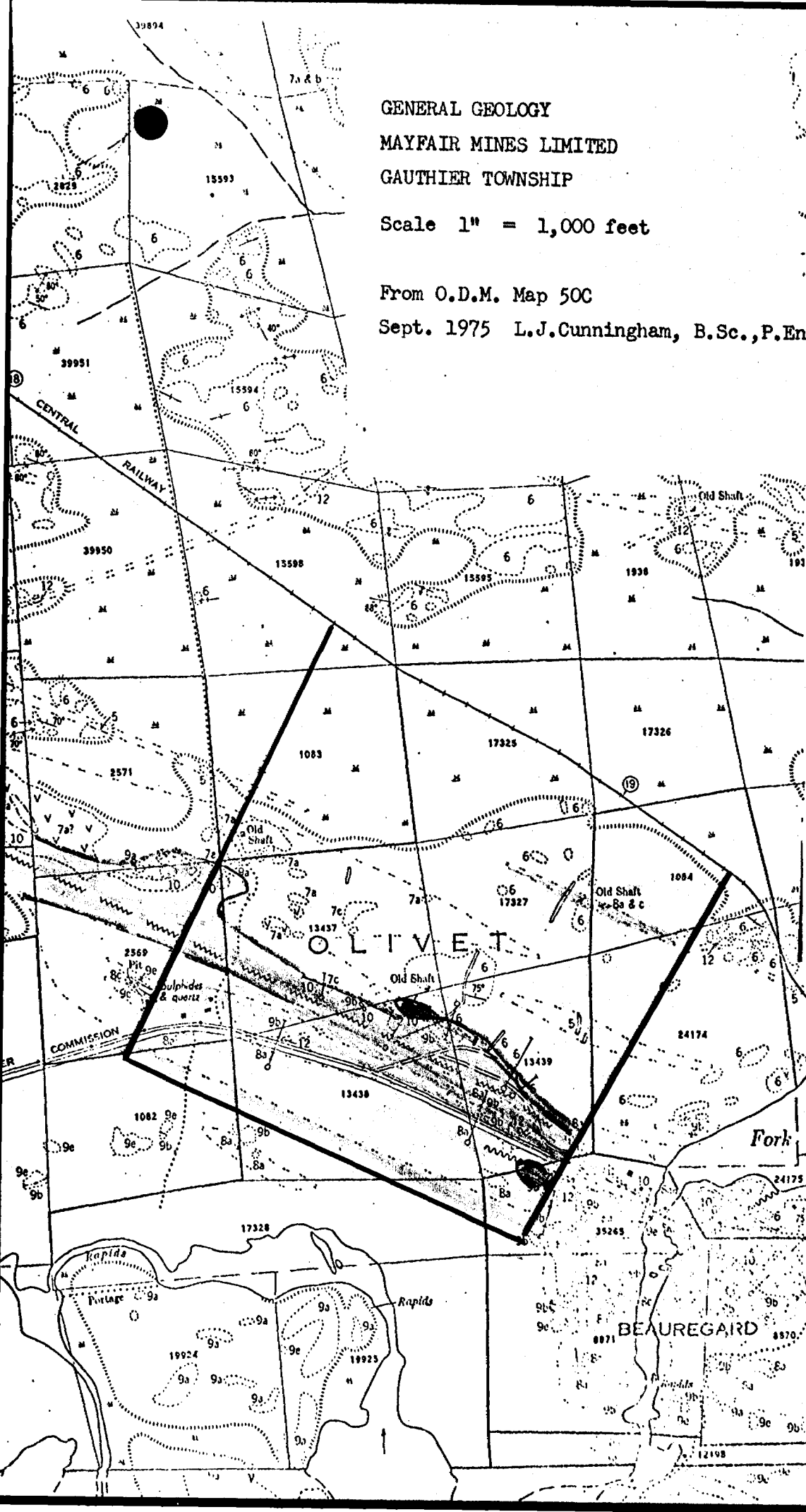
A copy of the geological map exists but unfortunately the rock types are not identified. It does, however, show the locations of drill holes, shafts and trenches. The records of the Ministry of Natural Resources in Kirkland Lake show logs for 29 drill holes, the location of which are shown on Map 50C which accompanies the report. Total footages drilled in the 29 holes was 14,703 feet.

GENERAL GEOLOGY

The Timiskaming Group unconformably overlies a thick volcanic succession up to 19,000 metres thick (Ridler, 1970). The composition of these volcanics ranges from tholoitic basalts to rhyolites, with the more felsic material generally higher in the stratigraphic section.

Conglomerate, sandstone, siltstone, argillite, chert and iron formation are contained in the sedimentary portion of the Timiskaming. The Timiskaming also includes volcanic rocks which are largely trachytic and leucitic in composition, along with some minor basalt and andesite.

FORM NO. LE-111-F REPORT PAPER GRAN & TOY



GENERAL GEOLOGY
MAYFAIR MINES LIMITED
GAUTHIER TOWNSHIP

Scale 1" = 1,000 feet

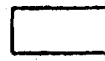
From O.D.M. Map 50C

Sept. 1975 L.J. Cunningham, B.Sc., P.Eng.

LEGEND

QUATERNARY

PLEISTOCENE

 Clay, sand, gravel. These deposits are also represented by the lighter colours on the map.

PRE-CAMBRIAN


KEWEENAWAN or MATACHEWAN

 Diabase.

INTRUSIVE CONTACT

ALGOMAN

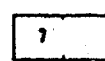
 Carbonated rock or "dolomite."


 Syenite (9a), syenite porphyry (9b); quartz porphyry (9c); lamprophyre (9d); diorite and gabbro (9e).

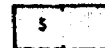
INTRUSIVE CONTACT

TIMISKAMING

 Basic volcanics: basic lava, sometimes pillowed (8a); spherulitic lava (8b); iron formation and chert (8c); talc-chlorite schist (8d).

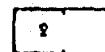
 Acid volcanics: trachyte (7a); trachytic breccia and agglomerate (7b bedded tuff (7c).

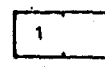
 Fine-grained sediments: greywacke, arkose, quartzite, small amounts of pebble conglomerate.

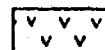
 Conglomerate with some interbedded arkose and greywacke.

EROSIONAL UNCONFORMITY

KEEWATIN

 Basic volcanics: andesite, basalt, and pillow lava (2a), dioritic lava (2b).

 Acid volcanics: rhyolite and trachyte (1a); acid fragmental lava, agglomerate and tuff (1b); bedded tuff (1c).

 Partially carbonated lavas, sediments, and intrusives.

ECONOMIC GEOLOGY OF THE AREA

Several types of gold ores are recognized in the Kirkland-Larder area. In the Town of Kirkland Lake, the mines which were 7 in number occur along the Kirkland Lake fault zone where it cuts a syenitic intrusive. The zone is a network of faults and fractures containing quartz, calcite, pyrite and gold.

At the Kerr Addison Gold Mines Limited, two types of orebodies are recognized. The carbonate type consists of irregular lenses of gold-bearing quartz stockworks lying within the altered and brecciated carbonate zone. The second type, called flow ores, consists of lenses of mineralized and silicified volcanic flow rocks lying south of the carbonate zone. Pyrite is the principal mineralization and contains most of the gold.

The most favourable area on the property is along the Larder Lake 'break' and the carbonate zone which accompanies it. This zone extends for 3,000 feet across the property.

PROCEDURE

Magnetic readings were taken at 50 feet intervals along each traverse line. Diurnal drift was corrected by the standard looping method every two hours or so and distributing the drift linearly with time. A main base station was established at 4W on the base line.

DISCUSSION OF RESULTS

The magnetics are interpreted in light of the known geology which has recently been completed.

A number of outcrops near to and mostly south of the highway are ultramafic volcanics. They are magnetic and are believed to cause the "highs" on 16W and 118W south of the highway. The low on 14E is possibly the result of a syenitic intrusive which is indicated by a small outcrop.

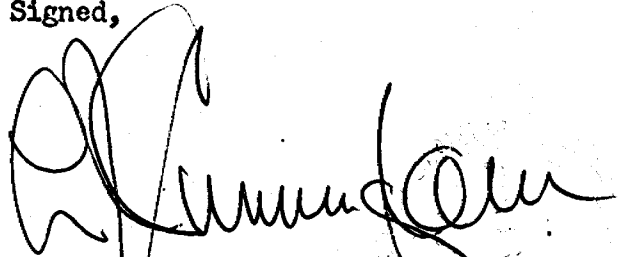
The "high" on 12W on the base line is believed to be caused by foreign material in the form of pipe and drill casing.

A narrow, 3' to 5' wide, band of magnetite iron formation is exposed on lines 2W and 4" at 2N but this band is probably narrow and of limited extent as is evident by the magnetic expression in the vicinity of this band. However, the high reading on 112W, 4N suggests a possible continuation of this iron formation band.

The area of magnetics low north of the iron formation and stretching in a direction a little north of west across the property reflects a wide zone of highly carbonatized rocks.

The band of high readings extending from 110W to 20W between 12N to 14 N is believed to be iron formation. However, there is no outcrop in this area.

Signed,

A handwritten signature in black ink, appearing to read 'L. J. Cunningham', written over a faint circular stamp.

L. J. Cunningham, B.Sc., P.Eng.,
Mining Engineer

Dated at
Kirkland Lake, Ontario
3rd November, 1975

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REPORT
ON
A GEOLOGICAL SURVEY
ON
THE GAUTHIER TOWNSHIP PROPERTY
MAYFAIR MINES, LIMITED
KIRKLAND LAKE AREA

PROJECTS UNIT
Byland

LOCATION & DESCRIPTION

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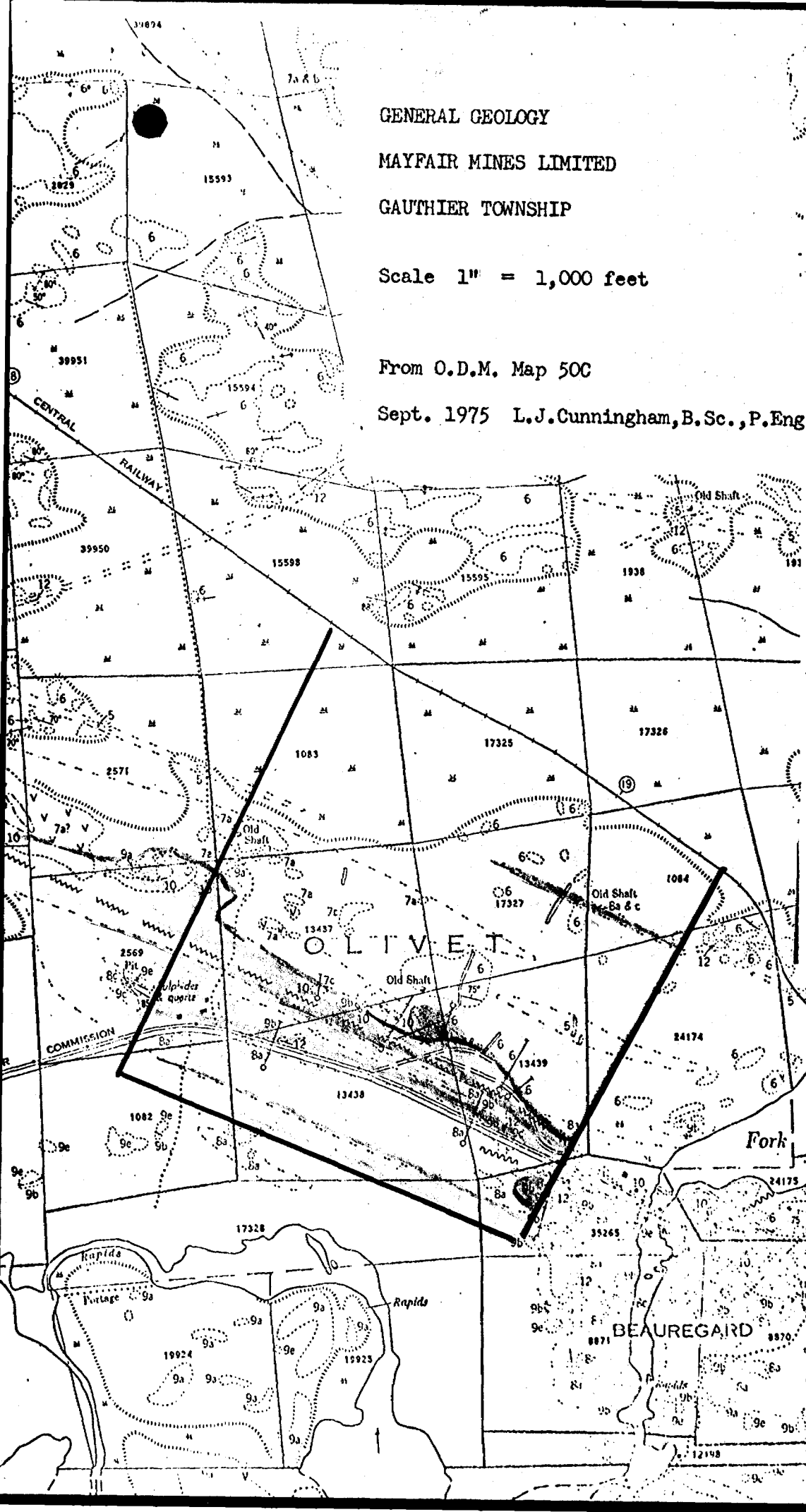
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Conglomerate, sandstone, siltstone, argillite, chert and iron formation are contained in the sedimentary portion of the Timiskaming. The Timiskaming also includes volcanic rocks which are largely trachytic and leucitic in composition, along with some minor basalt and andesite.

FORM NO. L4-811-P REPORT PAPER - GRAND & TOY



GENERAL GEOLOGY

MAYFAIR MINES LIMITED

GAUTHIER TOWNSHIP

Scale 1" = 1,000 feet

From O.D.M. Map 50C

Sept. 1975 L.J. Cunningham, B.Sc., P.Eng.

LEGEND

QUATERNARY

PLEISTOCENE

Clay, sand, gravel. These deposits are also represented by the lighter colours on the map.

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Carbonated rock or "dolomite."*

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Fine-grained sediments: greywacke, arkose, quartzite, small amounts of pebble conglomerate.

Conglomerate with some interbedded arkose and greywacke.

EROSIONAL UNCONFORMITY

KEEWATIN

Basic volcanics: andesite, basalt, and pillow lava (6a); dioritic lava (6b).

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At the Kerr Addison Gold Mines Limited, two types of orebodies are recognized. The carbonate type consists of irregular lenses of gold-bearing quartz stockworks lying within the altered and brecciated carbonate zone. The second type, called flow ores, consists of lenses of mineralized and silicified volcanic flow rocks lying south of the carbonate zone. Pyrite is the principal mineralization and contains most of the gold.

The most favourable area on the property is along the Larder Lake 'break' and the carbonate zone which accompanies it. This zone extends for 3,000 feet across the property.

GEOLOGY OF THE PROPERTY

The property is entirely underlain by a thick sequence of Timiskaming rocks cut by a few minor Algomian intrusives.

The Timiskaming rocks generally strike a little north of west across the property.

The south part of the property is underlain by a band, 600 to 1200 feet wide, of mafic to ultra mafic volcanics which are in part sheared and steeply dipping. They are often magnetic and one large outcrop near L 20 W immediately south of the highway is a black, fine grained, massive, magnetic rock which shows a distinctive polygonal texture. About 1,000 feet east of the property on strike with these mafic volcanics, spinifex texture has been identified in similar ultra mafic rocks.

A narrow band, 10 to 12 feet wide, of sheared carbonated syenite appears to have conformably intruded the volcanics. It has been tested by 2 shallow shafts and shows considerable quartz, carbonate and some fine disseminated pyrite.

Two small fresh looking intrusives, one a uniform, massive, pink syenite, the other a grey syenite porphyry, have intruded the volcanics near the east boundary, south of the highway.

An apparent conformable band of carbonate rock, 200 to 600 feet wide,

lies north of the mafic volcanics and traverses the entire property. It has been tested by many trenches and pits. It is generally grey to brown, crumpled and contoured, cut by numerous quartz veins. Sulphide mineralization is rare. Some fuchsite is evident at a number of locations.

Immediately north of the carbonate zone all the rocks are intensely sheared, contoured, carbonated and difficult to identify.

The east half of the property, north of the carbonate zone, is underlain by metasediments generally thin bedded, contoured and highly carbonated with considerable quartz veins and stringers.

Over the west part of the property a relatively narrow band of talc chloritic-carbonate schist and mafic volcanics borders the massive carbonate zones.

A wide band of fine grained, sheared and often carbonated trachyte flows and tuffs cover the west central portion of the property. They are not uniformly carbonate but contain zones or horizons of carbonated, sheared rock cut by quartz veins and stringers. Strikes are generally a little north of west; dips vary from vertically to steeply north and south.

The balance of the property is largely underlain by metasediments, predominantly argillite and greywacke. They are largely sheared, sericitized and generally carbonated but contain zones or horizons completely altered to a carbonated talc-sericitic schist. Quartz and carbonate stringers and veins are common. They are generally steep dipping but are often crumpled and contoured.

In the northeast quarter several bands of schistose, basic metavolcanics are intercalated with the sediments. In places the metavolcanics are highly carbonated.

In the northwest corner a massive, fresh looking, pink, fine grained syenite invades the sediments. One outcrop of a trachytic tuff lies to the west of the syenite. Elongated, irregular shaped fragments of grey felsic material occur in a light coloured matrix.

Possibly the most surprising results of the mapping and of a magnetometer survey was the defining of two bands of iron formation. Largely by magnetics a band possibly 100' wide can be traced across the property. From 10 W to 20 W, readings to 10,000 gammas (over a background of 500 to 700 gammas) indicate the iron formation. There are no outcrop in this area. To the east the iron formation apparently weakens and grades into chert with minor magnetite

and narrow pyrite bands. Near line 2E, 12N, narrow vertical bands of well bedded chert with parallel thin layers of pyrite are evident in pits within a heavily carbonatized zone containing massive carbonate.

Immediately north of the main carbonate zones a narrow band of lean magnetite iron formation, 3 to 5 feet wide, can be traced for about 1,000 feet. It is highly irregular and was only traced by detailed geophysics, and stripping over magnetic highs.

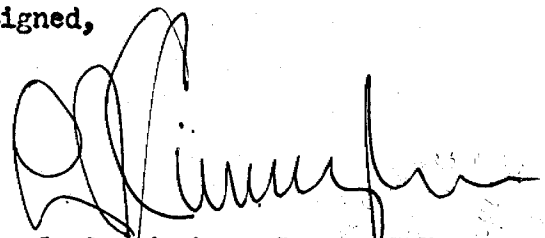
Dr. R. H. Ridler, in Vol. 21, 1970, the Geological Association of Canada publication, has proposed that the carbonate zones are carbonate facies exhalites and are genetically related to the oxide and sulphide chemical facies. Ridler further suggests that the commercial gold deposits found in the carbonate zones are syngenetic.

Observations on the Mayfair property appear, in the writer's opinion, to support Dr. Ridler's proposals.

Surface prospecting has been intensive as is evident by deep and extensive trenches, rock pits and shallow shafts. 39 drill holes have been put down - mostly in the main carbonate zone immediately north of the highway. Results to date have been disappointing but the potential of the numerous carbonates zones is by no means eliminated.

If Dr. Ridler's theory is correct, then the north band of iron formation deserves further consideration.

Signed,



L. J. Cunningham, B.Sc., P.Eng.,
Mining Engineer

Dated at
Kirkland Lake, Ontario
3rd November, 1975



Ministry of Natur

GEOPHYSICAL - GEOLOGIC
TECHNICAL DATA STATEMENT



32D04SW0070 2.1970 GAUTHIER

900

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS

AM

NOV 5 1975

RECEIVED

NOV 12 1975

by hand

Type of Survey(s) Geological
Township or Area Gauthier
Claim Holder(s) Mayfair Mines Limited,
Suite 508, 100 Adelaide St. W., Toronto,
Ont.
Survey Company _____
Author of Report L. J. Cunningham
Address of Author 1 McPhee Ave., Kirkland Lake, Ontario
Covering Dates of Survey 15 August - 30 October, 1975
(linecutting to office)
Total Miles of Line Cut _____

PROJECTS UNIT
MINING CLAIMS TRAVERSED
List numerically

- L. 373800
(prefix) (number)
- L. 373801
- L. 373802
- L. 373803
- L. 373804
- L. 373805
- L. 373809
- L. 373810
- L. 373811

*claims not completely covered
= 1 3/4 claims
allow 17 days per claim
no credits for circled claims*

TOTAL CLAIMS 9

SPECIAL PROVISIONS
CREDITS REQUESTED

DAYS
per claim

ENTER 40 days (includes
line cutting) for first
survey.

ENTER 20 days for each
additional survey using
same grid.

Geophysical

--Electromagnetic _____

--Magnetometer _____

--Radiometric _____

--Other _____

Geological 20

Geochemical _____

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

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

DATE: 3 November 1975 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. _____ Qualifications 63.1603

Previous Surveys

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

If space insufficient, attach list

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations _____ Number of Readings _____

Station interval _____ Line spacing _____

Profile scale _____

Contour interval _____

MAGNETIC

Instrument _____

Accuracy - Scale constant _____

Diurnal correction method _____

Base Station check-in interval (hours) _____

Base Station location and value _____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: Fixed transmitter Shoot back In line Parallel line

Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

Base station value and location _____

Elevation accuracy _____

INDUCED POLARIZATION
RESISTIVITY

Instrument _____

Method Time Domain Frequency Domain

Parameters - On time _____ Frequency _____

- Off time _____ Range _____

- Delay time _____

- Integration time _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____



Ministry of Natural Resources

RECEIVED 2-1976
File NOV 12 1975

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT

LARD PROJECTS ONT. E
MINING DIV.
RECEIVED
NOV 5 1975
PM
7 10 11 12 1 2 3 4 5 6

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Magnetometer
Township or Area Gauthier
Claim Holder(s) Mayfair Mines Limited
Suite 508, 100 Adelaide St. W., Toronto,
Ont.
Survey Company _____
Author of Report L. J. Cunningham
Address of Author 1 McPhee Ave., Kirkland Lake, Ontario
Covering Dates of Survey 15 August, - 30 October, 1975
(linecutting to office)
Total Miles of Line Cut _____

MINING CLAIMS TRAVERSED
List numerically

- L. 373800 ✓
(prefix) (number)
- L. 373801 ✓
- L. 373802 1/2
- L. 373803 ✓
- L. 373804 1/2
- L. 373805
- L. 373809 ✓
- L. 373810 ✓
- L. 373811 3/4

claims not completely covered
= 1 3/4 claims
Allow 17 days per claim
- no credits for circled claim

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

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

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

DATE: 3 Nov. 1975 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. L.P. Qualifications 63.1603

Previous Surveys

File No.	Type	Date	Claim Holder
<u>2.1604</u>	<u>E.M</u>	<u>1974</u>	<u>Mayfair Mines</u>

TOTAL CLAIMS 9

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations 560 Number of Readings 560
Station interval 100 ft. with 25' detail Line spacing 200 feet
Profile scale
Contour interval 100 gammas

MAGNETIC

Instrument McPhar M 700
Accuracy - Scale constant Vertical Field - 10 gammas
Diurnal correction method By a looping method & distribution of the drift
Base Station check-in interval (hours) 2 hours
Base Station location and value Base Line - 4W - 995 gammas

ELECTROMAGNETIC

Instrument
Coil configuration
Coil separation
Accuracy
Method: [] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency (specify V.L.F. station)
Parameters measured

GRAVITY

Instrument
Scale constant
Corrections made
Base station value and location
Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument
Method [] Time Domain [] Frequency Domain
Parameters - On time Frequency
- Off time Range
- Delay time
- Integration time
Power
Electrode array
Electrode spacing
Type of electrode

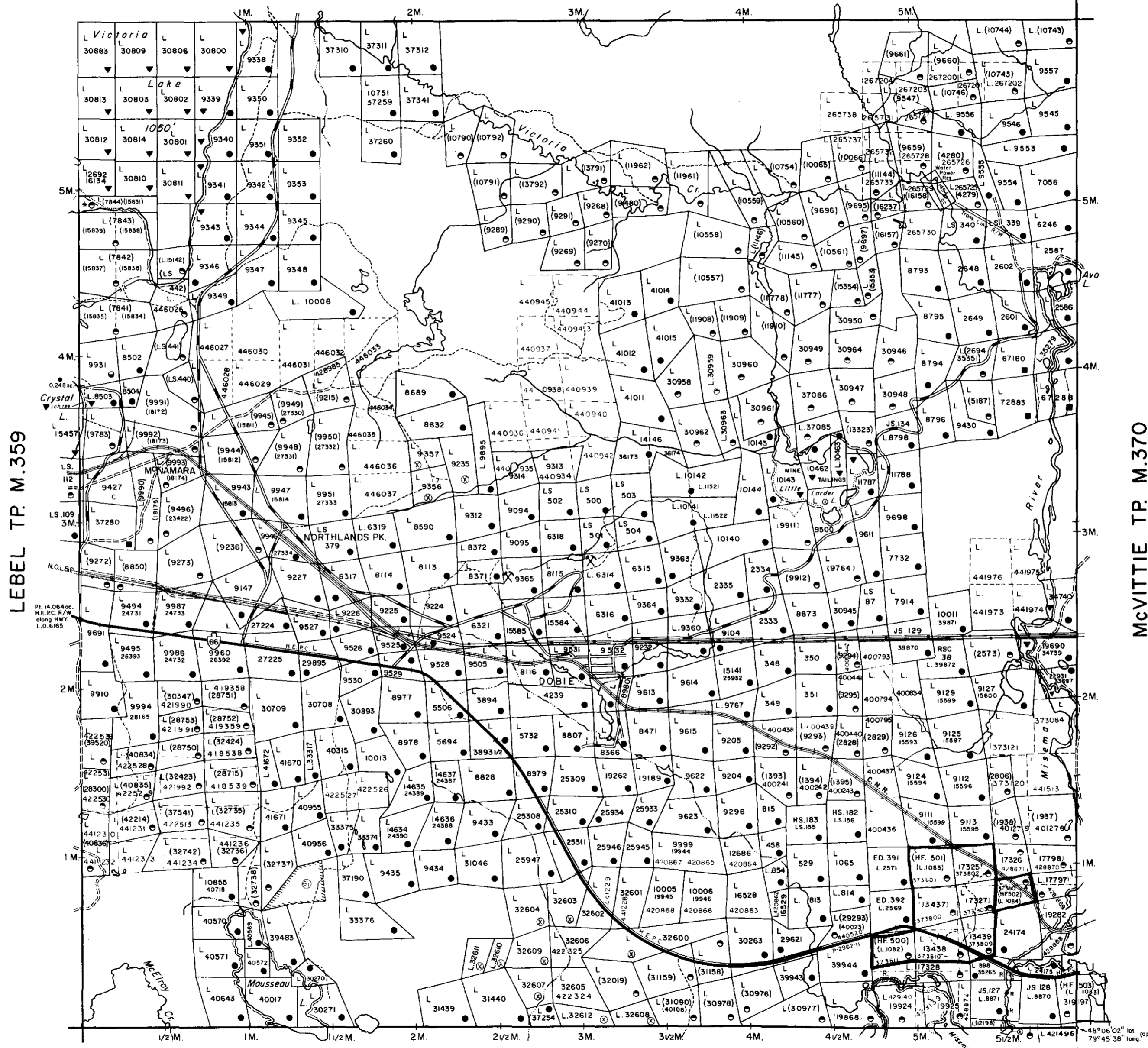
NOTES

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

M.T.C. File 101421 Pit No.1666

- MINING LANDS -
DATE OF ISSUE
NOV 17 1975
MINISTRY OF NATURAL RESOURCES

ARNOLD TP. M.321



LEBEL TP. M.359

MCVITTIE TP. M.370

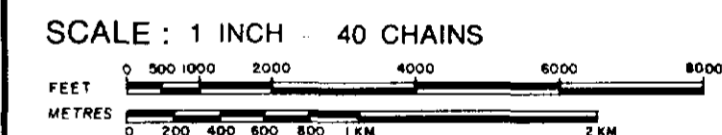
McELROY TP. M.366

LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
 - TOWNSHIPS, BASE LINES, ETC.
 - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
 - LOT LINES
 - PARCEL BOUNDARY
 - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
CROWN LAND SALE	C.S.
ORDER-IN-COUNCIL	OC
RESERVATION	
CANCELLED	
SAND & GRAVEL	

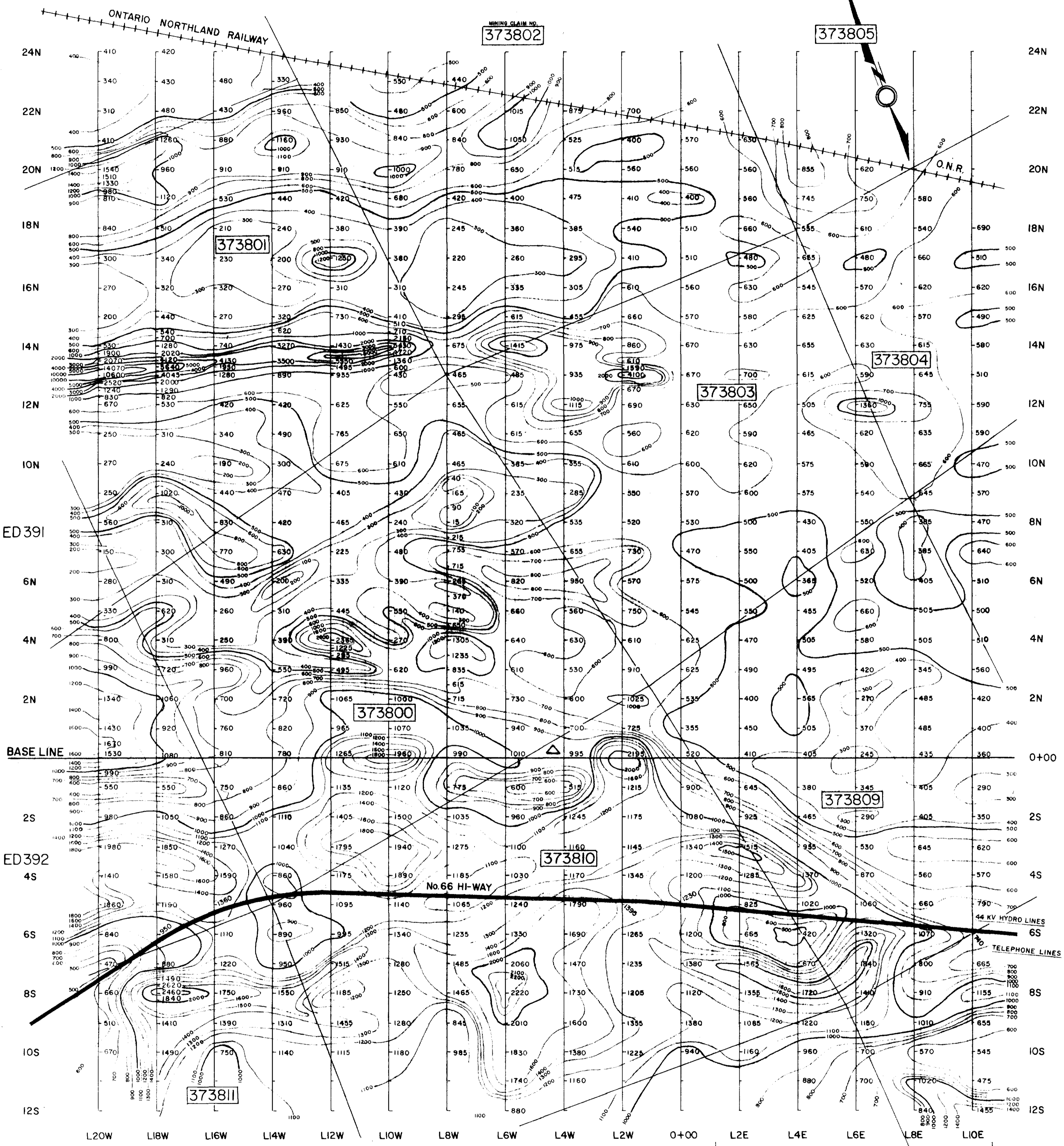


ACRES	HECTARES
40	16

TOWNSHIP **2-1970**
GAUTHIER
 DISTRICT **TIMISKAMING**
 MINING DIVISION **LARDER LAKE**

Ministry of Natural Resources
 Ontario Surveys and Mapping Branch
 Date **JAN. 1973** Plan No. **M.350**
 Whitney Block Queen's Park, Toronto





INSTRUMENT USED: McPHAR M 700
 ACCURACY: VERTICAL FIELD - 10 GAMMAS
 COVERING DATES: AUGUST 23 - 29, 1975
 Δ: BASE STATION

MAGNETOMETER SURVEY
MAYFAIR MINES LIMITED
GAUTHIER TOWNSHIP
LARDER MINING DIVISION

ONTARIO
 SCALE: 1" = 200'

KIRKLAND LAKE, ONT
 OCTOBER 25th, 1975

L. J. Cunningham
 L. J. CUNNINGHAM, B.Sc. P.E.



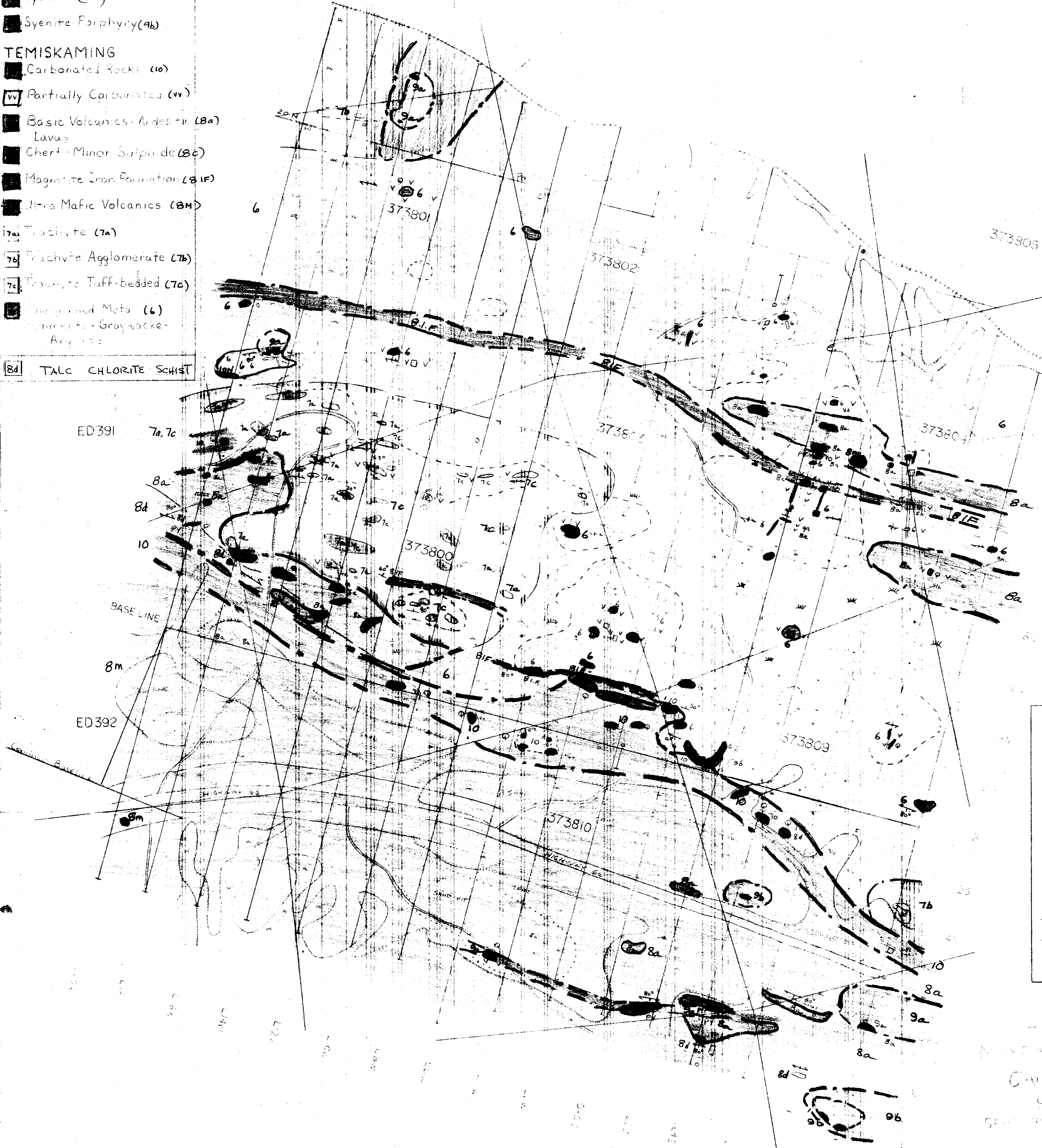
LEGEND

ALGOMAN

- Syenite (9a)
- Syenite Porphyry (9b)

TEMISKAMING

- Carbonated Rocks (10)
- Partially Carbonated (10v)
- Basic Volcanics - Andesitic (8a)
Lavas
- Chert - Minor Sulphide (8c)
- Magnetite Iron Formation (8IF)
- Ultra Mafic Volcanics (8M)
- Trachyte (7a)
- Trachyte Agglomerate (7b)
- Trachyte Tuff-bedded (7c)
- Unmetamorphosed Meta (6)
Gneiss - Graywacke - Argillite
- TALC CHLORITE SCHIST (8d)



SYMBOLS	
□	Pit
○	Drill Hole
---	Geological Contact Approx.
~>	Vertical Schistosity
~>	Inclined Schistosity

GEOLOGY
 MAP RELATIVE TO
 CAUTION TWP
 SCALE 1:200
 SHEET NO. 11 - LUNenburg
 1975

File 2.1970
[Signature]
 2 Nov 1975

