



32D04NW0279 2.12282 GAUTHIER

010

REPORT
ON
GEOLOGICAL MAPPING
MARY ANN - AVALARD MINES PROPERTY
GAUTHIER TOWNSHIP
LARDER LAKE MINING DIVISION
KIRKLAND LAKE AREA, ONTARIO

PANTHCO RESOURCES INC.
595 Argus Road
OAKVILLE, Ontario

February 27, 1989

E. A. Gallo, B.Sc., F.G.A.C.
Gallo Exploration Services Inc.

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INTRODUCTION

Panthco Resources Inc. holds 54 claims under option in the Kirkland Lake-Larder Lake gold district of northern Ontario. The property includes ground that was formerly held by Mary Ann Mines Ltd., and Avalard Mines Ltd. The property adjoins three former-producing gold mines - the Upper Beaver Mine to the north, the Upper Canada Mine to the west, and the McBean Open Pit Mine (formerly the Queenston Mine) to the southwest.

Previous exploration performed in the 1940's included diamond drilling. Assays of up to 0.75 oz. gold per ton, 6.95 oz. silver per ton, and 6.12% copper across variable widths were reported.

As part of a multi-phase exploration program of the property, Panthco Resources Inc. performed geological mapping in the fall of 1988. This report provides details regarding the mapping, and discusses the technical results obtained on 21 of the claims.

GEOLOGICAL MAPPING

PANTHCO RESOURCES INC.

MARY ANN - AVALARD MINES PROPERTY

GAUTHIER TOWNSHIP

LARDER LAKE MINING DIVISION

KIRKLAND LAKE AREA, ONTARIO

LOCATION

The 54 claims are situated in the east central part of Gauthier Township, and the west central part of adjoining McVittie Township. The property lies 12 miles (19 kilometers) due east of the town of Kirkland Lake, Ontario. Figure 1 shows the general location.

CLAIMS DATA

All 54 of the claims comprising the property are contiguous. Only 21 of the claims currently require assessment work credits, and they are numbered:

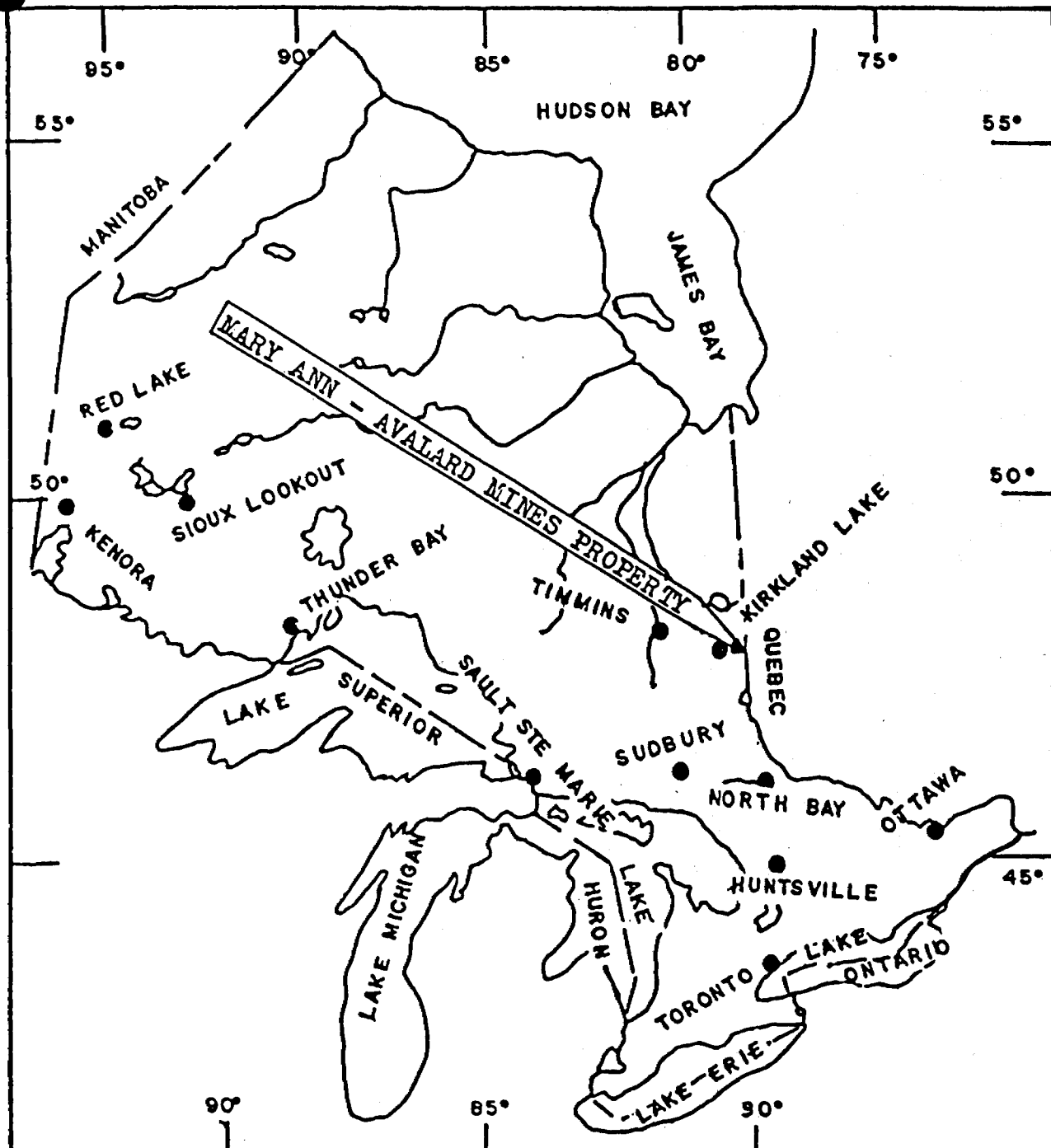
L 859153 - 56, inclusive	(4)
L 859612 - 15, inclusive	(4)
L 884026 - 28, inclusive	(3)
L 884525 - 28, inclusive	(4)
L 894420	(1)
L 982246 - 49, inclusive	(4)
L 982471	<u>(1)</u>

TOTAL 21 claims

These 21 claims are shown outlined in red on Figure 2.

ACCESS

The property is easily reached by car. The gravel road to the old Upper Beaver Mine provides convenient access to the western and northern portions of the property from Provincial Highway 66.



PROVINCE OF ONTARIO MARY ANN - AVALARD MINES PROPERTY
 GAUTHIER & MCVITTIE TOWNSHIPS
 KIRKLAND LAKE AREA, ONTARIO.

FANTHCO RESOURCES INC.
 LOCATION MAP

Scale: 1:1,000,000 Sept. 1987.

FIGURE 1

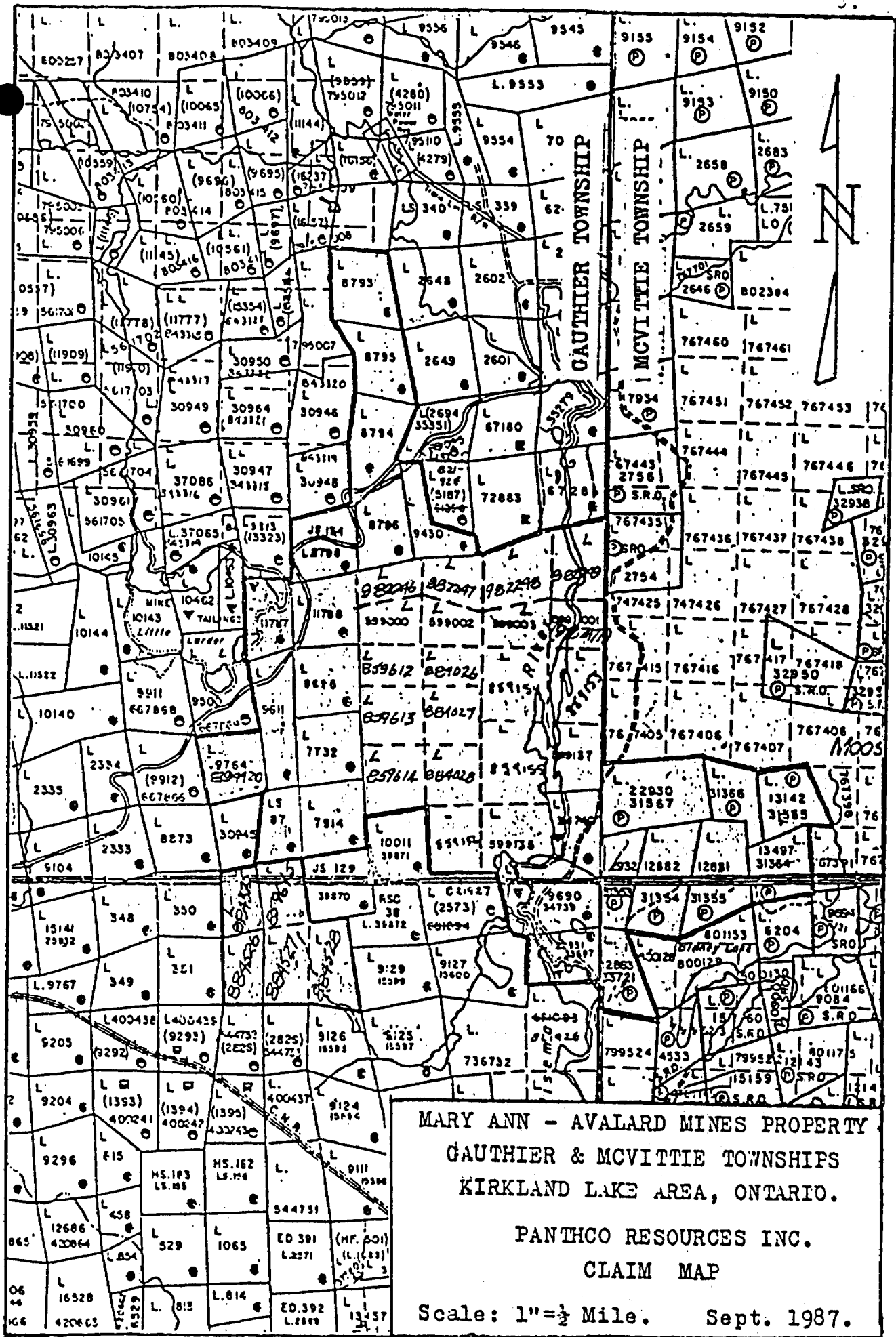


FIGURE 2

Another gravel road off Highway 66 follows the east bank of the Misema River, and provides access to the eastern portion of the property. The hydro electric transmission line through the southern part of the property serves as a walking trail to the southern portions of the property.

TOPOGRAPHY

The ground is relatively flat. Outcroppings of rock form low hills up to 60 feet (20 meters) high. Ridges of sand and gravel provide similar topographic features, while streams incised into varved clays have formed valleys as much as 60 feet (20 meters) deep.

LINECUTTING

A Base Line with Azimuth 90 was established, and Cross Lines were cut at 100 meter intervals perpendicular to the Base Line. Secondary base lines and tie lines were cut as needed at 25 meter intervals, and Stations were established by chaining marked by pickets implanted firmly into the ground at each site. A total of approximately 22.2 kilometers of lines were cut. On the 5 claims in the southwest corner of the property, lines were run by pace and compass, and brushed out as needed. Stations were established by pacing, at 25 meter intervals, and were marked by flagging tied to the brush at each site. An additional 6.1 kilometers of lines were run in this manner.

GENERAL GEOLOGY

The property is underlain mainly by a sequence of Archean age meta-volcanic and metasedimentary rocks which are part of the Abitibi greenstone belt. The rocks trend generally east-west, and dip vertically. Dykes and small bodies of quartz porphyry have intruded the metavolcanics and metasediments.

DETAILED GEOLOGY

Nine lithologic units were recognized during the detailed geological mapping of the property. All are Precambrian in age, and are shown summarized in Table I.

Unit 1 is an intermediate metavolcanic that occurs within felsic metavolcanics at their contact with a large felsic intrusive. It is medium grey in colour on the weathered surface, and slightly

darker on fresh surfaces. Minor carbonatization is ubiquitous. Shearing is common. Occasional rusty patches are present. The unit trends generally east-west, and dips vertically.

Units 2 and 3 are felsic metavolcanics. The former is undivided, and the latter is a pyroclastic. They are pale grey in colour on the weathered surface, and medium grey on the fresh surface. Carbonatization to varying degrees is ubiquitous. These units trend in a general east-west direction, and dip vertically or steeply to the south. They occur in the north half of the property, north of the metasedimentary units. The undifferentiated felsic metavolcanics are generally massive, with narrow tuffaceous interbeds. The pyroclastic felsic metavolcanics are generally agglomerates, with fragments ranging between 5-10 cm (2-4") in size. Narrow quartz threads and stringers frequently cut randomly through these units, generally wherever the carbonatization is more intense.

Units 4 and 5 are felsic intrusives. Unit 4 is a quartz feldspar porphyry that occurs as 3 small dyke-like bodies in the east central portion of the property. All trend generally NE-SW. They are medium grey in colour on the weathered surface, and slightly darker on the fresh surface. Both the quartz and the feldspar phenocrysts are small, averaging less than 1 mm. in size. Unit 5 is a quartz porphyry. It occurs as a large intrusive body in the north central part of the property. It too is medium grey in colour on the weathered surface, and slightly darker on the fresh surface. The quartz phenocrysts vary in size from less than 1 mm to about 3 mm.

Units 6 and 7 are metasediments. The former is conglomerate, and the latter is greywacke. The conglomerate occurs interbedded with the greywacke as a narrow bed that trends E-W through the centre of the property. Dips are generally vertical. The pebbles and boulders in the conglomerate are loosely packed and matrix-supported. The boulders range up to 20 cm (8") in size along their long axis, and are generally stretched so that their long axis parallels the direction of bedding. The composition of the pebbles and boulders varies from rhyolitic to quartz porphyritic, and quartz feldspar porphyritic. Pebbles of white secondary quartz and of black jasper are occasionally present. The greywacke occurs as a large unit in the west central and SW portions of the property in addition to the narrow E-W bed in the centre of the property. The greywacke is usually grey in colour, both on the weathered and fresh surfaces. Locally the greywacke is arkosic. The greywacke in the SW part of the property trends N-S and dips vertically or steeply to the E, whereas the greywacke in the west central part of the property trends E-W and dips either vertically or steeply to the south. Uncertain top determinations suggest that tops are to the south.

Alkalic metavolcanics form Units 8 and 9. Unit 8 is a trachytic pyroclastic, while Unit 9 is an undifferentiated trachyte. These units are very similar to the felsic metavolcanics designated as

TABLE ITABLE OF LITHOLOGICAL UNITS

Early Precambrian

Alkalic Metavolcanics

Unsubdivided Trachyte

Trachytic Pyroclastics

Metasediments

Greywacke

Conglomerate

Felsic Intrusives

Quartz Porphyry

Quartz Feldspar Porphyry

————— INTRUSIVE CONTACT —————

Felsic Metavolcanics

Unsubdivided

Pyroclastics

Intermediate Metavolcanics

Unsubdivided

Units 2 and 3, except that they are pinkish-grey in colour. They occur in the south part of the property, south of the thin E-W bed of metasediments, and east of the large bed of greywacke. The trachyte pyroclastics contain fragments up to 15 cm (6") in size. The undifferentiated trachytes are generally massive. In the extreme south part of the property, these units trend generally N-S, and dip 60°-70° to the east. Further north, these units dip vertically. Still further north, where these units occur south of the narrow E-W band of metasediments, these units trend generally E-W, and dip vertically. These units are often sheared and blocky and locally are fissile. Carbonatization to varying degrees is generally present. Locally, the carbonatization is extremely intense, and only the stratigraphic position of the altered outcrops allows their classification. Where the rocks are intensely carbonatized they weather to a rusty reddish colour, and the rind of weathering may be as much as 2 cm (3/4") thick. Quartz threads, stringers, and veins are generally present, especially where the carbonitization is intense. Sulphides are sometimes present in the quartz veins and stringers.

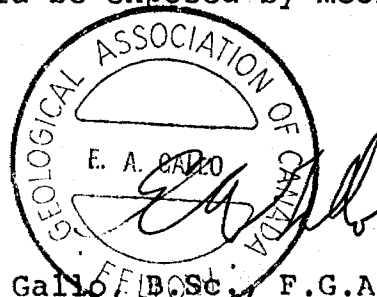
For such a thick sequence, the trachyte appears to end rather abruptly at its western terminus, where it gives way to greywacke. The actual contact of the 2 rock types was not observed in outcrop. It could be a fault contact, or merely a natural depositional sequence in a region of extreme topographic paleosurfaces.

CONCLUSIONS

The detailed geological mapping located areas of shearing, intense carbonatization, quartz veining, and porphyry intrusions. All of these features can be associated with gold mineralization. As well, the detailed geological mapping established the presence of the same lithologies and the same lithological sequences that are known to host economic quantities of gold mineralization in the general area.

RECOMMENDATIONS

Additional exploration work is warranted on the ground. The areas of greatest shearing, most intense carbonatization, and greatest concentration of quartz veining should be exposed by mechanical stripping, and sampled.



February 27, 1989
Toronto, Ontario

E. A. Gallo, B.Sc., F.G.A.C.
Gallo Exploration Services Inc.

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Ministry of
Natural
Resources

W8908.75
Report of Work
(Geophysical, Geological,
Geochemical and Expenditures)

DOCUM
W890



32004NW0279 2.12282 GAUTHIER

900

Type of Survey(s): **Geological** Township or Area: **Gauthier Twp. (G-3211)**

Claim Holder(s): **PANTHCO RESOURCES INC.** Prospector's Licence No.: **T-5050**

Address: **595 Argus Road, Oakville, Ontario L6J 3J4**

Survey Company: **Gallo Exploration Services Inc.** Date of Survey (from & to): **07 09 88 10 10 88** Total Miles of line Cut: **22.2 kms**

Name and Address of Author (of Geo-Technical report): **E. A. Gallo, 148 Allanhurst Drive, Islington, Ontario M9A 4K7**

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
For each additional survey: using the same grid: Enter 20 days (for each)	Geological	20
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side ANDS SECTION and enter 180 days for each claim	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Airborne Credits	Electromagnetic	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim		Expend. Days Cr.	Mining Claim		Expend. Days Cr.
Prefix	Number		Prefix	Number	
			L	859153	
				859154	
				859155	
				859156	
				859612	
				859613	*
				859614	*
				859615	
				884026	
				884027	*
				884028	
				884525	
				884526	
				884527	
				884528	
				894420	
				982246	
				982247	
				982248	
				982249	
				982471	

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures: \$ + 15 = Total Days Credits:

Instructions: Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE
APR 12 1989
RECEIVED

Date: **Feb. 27/89** Recorded by: *[Signature]*

For Office Use Only

Total Days Cr. Recorded: **360** Date Recorded: **Mar 1/89** Mining Recorder: *[Signature]*

Date Approved as Recorded: **28 March 89** Branch Director: *[Signature]*

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: **E. A. Gallo, 148 Allanhurst Drive, Islington, Ontario M9A 4K7**

Date Certified: **Feb. 27/89** Certified by: *[Signature]*



File _____

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

Type of Survey(s) GEOLOGICAL
Township or Area Gauthier Twp. (G-3211)
Claim Holder(s) PANTHCO RESOURCES INC.
595 Argus Road, Oakville, Ontario L6J 3J4
Survey Company Gallo Exploration Services Inc.
Author of Report E. A. Gallo, 148 Allanhurst Drive
Address of Author Islington, Ontario M9A 4K7
Covering Dates of Survey Sept. 7 - Oct. 10, 1988
(linecutting to office)
Total Miles of Line Cut 22.2

<u>SPECIAL PROVISIONS 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 _____	_____
	-Radiometric _____	_____
	-Other _____	_____
	Geological _____	20
	Geochemical _____	_____

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: RECEIVED SIGNATURE: [Signature]
Author of Report or Agent

MAR 22 1989

Res. Geol. MINING LANDS SECTION Communications 63-2227

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

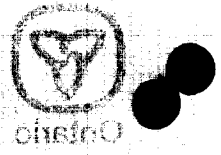
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<u>List numerically</u>	
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L	859154
L	859155
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L	859612
L	859613
L	859614
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L	884026
L	884027
L	884028
L	884525
L	884526
L	884527
L	884528
L	894420
L	982246
L	982247
L	982248
L	982249
L	982471
TOTAL CLAIMS <u>21</u>	

OFFICE USE ONLY

If spec insufficient, attach list

GEOPHYSICAL TECHNICAL DATA

Ministry of
Northern Development
and Mines
Ontario



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 _____

Instrument _____

Scale constant _____

Corrections made _____

Base station value and location _____

Elevation accuracy _____

GRAVITY

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 _____

**INDUCED POLARIZATION
RESISTIVITY**

RECEIVED
MAR 23 1983

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

Corrections made _____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth - include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

Additional information (for understanding results) _____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY - PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

Values expressed in: per cent
p. p. m.
p. p. b.

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

Others _____

Field Analysis (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Field Laboratory Analysis

No. (_____ tests)

Extraction Method _____

Analytical Method _____

Reagents Used _____

Commercial Laboratory (_____ tests)

Name of Laboratory _____

Extraction Method _____

Analytical Method _____

Reagents Used _____

General _____

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M.+S. - MINING AND SURFACE RIGHTS

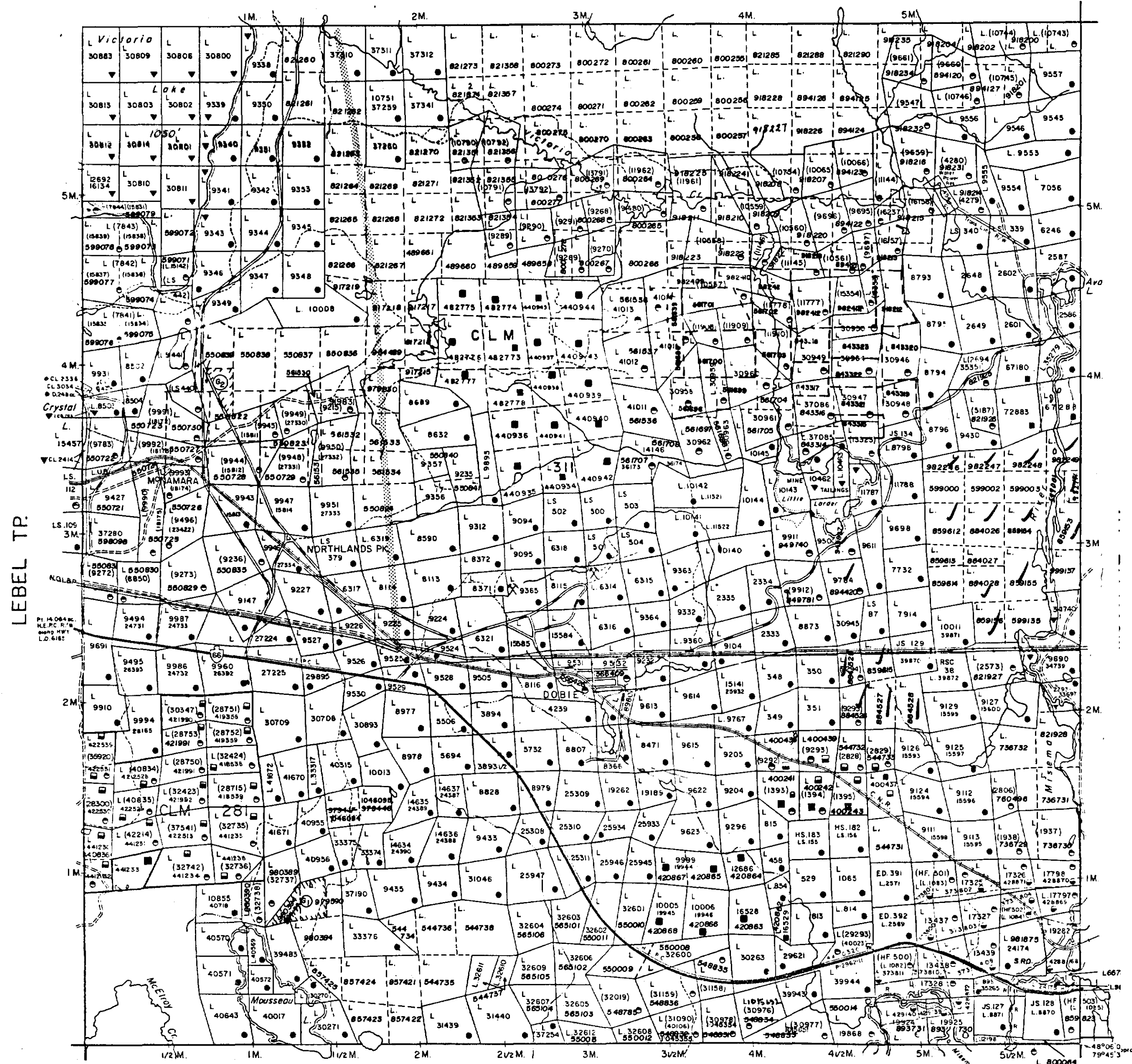
Description Order No. Date Disposition File

BARRICK POWER LINE
(Application pending under Public Lands Act)

SAND and GRAVEL

- M.T.C. PIT No. 1888 FILE 101421
- M.T.C. PIT 3F-27

ARNOLD TP.



McELROY TP.

LEGEND

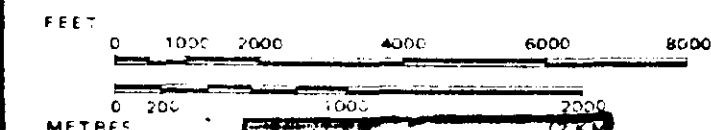
- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
- TOWNSHIPS BASE LINES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
- LOT LINES
- PARCEL BOUNDARY
- MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION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

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	▼
ORDER-IN-COUNCIL	OC
RESERVATION	⊙
CANCELLED	⊘
SAND & GRAVEL	⊙

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6 1913, VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 62, SUBSEC. 1.

SCALE: 1 INCH = 40 CHAINS

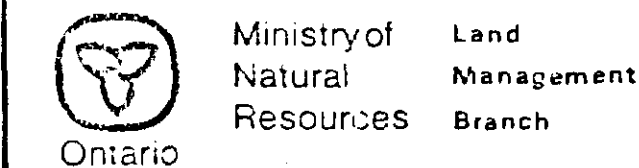


DATE OF ISSUE

MAR 30 1985

LARDER LAKE
MINING RECORDER'S OFFICE

TOWNSHIP
GAUTHIER
M.N.R. ADMINISTRATIVE DISTRICT
KIRKLAND LAKE
MINING DIVISION
LARDER LAKE
LAND TITLES / REGISTRY DIVISION
TIMISKAMING



Date JANUARY, 1985

FEBRUARY 8, 1988

Number

G-3211



32084N0279 2.12282 GAUTHIER

LEGEND

EARLY PRECAMBRIAN (ARCHEAN)

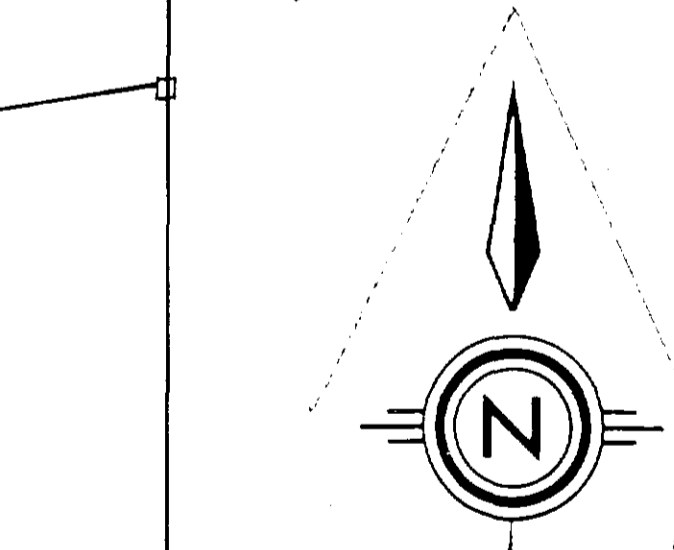
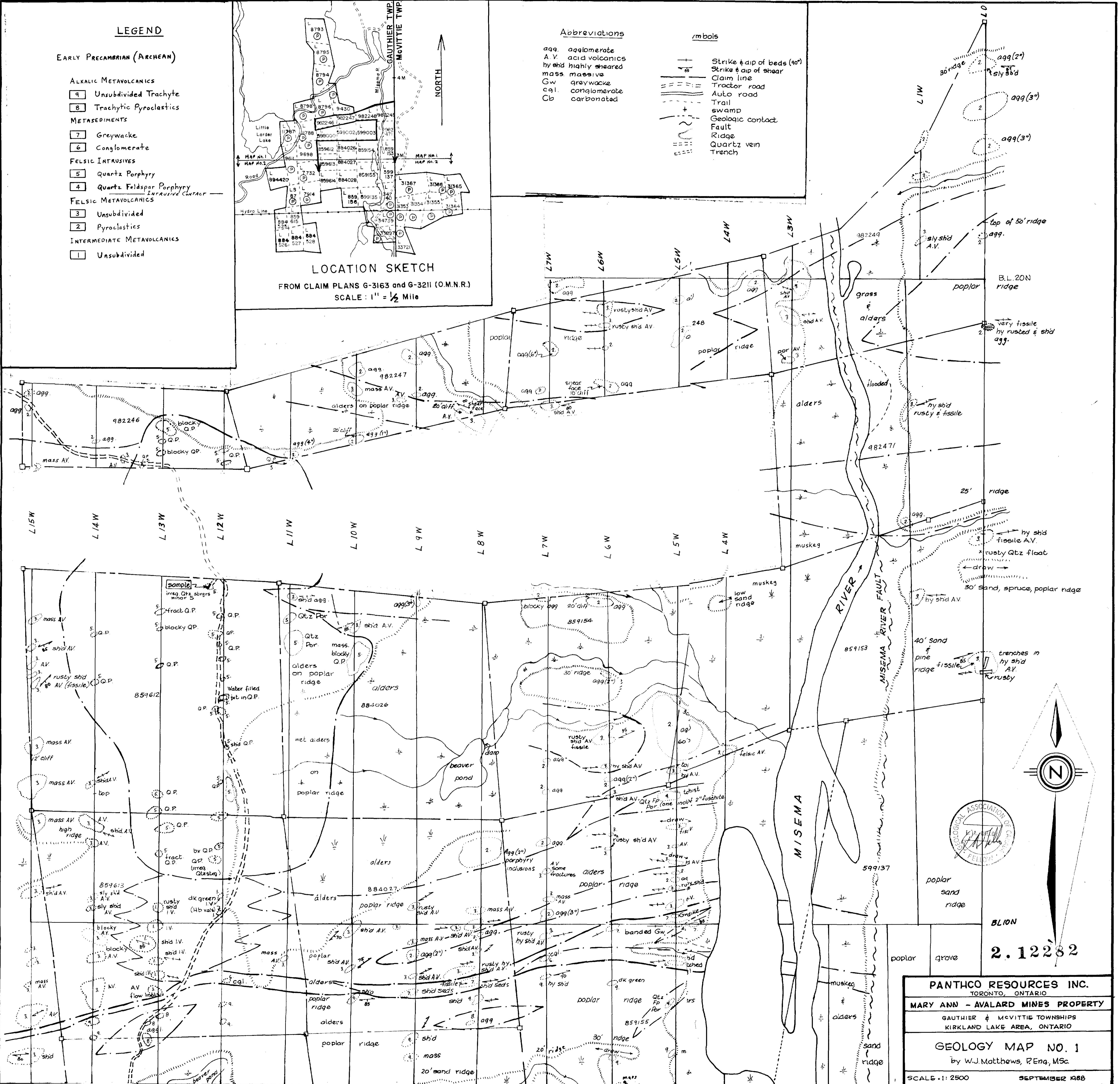
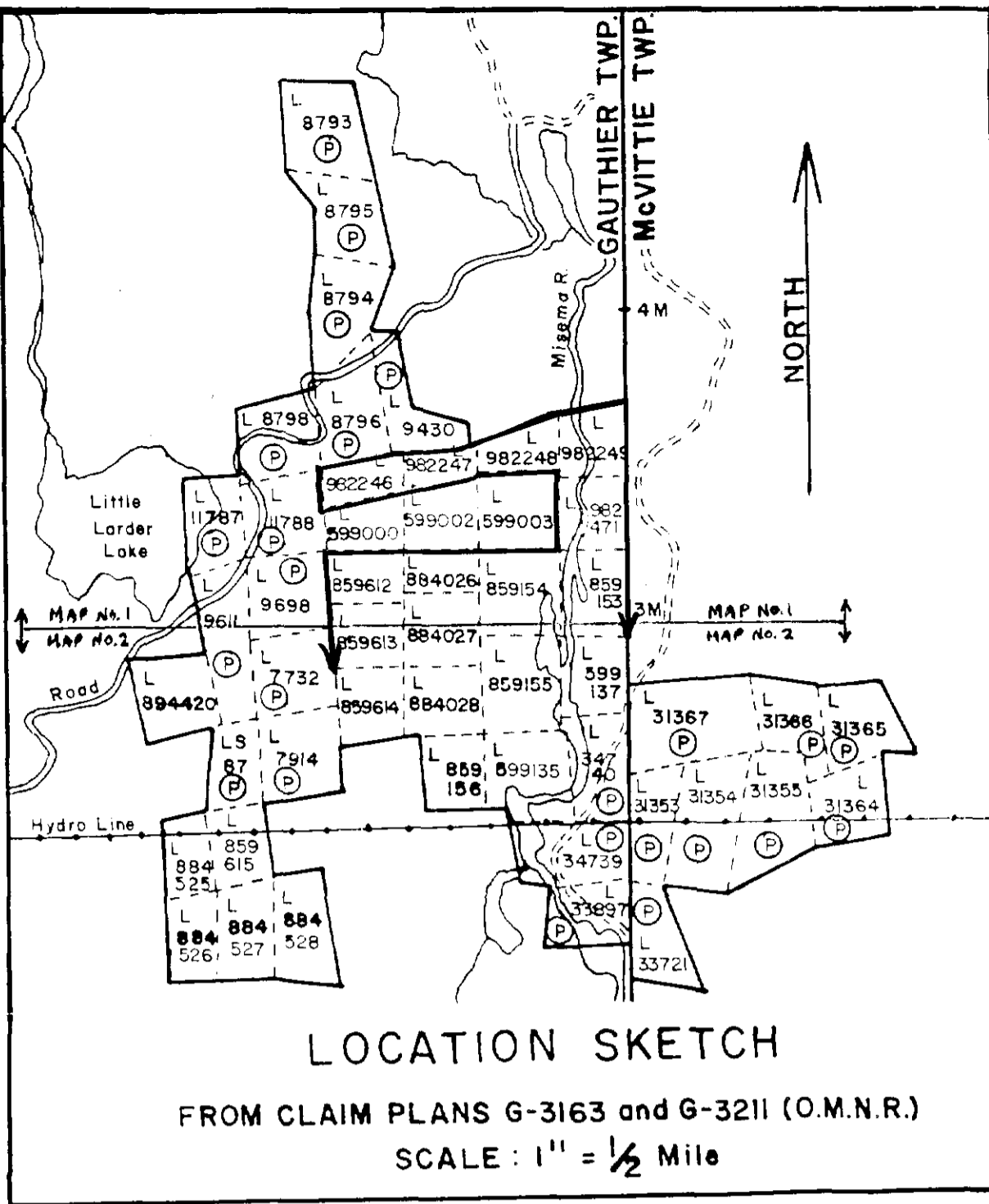
- ALKALIC METAVOLCANICS
- 9 Unsubdivided Trachyte
 - 8 Trachytic Pyroclastics
- METASEDIMENTS
- 7 Greywacke
 - 6 Conglomerate
- FELSIC INTRUSIVES
- 5 Quartz Porphyry
 - 4 Quartz Feldspar Porphyry
- FELSIC METAVOLCANICS
- 3 Unsubdivided
 - 2 Pyroclastics
- INTERMEDIATE METAVOLCANICS
- 1 Unsubdivided

Abbreviations

- agg. agglomerate
- A.V. acid volcanics
- hshd highly sheared
- mass massive
- Gw greywacke
- conl. conglomerate
- Cb carbonated

Symbols

- +— Strike & dip of beds (90°)
- - - Strike & dip of shear
- - - Claim line
- Tractor road
- - - Auto road
- - - Trail
- - - swamp
- - - Geologic contact
- - - Fault
- - - Ridge
- - - Quartz vein
- - - Trench

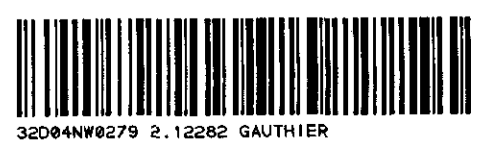


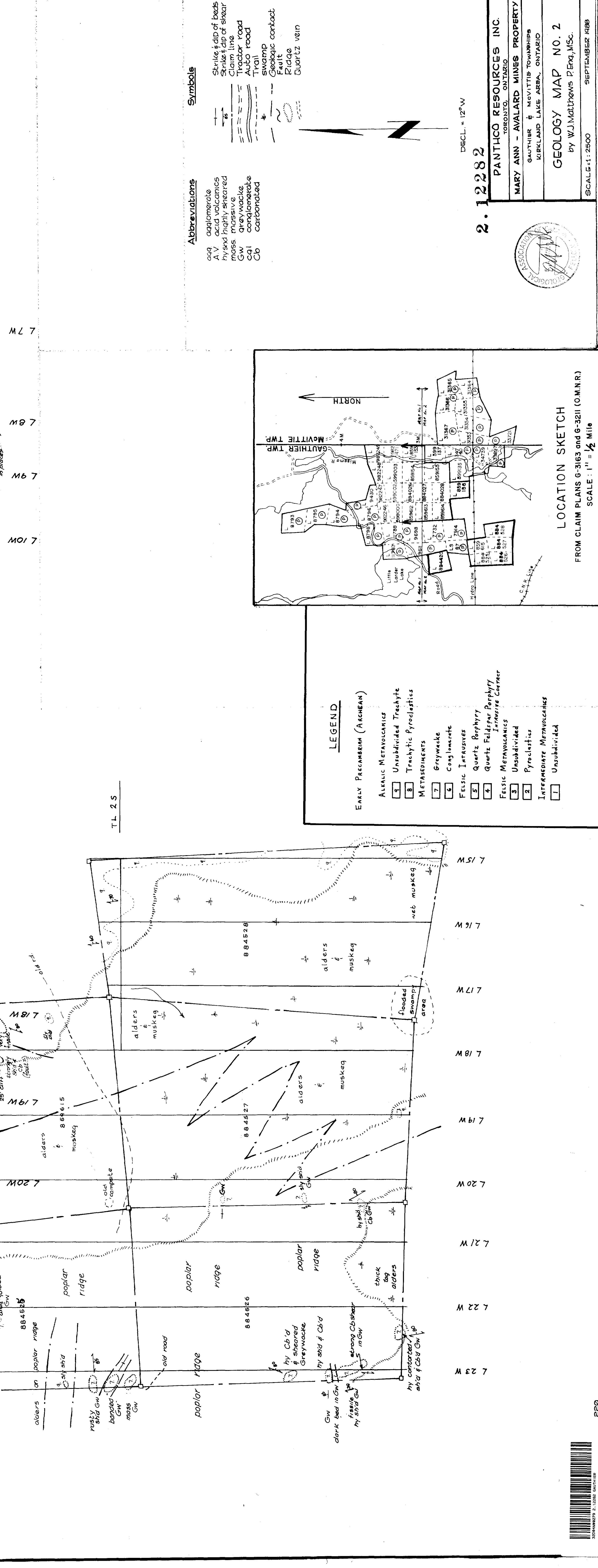
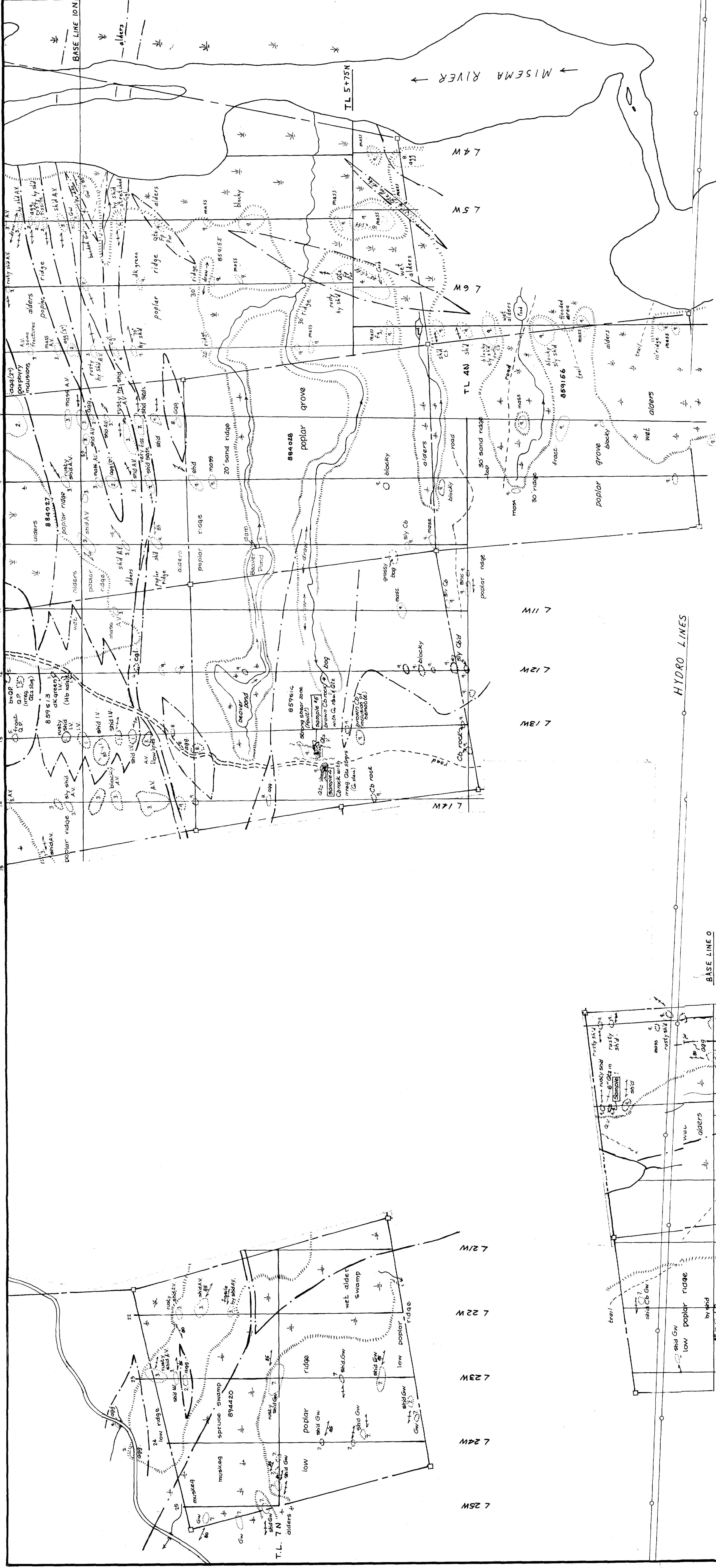
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2. 12282

PANTHCO RESOURCES INC.
TORONTO, ONTARIO
MARY ANN - AVALARD MINES PROPERTY
GAUTHIER & MCVITTIE TOWNSHIPS
KIRKLAND LAKE AREA, ONTARIO

GEOLOGY MAP NO. 1
by W.J. Matthews, P.Eng., M.Sc.

SCALE: 1:2500 SEPTEMBER 1988





Abbreviations

- esp - opaliferous
- AV - acid volcanics
- py - highly sheared
- mass - massive
- Gw - greywacke
- Cal - calcarenaceous
- Cb - carbonaceous

Symbols

- Strike & dip of beds
- Strike & dip of shear
- Claim line
- Tractor road
- Auto road
- swamp
- Geologic contact
- Fault
- Ridge
- Quartz vein

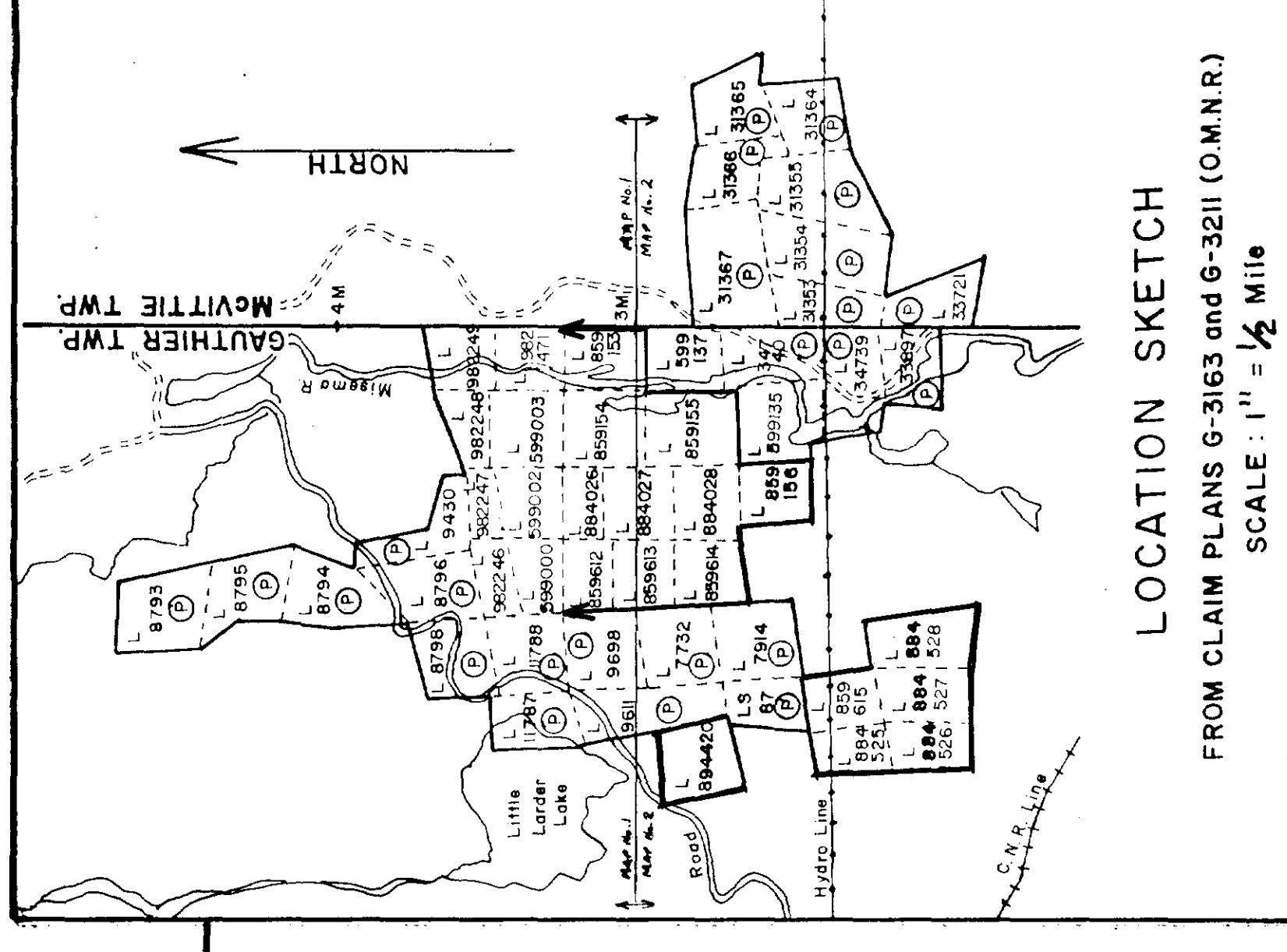
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KIRKLAND LAKE AREA, ONTARIO

GEOLOGY MAP NO. 2
By W.J. Matthews P.Eng., M.Sc.

SCALE: 1" = 2500' SEPTEMBER 1988



LEGEND

EARLY PRECAMBRIAN (ARCHEAN)

- 1 Alkalic Metavolcanics
- 2 Unsubdivided Trachyte
- 3 Trachytic Pyroclastics
- 4 Metasediments
- 5 Greywacke
- 6 Conglomerate
- 7 Felsic Intrusives
- 8 Quartz Porphyry
- 9 Quartz Felsic Porphyry
- 10 Felsic Metavolcanics
- 11 Intermediate Metavolcanics
- 12 Pyroclastics
- 13 Unsubdivided

