

INTRODUCTION



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DURING THE MONTH OF NOVEMBER, 1965, A MAGNETOMETER - ELECTROMAGNETIC SURVEY WAS CARRIED OUT ON THE BLOCK "A" GROUP OF CLAIMS HELD BY CONIGO MINES LIMITED IN THE TEXMONT AREA SOUTH OF TIMMINS, ONTARIO.

THE TEXMONT NICKEL DEPOSIT IS LOCATED FOUR MILES EAST OF THE CONIGO PROPERTY NEAR THE BARTLETT - ONKIE TOWNSHIP BOUNDARY.

IN ADDITION TO THE GEOPHYSICAL WORK, THE ROCK EXPOSURES ON THE PROPERTY WERE EXAMINED FOR SULPHIDE OR PRECIOUS METAL MINERALIZATION. A GOLD OCCURRENCE ON THE PROPERTY WAS LOCATED AND GEOLOGICALLY MAPPED.

PROPERTY, LOCATION AND ACCESS

A CONTIGUOUS BLOCK OF 37 UNPATENTED MINING CLAIMS FORMS THE PROPERTY OF CONIGO MINES LIMITED (BLOCK "A"). IN McARTHUR AND BARTLETT TOWNSHIPS, THE CLAIMS ARE REGISTERED WITH THE ONTARIO DEPARTMENT OF MINES AS FOLLOWS: P 57767 TO 57770 INCL., P 57774 TO P 57777 INCL., P 59105 TO P 59108 INCL., P 81238 TO P 81244 INCL., AND P 85265 TO P 85282 INCL. FOURTEEN OF THE ABOVE CLAIMS WERE PROSPECTED AND GEOPHYSICALLY SURVEYED.

THE CLAIM GROUP IS LOCATED ALONG THE McARTHUR - BARTLETT TOWNSHIP BOUNDARY BETWEEN TRIPLE AND MARCEAU LAKES. TIMMINS, ONTARIO IS LOCATED 20 MILES NORTH OF THE MINING PROPERTY.

AN ALL-WEATHER GRAVEL ROAD EXTENDING SOUTH FROM THE TIMMINS - SOUTH PORCUPINE HIGHWAY CROSSES THE PROPERTY. FROM TIMMINS TO THE PROPERTY, DISTANCE BY ROAD, IS APPROXIMATELY 40 MILES.

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HISTORY OF THE PROPERTY

ACCORDING TO E. L. BRUCE IN THE THIRTY- ANNUAL REPORT
OF THE ONTARIO DEPARTMENT OF MINES, 1926, A GOOD L OF SURFACE
PROSPECTING TOOK PLACE IN THE AREA BETWEEN 1924 AND 1926.

IN 1925 THE GOLD OCCURRENCE SHOWN ON CLAIM P 57770 WAS
EXPOSED BY SEVERAL TRENCHES AND SHALLOW TEST PITS. ACCORDING TO E. L.
BRUCE THE VEIN STRIKES NORTH 15° EAST AND DIPS 75° EAST. IT VARIES
FROM A SERIES OF OFFSETTING LENSES ONE TO TWO INCHES WIDE IN PARALLEL
ZONES, UP TO A WIDTH OF THREE FEET OF SOLID QUARTZ WITH PARALLEL
STRINGERS IN THE FOLIATED GREENSTONE OF THE FOOTWALL FOR AN ADDITIONAL
SIX FEET. THE QUARTZ IS SUGARY AND CONTAINS ONLY A SMALL PROPORTION
OF SULPHIDES. THERE WAS SOME VISIBLE GOLD.

GENERAL GEOLOGY

THE GEOLOGY OF THE AREA IS SHOWN ON THE ONTARIO DEPARTMENT
OF MINES MAP NO. 35h PUBLISHED IN 1926. THE RESULTS OF THIS SURVEY
HAVE BEEN INCORPORATED WITH MAP 2046 PUBLISHED BY THE ONTARIO DEPARTMENT
OF MINES IN 1963.

OF THE AREA SURVEYED BY GEOPHYSICAL METHODS, ROCK EXPOSURES
FORM ABOUT 20%. THESE ROCK EXPOSURES GENERALLY FORM RIDGES BETWEEN
THE INTERVENING NORTH - SOUTH TRENDING LAKES. SPRUCE AND POPLAR CONSTI-
TUTE THE MAIN GROWTH IN THE AREA.

THE CONSOLIDATED ROCKS ARE ALL PRE-CAMBRIAN IN AGE AND ARE
PRACTICALLY ALL OF IGNEOUS TYPES. THE OLDEST ROCKS ARE VOLCANICS, SUCH
AS ARE USUALLY CLASSIFIED AS KEWATIN. THESE INCLUDE BASIC AND ACIDIC
LAVAS AND VOLCANIC FRAGMENTAL ROCKS WITH A SMALL AMOUNT OF SEDIMENTARY
IRON FORMATION.

GENERAL GEOLOGY (CONT'D)

THE KEEWATIN ROCKS ARE INTRUDED BY DARK COLOURED, COARSE GRAINED ROCKS WHICH ARE TERMED AMPHIBOLITES. SOME OF THESE ROCKS ARE PROBABLY ALTERED ULTRABASIC OR BASIC TYPES. GRANITE, GRANITE PORPHYRY, FELDSPAR AND QUARTZ PORPHYRIES INTRUDE THE VOLCANICS AND AMPHIBOLITES.

IN THIS AREA THE ROCKS STRIKE ABOUT NORTH-NORTHWEST AND DIP STEEPLY EAST. THE ROCKS CONSIST OF AMPHIBOLITE AND CHLORITE SCHIST WHICH ARE INTRUDED BY DIABASE AND APLITE. A ROCK TENTATIVELY TERMED GABBRO IS EXPOSED ON THE WEST SIDE OF THE SURVEY AREA. IT CONTAINS SIGNIFICANT AMOUNTS OF CHALCOPYRITE.

ECONOMIC GEOLOGY

PRIOR TO THE GEOPHYSICAL SURVEY THE PROPERTY WAS EXAMINED BY A PROSPECTOR ALONG THE PICKET LINES. THIS WORK INVOLVED CONSIDERABLE STRIPPING OF THE OUTCROP AREA AND SOME GEOLOGICAL MAPPING AND SAMPLING. THE WORK WAS SOMEWHAT HAMPERED BY SNOW COVER.

THE GOLD OCCURRENCE AS DESCRIBED BY E. L. BRUCE UNDER "HISTORY OF THE PROPERTY" WAS LOCATED AND MAPPED. THE MAIN VEIN, WHICH IS EXPOSED BY SEVERAL TRENCHES AND TEST PITS, STRIKES NORTH 15° EAST AND DIPS 65° EAST. IT IS 120 FEET LONG AND VARIES FROM TWO TO THIRTY-SIX INCHES WIDE. CHLORITE SCHIST FORMS THE WALLROCK. FOUR CHIP SAMPLES ALONG THE VEIN WERE ASSAYED FOR GOLD AS FOLLOWS:

<u>SAMPLE NO.</u>	<u>WIDTH</u>	<u>GOLD OZ/T</u>	<u>SILVER OZ/T</u>
1	14"	0.03	
2	18"	nil	
3	10"	nil	
4	4"	0.02	0.06

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ECONOMIC GEOLOGY (CONT'D)

ON LINE 15 NORTH, STATION 19 WEST, STRIPPING EXPOSED SULPHIDE MINERALIZATION IN GABBRO. THE GREATEST CONCENTRATION OF SULPHIDES IS PRESENT IN EAST-WEST FRACTURING 3 TO 4 FEET LONG OVER A WIDTH OF ABOUT 14 INCHES. THE FRACTURING COMES OFF THE GABBRO CONTACT WHERE THE STRIKE CHANGES FROM NORTH TO WEST. FINE SULPHIDES ARE PRESENT THROUGHOUT THE GABBRO WHICH IS IN CONTACT WITH A CHLORITIZED FOLIATED SEDIMENT. REPRESENTATIVE GRAB SAMPLES FROM THE GABBRO ASSAYED AS FOLLOWS:

<u>SAMPLE NO.</u>	<u>WIDTH</u>	<u>CU%</u>	<u>NI%</u>	<u>GOLD OZ/T</u>	<u>SILVER OZ/T</u>
5	GRAB	0.40		NIL	0.05
6	"			0.01	
7	"		NIL		
1	"	0.35	NIL	NIL	0.05
2	"	0.07	NIL	NIL	0.01
3	"	0.05	NIL	NIL	TR
4	"	0.03	NIL	0.01	TR

SAMPLES 5 AND 1 WERE TAKEN FROM THE HEAVY SULPHIDES AMOUNTING TO ABOUT 25% IN THE EAST-WEST FRACTURING. THE REMAINING SAMPLES WERE TAKEN FROM THE MASSIVE GABBRO.

THERE IS NO MAGNETIC ATTRACTION FROM THE HEAVY SULPHIDE MINERALIZATION. THIS FEATURE AND THE ASSAY RESULTS INDICATES THAT THE WEATHERED SULPHIDES CONSIST MOSTLY OF PYRITE AND SOME CHALCOPYRITE.

ELECTROMAGNETIC - MAGNETOMETER SURVEY
RESULTS AND INTERPRETATION

THE SURVEY WAS CONDUCTED ALONG EAST-WEST PICKET LINES SPACED AT 300 FOOT INTERVALS AS SHOWN ON THE ACCOMPANYING MAPS AT A SCALE OF ONE INCH TO TWO HUNDRED FEET. IN THE AREA OF THE GOLD SHOWING PICKET LINES WERE ESTABLISHED AT 100 FOOT INTERVALS AND IN THE AREA OF THE COPPER OCCURRENCE RECONNAISSANCE LINES WERE ESTABLISHED AT 100 FOOT INTERVALS. A DUAL FREQUENCY CRONE E.M. UNIT AND A SHARPE M.F.-1 FLUXGATE MAGNETOMETER WERE USED IN THE SURVEY.

ELECTROMAGNETIC - MAGNETOMETER SURVEY
RESULTS AND INTERPRETATION (CONT'D)

THE MAGNETIC BACKGROUND RANGES BETWEEN 300 AND 500 GAMMAS AND SHOWS A GENERAL NORTH - SOUTH TRENDS.

ALONG THE WEST EDGE OF THE SURVEYED AREA ARE A SERIES OF HIGH MAGNETIC ANOMALIES RANGING TO 3000 GAMMAS AND STRIKING SLIGHTLY WEST OF NORTH. INTERSECTING THIS MAGNETIC ZONE IS A NARROW EAST-WEST MAGNETIC ANOMALY ON LINE 20 NORTH.

THE MAGNETIC ANOMALIES STRIKING SLIGHTLY WEST OF NORTH ARE KNOWN TO REPRESENT AMPHIBOLITE, PARTICULARLY SOUTH OF LINE 12 NORTH. THIS AMPHIBOLITE HAS A GREATER PROPORTION OF DARK MINERALS THAN THE AMPHIBOLITE IN THOSE AREAS LACKING MAGNETIC ANOMALIES. IN THE VICINITY OF STATION 19 WEST, LINE 15 NORTH, THE MAGNETIC ANOMALY IS REPRESENTED BY AN IRREGULAR MASS OF GABBRO, WHICH, WHERE EXPOSED, CONTAINS CHALCOPYRITE MINERALIZATION.

STRIPPING ON LINE 20 NORTH SHOWS THAT THE EAST-WEST ANOMALY IS CAUSED BY DIABASE. IT IS SIGNIFICANT THAT THE GOLD AND COPPER OCCURRENCES ARE LOCATED NEAR THIS DIABASE DYKE.

WEST OF THE RIVER THE CHANGE TO A LOW UNIFORM TOPOGRAPHY AND THE UNIFORM MAGNETIC CONDITION SUGGESTS THE PRESENCE OF SEDIMENTS OR VOLCANICS.

IN THE VICINITY OF THE COPPER OCCURRENCE BOTH VERTICAL LOOP AND THE NORMAL IN-LINE ELECTROMAGNETIC SURVEY WERE CONDUCTED. HOWEVER, NEITHER HERE OR ELSEWHERE WAS A DEFINITE CONDUCTIVE ZONE OUTLINED.

SURVEY METHOD AND INSTRUMENT DATA

THE CRONE E.M. UNIT, USED IN THE SURVEY, IS COMPRISED OF TWO

SURVEY METHOD AND INSTRUMENT DATA (CONT'D)

SIMILAR COIL UNITS WHICH BOTH TRANSMIT AND RECEIVE ON A FREQUENCY OF 1600 OR 480 CYCLES PER SECOND. THE COILS WERE MAINTAINED AT A DISTANCE OF 200 FEET ALONG THE SURVEY LINES.

IN THIS TYPE OF SURVEY THE RESULTANT READING IS A MEASUREMENT IN DEGREES AND AN ANOMALY IS USUALLY A RESULTANT READING GREATER THAN PLUS OR MINUS THREE DEGREES. INITIALLY THE SURVEY IS CONDUCTED USING THE HIGH FREQUENCY UNIT WHICH IS MORE SENSITIVE. ANY ANOMALOUS CONDITIONS ARE CHECKED BY THE LOW FREQUENCY EQUIPMENT, THEREBY OFTEN ELIMINATING THOSE ANOMALIES WHICH MAY BE CAUSED BY CONDUCTIVE OVERBURDEN. THE ABILITY TO TRANSMIT AND RECEIVE ON BOTH COILS ELIMINATES THAT ERROR RESULTING FROM IMPROPER COIL ORIENTATION OVER IRREGULAR TERRAIN.

A SHARPE M.F.-1 FLUXGATE MAGNETOMETER WAS USED IN THE MAGNETIC SURVEY. THIS INSTRUMENT MEASURES THE VERTICAL COMPONENT OF THE EARTH'S MAGNETIC FIELD IN GAMMAS. BASE STATIONS FOR DETERMINING THE MAGNETIC DIURNAL VARIATIONS WERE ESTABLISHED ALONG THE MAIN BASE LINE AT 300 FOOT INTERVALS. MAGNETIC READINGS WERE TAKEN AT 50 FOOT INTERVALS ALONG THE CROSS LINES.

CONCLUSIONS AND RECOMMENDATIONS

THE MAGNETIC SURVEY, PROSPECTING AND GEOLOGICAL WORK, INDICATES THAT THE AREA WEST OF THE RIVER IS UNDERLAIN BY AMPHIBOLITE, CHLORITE SCHIST, APLITE, DIABASE AND GABBRO. WITH THE EXCEPTION OF THE DIABASE, WHICH STRIKES EAST-WEST, THESE ROCKS STRIKE GENERALLY NORTH-SOUTH AND DIP EAST. EAST OF THE RIVER THE MAGNETIC SURVEY SUGGESTS THAT THE UNDERLYING ROCKS ARE SEDIMENTS OR ACID TO INTERMEDIATE VOLCANICS WHICH COINCIDE IN ATTITUDE TO THE ROCKS ON THE WEST HALF OF THE PROPERTY.

CONCLUSIONS AND RECOMMENDATIONS (CONT'D)

NORTH OF A DIABASE DYKE IS PRESENT A GOLD-BEARING QUARTZ VEIN WHICH STRIKES NORTH 15° EAST ACROSS LINE 21 NORTH, STATION 11 WEST. SOUTH OF THE DIABASE DYKE IS PRESENT A COPPER-BEARING GABBROIC ROCK ON LINE 15 NORTH, STATION 19 WEST. INASMUCH AS THE DIABASE PROBABLY FOLLOWS AN OLDER FAULT, IT MAY BE GENETICALLY RELATED TO THE GOLD AND COPPER MINERALIZATION.

THE GOLD MINERALIZATION IN THE QUARTZ VEIN 120 FEET LONG AND UP TO 3 FEET WIDE IS NOT SIGNIFICANT AND NO FURTHER WORK IS JUSTIFIED.

THE COPPER MINERALIZATION RANGES UP TO 0.40% IN FRACTURES IN THE GABBRO. IN THE MASSIVE GABBRO THE COPPER CONTENT AVERAGES ABOUT 0.05%, THEREFORE SUGGESTING THAT THE CHALCOPYRITE MINERALIZATION IS ASSOCIATED WITH THE GABBRO. STRONG FAULT OR FOLD STRUCTURES IN THE GABBRO MAY BE THE LOCI FOR ORE GRADE MINERALIZATION AND THIS POSSIBILITY SHOULD BE INVESTIGATED.

RECONNAISSANCE GEOPHYSICAL WORK, STRIPPING, AND TRENCHING IS THE MOST FEASIBLE METHOD FOR INVESTIGATING THIS AREA. IT IS PROPOSED THAT RECONNAISSANCE LINES BE ESTABLISHED IN AN EAST-WEST DIRECTION AT 200 FOOT INTERVALS ALONG THE NORTHERLY STRIKE OF THE GABBRO BODY. MAGNETIC SURVEY WORK WILL OUTLINE THE EXTENT OF THE GABBRO AND ELECTRO-MAGNETIC WORK WILL DETERMINE THE PRESENCE OF ANY SULPHIDE MASSES SUFFICIENTLY LARGE AND MASSIVE TO FORM CONDUCTORS. A SMALL TRENCH APPROXIMATELY 20 FEET BY 4 FEET SHOULD BE BLASTED ACROSS THE PRESENT COPPER OCCURRENCE TO FACILITATE A CLOSER EXAMINATION OF THE MINERALIZATION. ADDITIONAL TRENCHING WOULD DEPEND UPON THE RESULTS OF THE GEOPHYSICS AND STRIPPING, WHICH SHOULD BE IMPLEMENTED IN AREAS OF HIGHER GROUND.

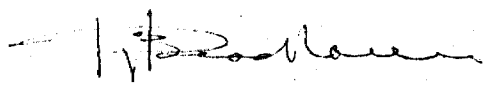
CONCLUSIONS AND RECOMMENDATIONS (CONT'D)

IT IS EXPECTED THAT THE INITIAL EXPENDITURES WARRANTED
FOR THIS PROGRAMME ARE AS FOLLOWS:

RECONNAISSANCE GEOPHYSICS.....	\$ 400.00
STRIPPING AND TRENCHING.....	<u>400.00</u>
	<u>\$ 800.00</u>

RESPECTFULLY SUBMITTED.

SHIELD EXPLORATION & DEVELOPMENT
MINING SYNDICATE LIMITED

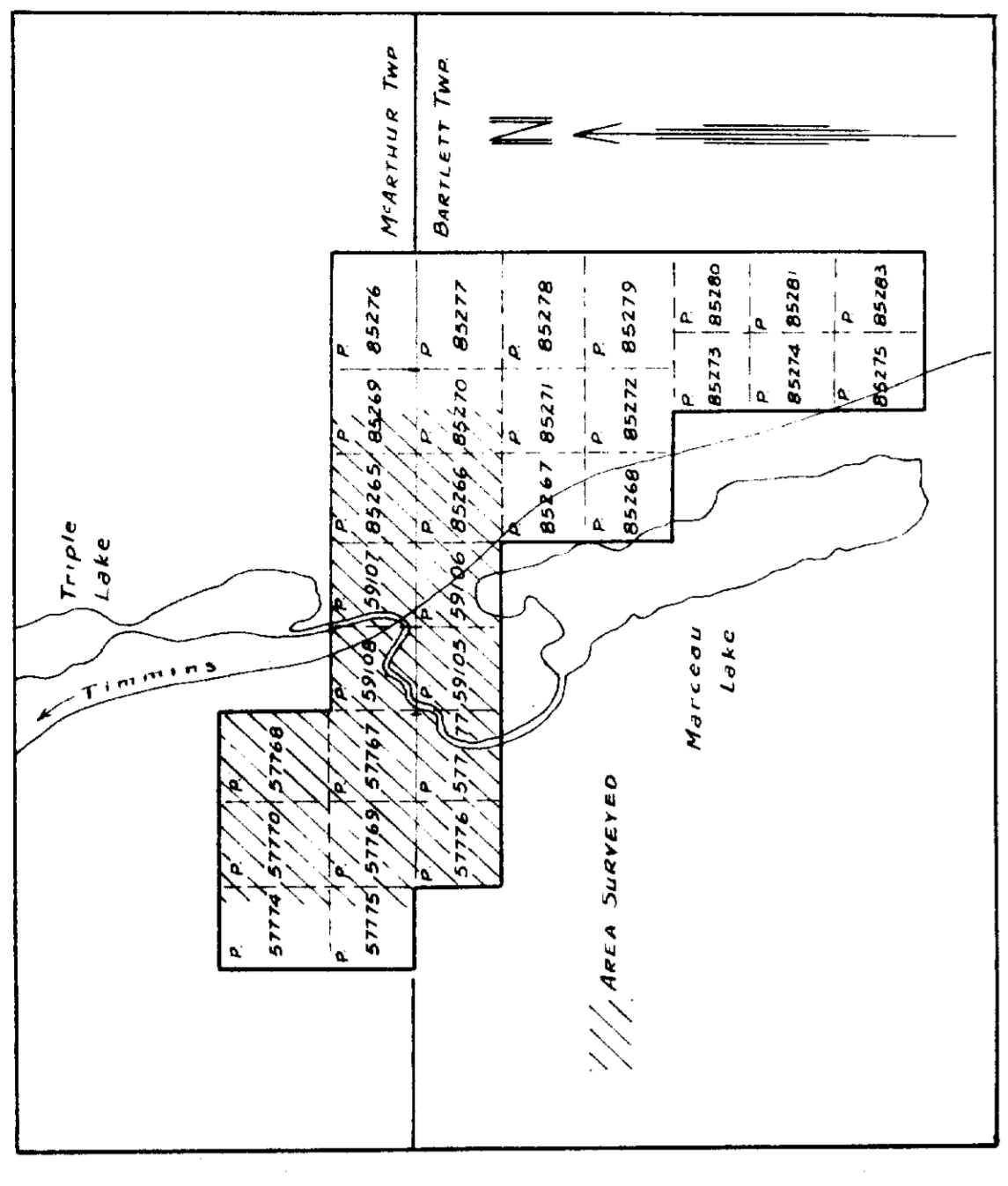
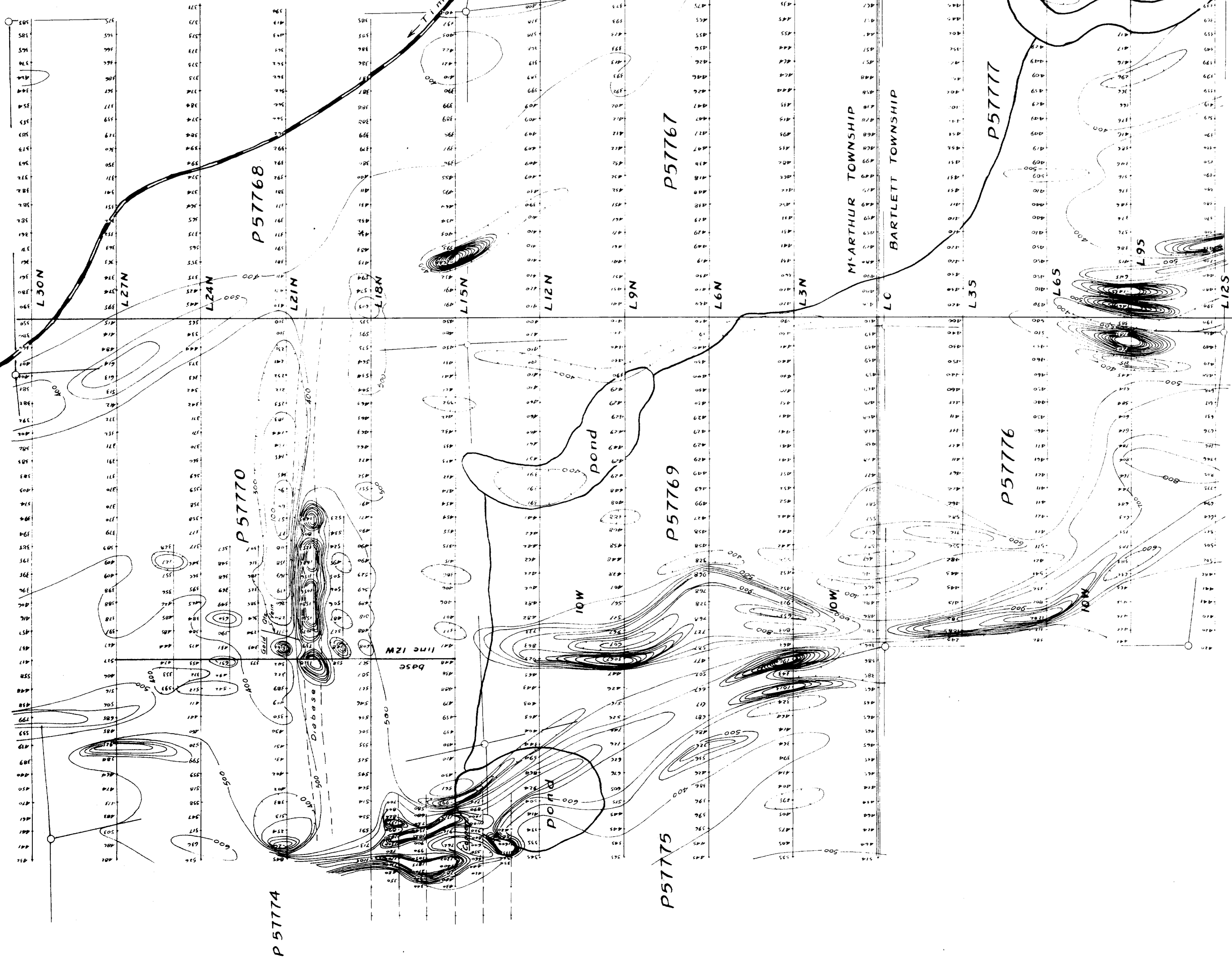


R. J. BRADSHAW,

CONSULTING GEOLOGIST.

TIMMINS, ONTARIO,

NOVEMBER 30, 1965.



- SYMBOLS**
- Measurement station along picket line
 - Relative value of the vertical component of the earth's magnetic field in gauss
 - Magnetic contour
 - Magnetic depression
 - Claim post

MAGNETOMETER SURVEY

ON THE PROPERTY OF

CONIGO MINES LIMITED

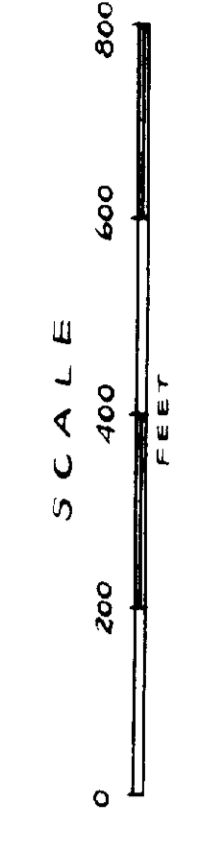
M'Arthur & Bartlett Townships, Percupine Mining Div. Ontario

by

SHIELD EXPLORATION & DEVELOPMENT MINING LTD.

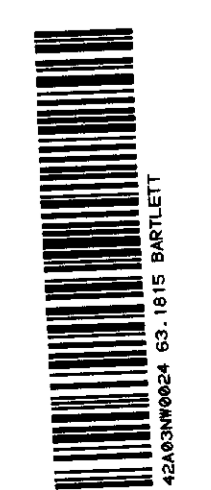
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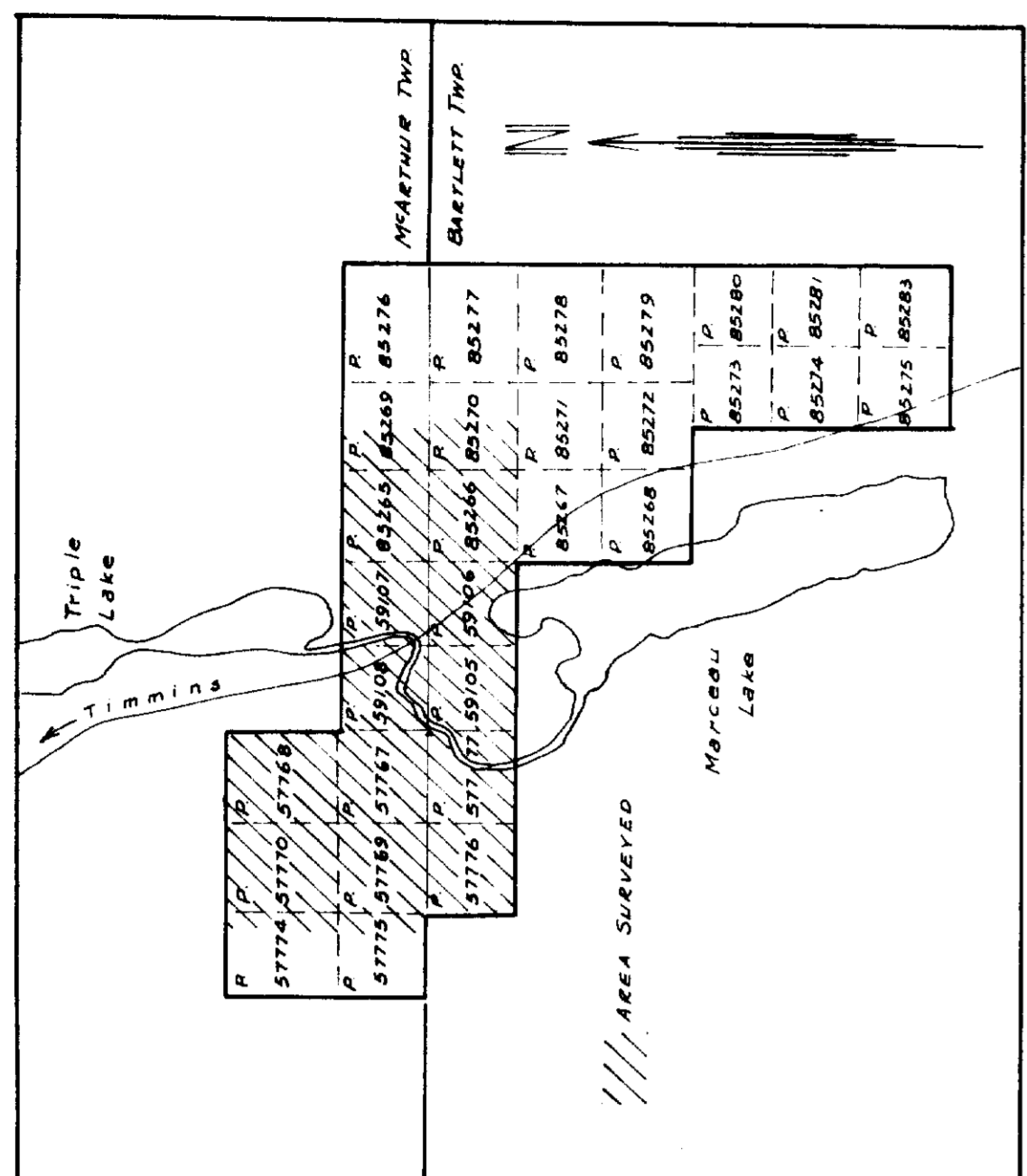
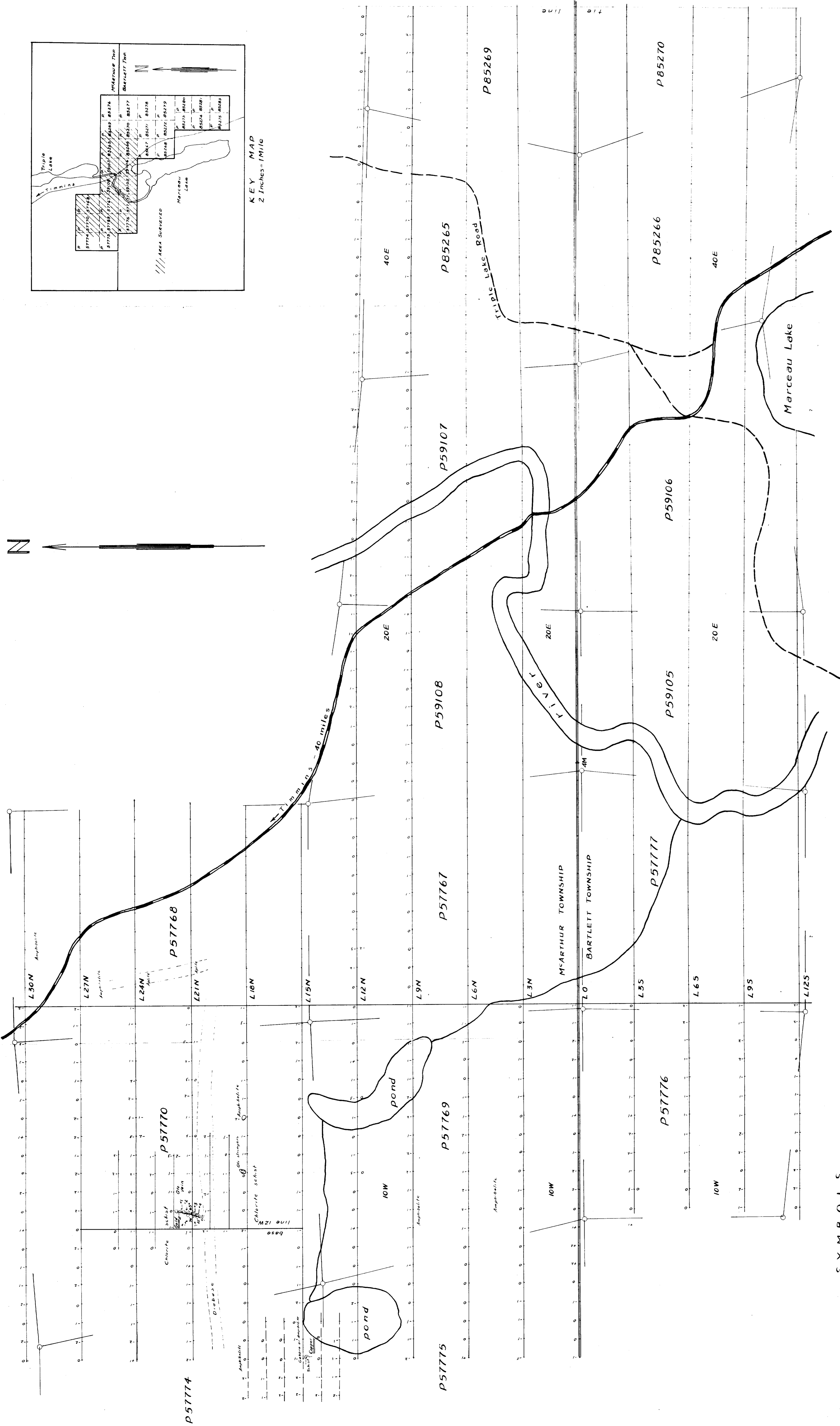


Nov 30, 65

INSTRUMENT
Shope ME 7 Ilsegefe magnetometer



200



SYMBOLS

- Measurement station along picket line
- Electromagnetic reading in degrees
- High frequency
- Low frequency
- Clean post
- Rock trench
- Outcrop

INSTRUMENT
 Crane EM unit: 200 foot coil separation
 Frequency: 1600 and 480 cps.

ELECTROMAGNETIC SURVEY
 ON THE PROPERTY OF
CONIGO MINES LIMITED
 M'Arthur & Bartlett Townships, Porcupine Mining Div Ontario

by
SHIELD EXPLORATION & DEVELOPMENT MINING LTD.
 NOVEMBER, 1965
 BY: R.J.B.
 Nov. 30, 1965
 [Signature]

