42410NF0522 2.1535 CLERGUE

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REPORT

ON

MAGNETOMETER AND ELECTROMAGNETIC

SURVEYS

OF THE

MULLIETTE - BELL CLAIMS

CLERGUE AND STOCK TOWNSHIPS

PORCUPINE MINING DIVISION

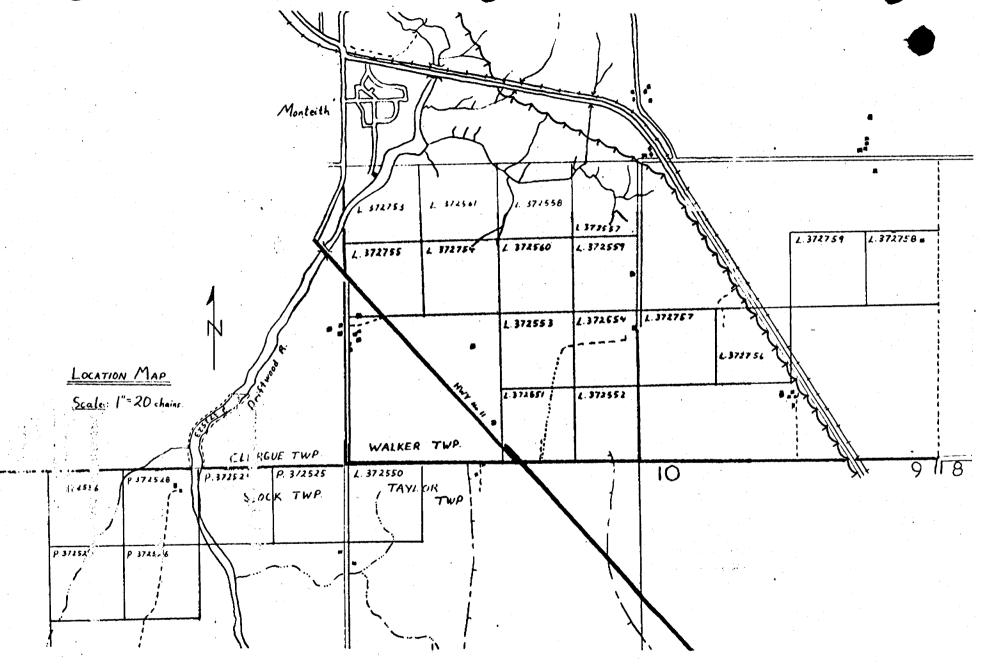
AND

WALKER AND TAYLOR TOWNSHIPS

LARDER LAKE MINING DIVISION

ONTARIO

D. R. Bell, B.Sc.
July 31, 1974.



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1. Introduction:

A McPhar vertical loop electromagnetic and magnetometer survey was completed during the months of April and May of 1974, on the Morley Mulliette - David Bell claims, situated in Clergue and Stock Townships of the Porcupine Mining Division, and Walker and Taylor Townships of the Larder Lake Mining Division, Ontario.

The survey was performed by John J. Johnson, 112 Second Ave., Timmins, Ontario.

2. Location and Accessibility:

The claims are located on the mutual boundaries of <u>Clergue</u>, <u>Walker</u>, <u>Taylor</u> and <u>Stock Townships</u>, 42 miles east of Timmins, south of the village of Monteith. The claim group is cut in half by Highway 11 and access within this group is gained by numerous farm access roads and trails. The village of Monteith is one mile north of the property as is the Ontario Northland Railway.

3. Property:

Total number of claims - 24 unpatented mining claims.

Recorded Numbers - L372557-561 Inclusive

L372753-759 Inclusive

P372526-528 Inclusive

P372556

L372550-554 Inclusive

P372523-525 Inclusive

4. Ownership and Title:

The 24 unpatented claims within this survey area are jointly held by Norley Mulliette and David R. Bell on an equal sharing basis; 50% each.

Mineral rights held by: a) Morley Mulliette, Suite 201, 95 King St. East, Toronto, Ontario.

> b) David R. Bell, 672 Melrose Blvd., Timmins, Ontario.

5 History:

Due largely to the area being overlain by clay, and scattered widespread outcrops, little exploration was carried out in this area until 1938 when a landslide on the east bank of the Driftwood River exposed an outcrop which assayed 0.13 ozs. gold per ton.

In the spring of 1939 the Montclerg Mines Limited was incorporated. The property was optioned to the following companies which carried out diamond-drill programmes and a limited magnetometer survey.

Companies - 1939 Newmont and Anglo-Huronian Ltd.

34 holes for a total of 20,335 feet.

- 1941 Anglo-Huronian Ltd.

10 holes for a total of 6,672 feet.

- 1942 Howey Gold Mines Ltd.

1 hole for a total of

776 feet

a magnetometer survey.

This early work indicated an apparent gold bearing zone extending from 1500 feet west of the river to 2800 feet east of the river.

Subsequent to this work, the original company has been organized to Consolidated Montelerg Mines Limited, and no further work has been reported within this area.

The enclosed geophysical report covers the area immediately to the east and south of this previously explored ground.

6. General Geology:

Much of the claim area was mapped by H. D. Carlson, 1965 for the Ontario Department of Mines, and previously the general area was mapped by R. M. Ginn, 1959-1961 for the O.D.M. The map by H. D. Carlson, O.D.M. Preliminary Geological Map No. P.308, shows the claim area to be underlain by sheared and foliated light and dark weathering intermediate to mafic metavolcanics, cut by a wide east-west trending Pipestone fault zone of a composition essentially that of a talcose-chloritic matrix.

Previous assessment work on the Montclerg Group by diamond-drilling has indicated North-South trending diabase dykes.

Structurally the metavolcanics have been isoclinally folded, with an east-west trending synclinal axis passing just south of Monteith. This has been structurally offset by a north-south fault. Extensive shearing, foliation and metamorphism has occurred with the schistocity following the general cast-west trend.

The gold in the Montclerg area is in arsenopyrite and appears to be restricted in a silicified zone in the meta volcanics to the north of the talcose-chloritic Pipestone Fault Zone.

The picket lines were oriented in a north-south direction, such that the survey lines would be as near as possible at right angles to the formation.

7. Magnetometer Survey:

- (a) Grid -
 - 1. Baseline bearing 090 E.
 - 2. Crosslines bearing 360N and 180S @ 400 ft. intervals
 - 3. Total line/miles 22.75 miles.
 - 4. Stations 2089.
 - 5. Personnel three (3) man crew supervised by John J. Johnson,
 112 Second Ave.,
 Timmins, Ontario.
 - (b) Survey Method -
 - 1. Instrument McPhar-M700 Fluxgate magnetometer, a battery operated, transisterized, direct reading instrument which measures the vertical component of the earth's magnetic field.

Scale constant 20 gammas.

Theory of Method - the fluxgate magnetometer employs a 2. saturable core system consisting of two highly permeable metallic strips about which primary coils have been wound. A low frequency field (1KH2) is applied to the coils through an oscillator. The field is sinusoidal and drives the strips into saturation during each half cycle resulting in an even change of permeability Any ambient magnetic of these cores (at KH2). field acting on this system yields a flux or phase variation which, when "gated" at the proper frequency (in this case the second harmonic), induces voltage pulses in an adjacent secondary These pulses are amplified, fed into a winding. phase dector and emerge as a D.C. Signal.

signal is directly proportional to the strength of the ambient field and, therefore the strength of the field can be read on a voltmeter calibrated in gammas. The accuracy of the McPhar instrument is generally within 1/2% of full scale between 1000 and 10,000 gamma ranges and within 1% between the 10,000 and 30,000 gamma range.

on Baseline 0+00 Walker Twp., and Baseline 0+00, 1+50W Clergue and Stock Twns. Readings were then taken at 50 ft. intervals on the crosslines, and check readings taken at a base station in order that a correction curve for the diurnal variation could be established. Using this curve, all readings were corrected for diurnal and instrument drift variations.

8. Electromagnetic Survey:

- (a) Grid same as for magnetic survey; Stations 1060.
- (b) Survey Method -
 - 1. Instrument McPhar SS-15 Vertical Loop EM. System; a dual frequency fixed source, tilt angle method.
 - 2. Operating Frequency 1000 and 5000 C.P.S.
 - 3. Operating Range 2000 feet.
 - 4. Transmitter Power 300 watt supplied by gas-powered motor generator.
 - 5. Transmitter a mass-mounted, triangular cable loop about 10' per side. The loop can be rotated about a vertical axis.
 - 6. Receiver a tuned pick-up coil assembly together with a transisterized amplifier with earphone outlet and a built-in clinometer for dip angle measurement.
 - 7. Theory of Method the basic principle is essentially that a horizontal electromagnetic field generated by passing an alternating through a wire loop will induce electrical "eddy" currents in any adjacent conductive media in the earth. The induced current in any conductor will in turn regenerate a secondary, electromagnetic field. The location and orientation of the principal axes of any secondary field and, hence, the location

and orientation of the source conductor can be determined by measuring tilt angles with a receiving coil. To do this the coil is rotated about a selected axis until a null position is obtained. This null position is essentially the orientation of the receiver coil producing minimum induction. The axis of orientation must be selected such that it is horizontal and lies in a direction parallel to the plane of the receiver coil and normal to the plane of the transmitting loop.

8. Procedure -

Sites for the transmitter locations are selected at convenient points throughout the property. The transmitter is set up and current is applied. The plane of the loop must be kept as nearly as possible in a direction normal to the location of each receiver station. The person operating the receiver orients the coil about a vertical axes until a null point is The direction of the plane of established. the coil is now parallel to an axis which is normal to the plane of the transmitter loop. Next, the receiver coil is held in a horizontal position in this position.

If no secondary field is present a null will be obtained in the horizontal position. If such a field is present, its tilt angle is measured by rotating the coil until a null is received. The dip or tilt angle is read on a clinometer attached to the receiver apparatus.

The amount of tilt recorded at each station in plotted graphically on the line plane and connected by a curve.

A cross-over point is in theory, that point on the line where the curve changes from positive to negative, and in practice it is a point of inflection on the curve. This is due in part to distortion of the secondary field and to interference from other minor, conductors.

9. Results:

(a) Magnetometer Survey - the east-west magnetic trends reflect a general pattern which might be related to the trend of the metamorphic fabric superimposed by the intense regional talcose-chloritic Pipestone Fault Zone.

- Intrusive diabase dykes exhibit a magnetic relief trending in a North-South direction and is sufficient in contrast to distinguish them from the older flows. This is exhibited on the Stock Twp. Group in claim P372525, and similarly on the Walker Twp. Group in claim L372754. This later magnetometer expression has been likely intensified within the Pipestone Fault, regionally metamorphosing the talc-chlorite schist along the diabase intrusive contact to a possible "magnetite-rich" serpentinized rock.
- (b) Electromagnetic Survey only one moderate conductor of any magnitude is indicated. This is in the north-west corner of Claim L372753 in Walker Twp. between lines 4+00 E and 16+00 E; 24+00 N. This anomaly does not reflect any magnetic expression, and a small outcrop some 100 ft. south of the anomaly indicates fine stringers of pyrite in a rhyo-dacite. This small exposure might indicate that the anomaly is due to the presence of massive or stringer sulphides.

A couple of very weak conductors reflecting a trend east-west following the contact of the proposed Pipestone Fault. This is probably due to intense shearing and possible disseminated sulphides.

10. <u>Conclusions</u>:

The electromagnetic anomaly in the north-west corner of the Walker Township Group is in a geologically favourable environment for possible base metal potential. This area should be detailed with 200 ft. survey spacings. Due to the intense overburden and a local river passing over this area, diamond drilling would be recommended for this zone.

An induced polarization survey along the contact of the Pipestone Fault zone might further outline potential disseminated gold-sulphide horizones similar to those found on the adjoining Montclerg property.

It is recommended that following any successful results from the above conclusions, that diamond drill should be used to test the mineral potential of this property.

Respectfully submitted,

David R. Bell, B.Sc.

July 31, 1974.

ASSESSMENT WORK DETAILS

If space insufficient, attach list

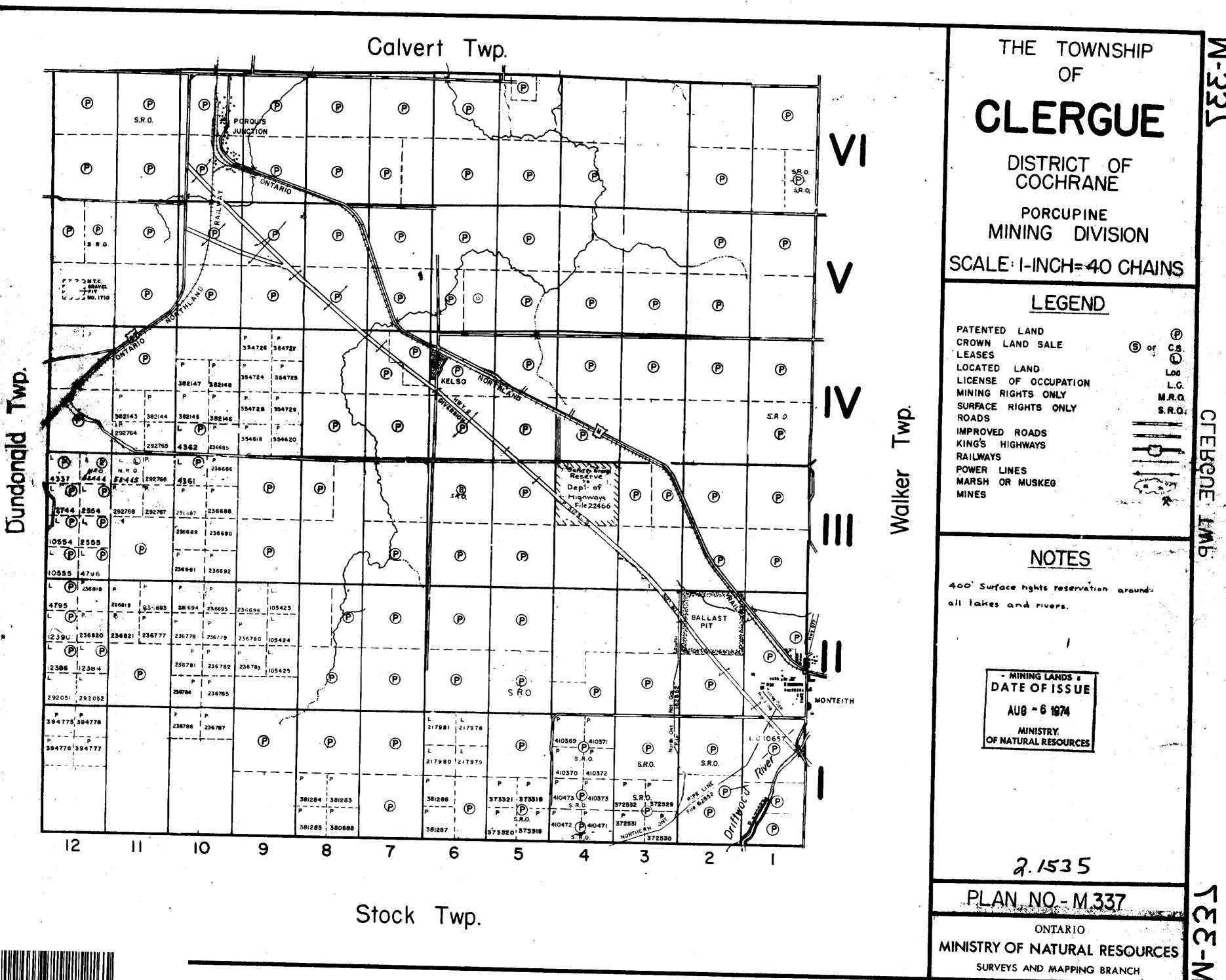
Township or Arca Stock and Clerque wps.	List numericany
Type of Survey Electromagnetic	P. 372.523
Chief Line Cutter John J. Johnson,	P 372.524
or Contractor 1/2 2 nd ane, Timming Onh	P 372 525
Party Chief John S. Johnson	P372526
1/2 2nd ane l'Immine, Out	P 372 527
Consultant Sand M. 15ell 672 Melvore Blud. Timmins Ont.	P372528
Address Address	P 372556
COVERING DATES	
Line Cutting april and May 1974	
Field	
Office July 1974	
INSTRUMENT DATA	
Make, Model and Type Mo Phase 55-15 Vortical Lorp	
Scale Constant or Sensitivity 1000 C.P.S Or provide copy of instrument data from Manufacturer's brochure.	
Radiometric Background Count	
Number of Stations Within Claim Group	
Number of Readings Within Claim Group 308	
Number of Miles of Line cut Within Claim Group 6.5 Miles	
Number of Samples Collected Within Claim Group	
CREDITS REQUESTED 20 DAYS per claim 40 DAYS per claim (Line cutting)	TOTAL7
Geological Survey	
Geophysical Survey Show Check Check	Send in duplicate to: FRED W. MATTHEWS
Geochemical Survey	SUPERVISOR-PROJECTS SECTION DEPARTMENT OF MINES &
DATE July 30 12 1474	NORTHERN AFFAIRS WHITNEY BLOCK QULEN'S PARK

QULEN'S PARK TORONTO, ONTARIO

ASSESSMENT WORK DETAILS	MINING CLAIMS TRAVERSED
St. 1. 1 h. 1 - T. 1.1	List numerically
Township or Area Stock and Clergue Trops	
Type of Survey Magnetometer	P372523
Chief Line Cutter John & Thuson	P 372.524
or Contractor 1/2 2nd and Timming, Onh	P 372525
Party Chief John J. Johnson,	P372526
112 2nd ane Jimmine, Ont.	P372527
Consultant Said K. Bell	P372528
672 Metrose Blud, Timmins, Ont.	P372556
Address	./
COVERING DATES	
Line Cutting April and May 1974	
Field	
Office	
INSTRUMENT_DATA	
Make Model and Type Mc Phar - M 700. Flug rate	
) cay to come	
Scale Constant or Sensitivity 20 Stammass Or provide copy of instrument data from Manufacturer's brochure.	
Radiometric Background Count	
Number of Stations Within Claim Group	
Number of Readings Within Claim Group	
Number of Miles of Line cut Within Claim Group 6-5 Miles	
Number of Samples Collected Within Claim Group	
CREDITS REQUESTED 20 DAYS per claim 40 DAYS per claim Includes (Line cutting)	тотаі7
Geological Survey	
Geophysical Survey Show Check Check	Send in duplicate to: FRED W. MATTHEWS
Geochemical Survey,	SUPERVISOR-PROJECTS SECTION DEPARTMENT OF MINES &
DATE July 30 9 1974	NORTHERN AFFAIRS WHITNEY BLOCK QUIEN'S PARK TORONTO, ONTARIO

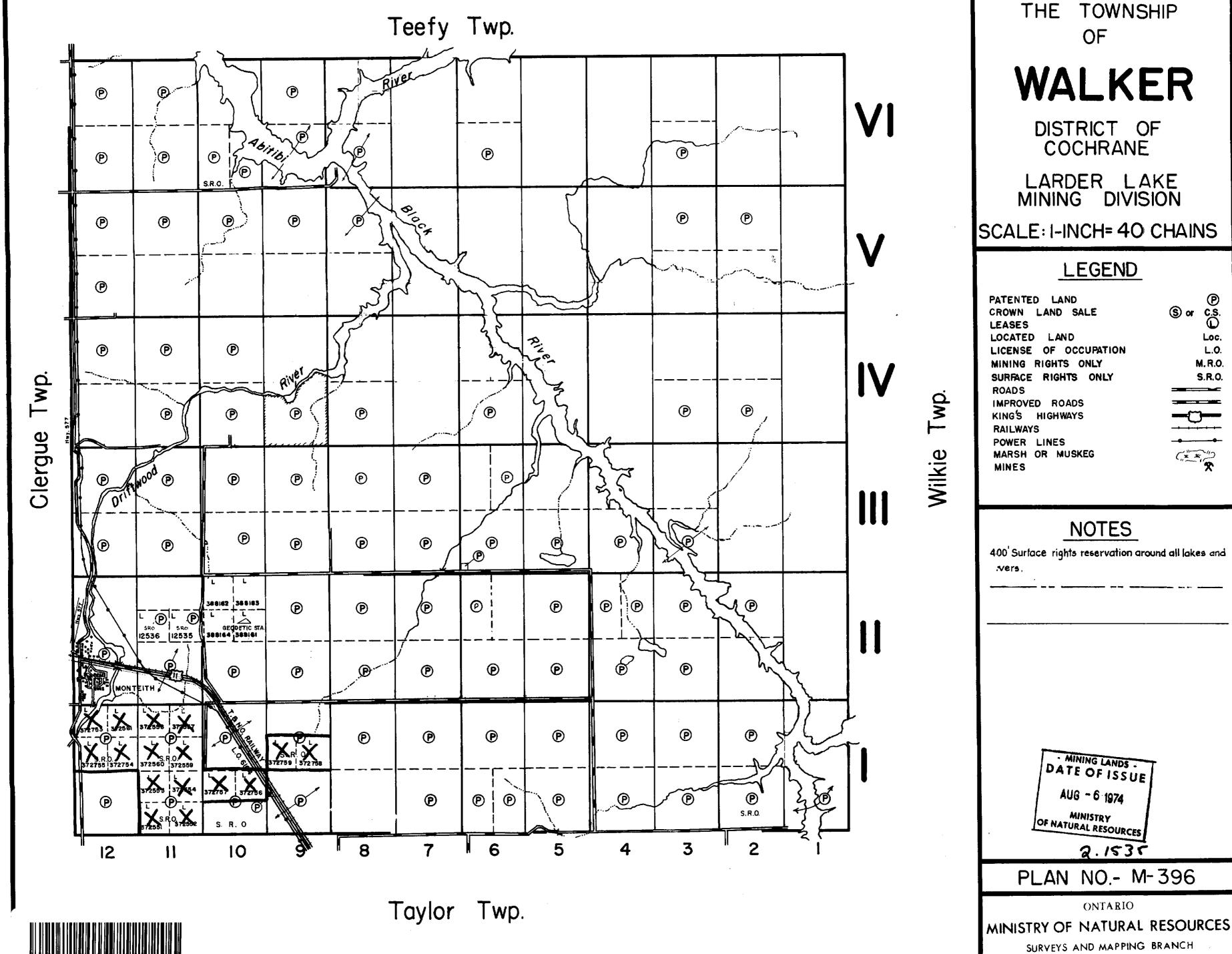
ASSESSMENT WORK DETAILS	MINING CLAIMS TRAVERSED
Township or Area Walker and Taylor Twoper	List numerically
Type of Survey <u>Clectromagnetie</u> ,	L 372 550
Chief Line Cutter John J. Johnson,	L 372.551
or Contractor 1/2 2nd Cene, Timmins, Oak.	4 372.552
Party Chief John J. Johnson	L 372553
Consultant Daid R. Bell Consultant	L 372554
672 Melrose Blul Timmin, Ont.	L 372 557
Addros	L 372 558
COVERING DATES	L 372 55 g
Line Cutting : april and May 1974	4 372 560
Field	1 372 561
Office	L 372053
INSTRUMENT DATA	4 372.754
Make, Model and Type Mc Phan SS-15 Vartical Loop	L 372 9 55
Scale Constant or Sensitivity 1000 C.P. 5. Or provide copy of instrument data from Manufacturer's brochure.	L 372756
Radiometric Background Count	L 372757
Number of Stations Within Claim Group 752	L 372 758
Number of Readings Within Claim Group 752.	L 372.759
Number of Miles of Line cut Within Claim Group 16.25 Miles	
Number of Samples Collected Within Claim Group	
CREDITS REQUESTED 20 DAYS per claim 40 DAYS per claim (Line cutting)	TOTAL
Geological Survey	
Geophysical Survey Show Check	Send in duplicate to:
Geochemical Survey	SUPERVISOR-PROJECTS SECTION DEPARTMENT OF MINES &
DATE July 30 12 1974	NORTHERN AFFAIRS WHITNEY BLOCK QUEEN'S PARK TOE CONTO ONTARIO

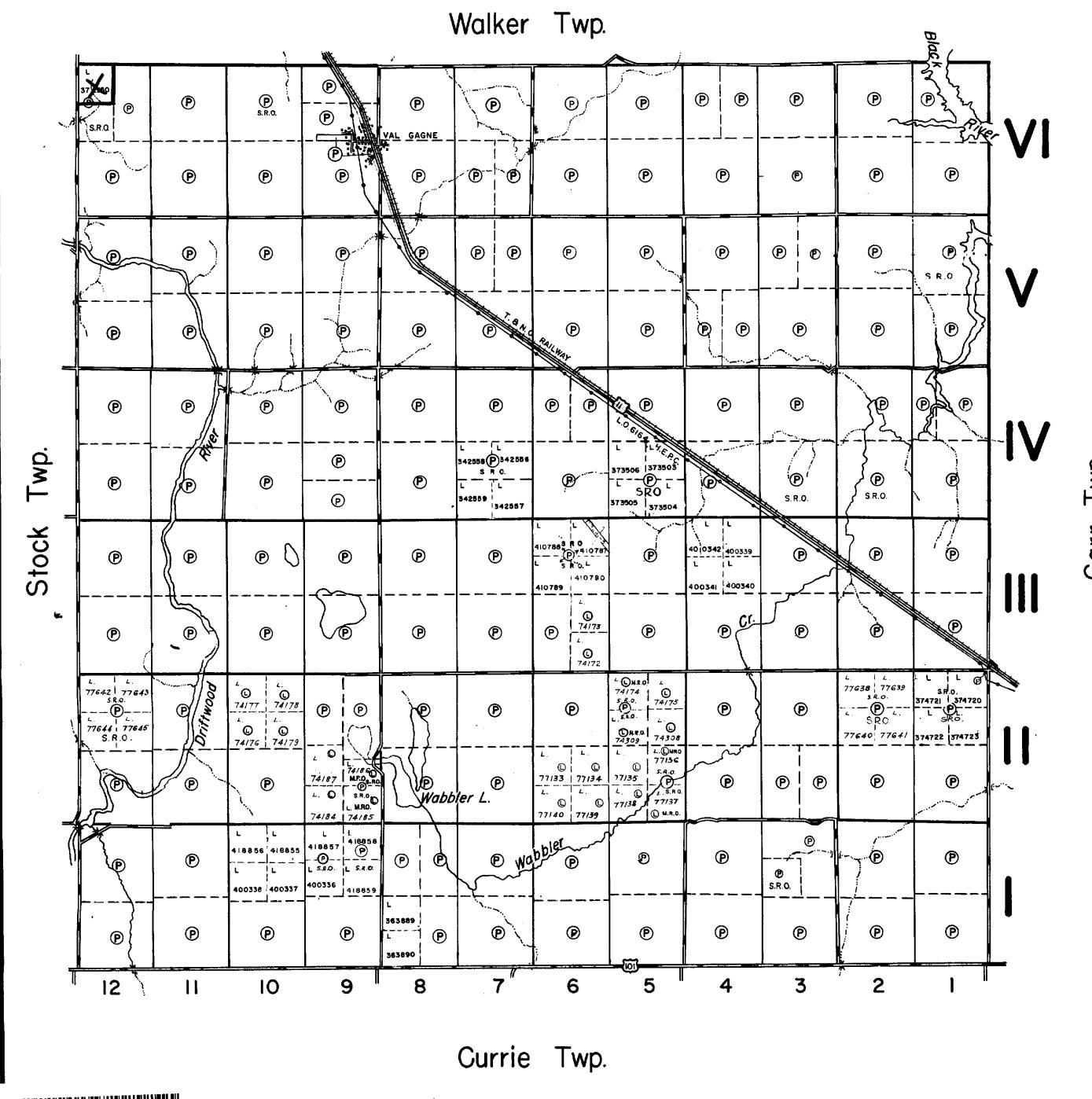
ASSESSMENT WORK DETAILS	MINING CLAIMS TRAVERSED
Township or Area Walker and Taylor Twops	List numerically
Type of Survey Magnetometer	(L)372550
Chief Line Cutter John J. Johnson or Contractor	L 372 551
112 2 nd ave., & Limmins, White	4 372 552
Party Chief John & Johnson	L 372 553
Consilient De 12 2 nd Cene, a Timmine, Out	L 372554
Consultant Name 672 Melvose Blod. Tienmins Out.	1 372 557
Address / Address	L 372 558
COVERING DATES	L 372 559
Line Cutting . april and May 1974	1372560
Field	L 372 561
Office July 1974	L 372 753
INSTRUMENT DATA	X 372754
Make, Model and Type Ma Phas 11-700 Fluxgate magnetishitis	1.372755
Scale Constant or Sensitivity 20 Sammes Or provide copy of instrument data from Manufacturer's brochure.	L 372 756
Radiometric Background Count	1 372757
Number of Stations Within Claim Group	L 372758
Number of Readings Within Claim Group 1522	L 372759
Number of Miles of Line cut Within Claim Group 16.25 miles	
Number of Samples Collected Within Claim Group	
CREDITS REQUESTED 20 DAYS 40 DAYS Includes per claim (Line cutting)	TOTAL, _/7
Geological Survey	
Geophysical Survey	Send in duplicate to:
Geochemical Survey	FRED W. MATTHEWS SUPERVISOR-PROJECTS SECTION DEPARTMENT OF MINES &
DATE Inly 30 # 1974 SIGNED The Johnson Q	NORTHERN AFFAIRS WHITNEY BLOCK QUEEN'S PARK TORONTO, ONTARIO



CLEBONE

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THE TOWNSHIP OF

TAYLOR

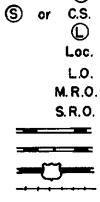
DISTRICT OF COCHRANE

LARDER LAKE MINING DIVISION

SCALE: I-INCH= 40 CHAINS

LEGEND

PATENTED LAND
CROWN LAND SALE
LEASES
LOCATED LAND
LICENSE OF OCCUPATION
MINING RIGHTS ONLY
SURFACE RIGHTS ONLY
ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES



NOTES

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



2.1535

PLAN NO.-M.391

ONTARIO

MINISTRY OF NATURAL RESOURCES

SURVEYS AND MAPPING BRANCH



STOCK

STOCK

OF

DISTRICT OF COCHRANE

PORCUPINE MINING DIVISION

SCALE: I-INCH=40 CHAINS

LEGEND

PATENTED LAND S or C.S. CROWN LAND SALE **LEASES** Loc. LOCATED LAND LICENSE OF OCCUPATION L.0. M.R.O. MINING RIGHTS ONLY S.R.O. SURFACE RIGHTS ONLY ROADS IMPROVED ROADS KING'S HIGHWAYS RAILWAYS POWER LINES MARSH OR MUSKEG MINES

NOTES

400' Burtace rights reservation around all lakes and

- MINING LANDS 1 DATE OF ISSUE AUB - 6 1974 MINISTRY OF NATURAL RESOURCES

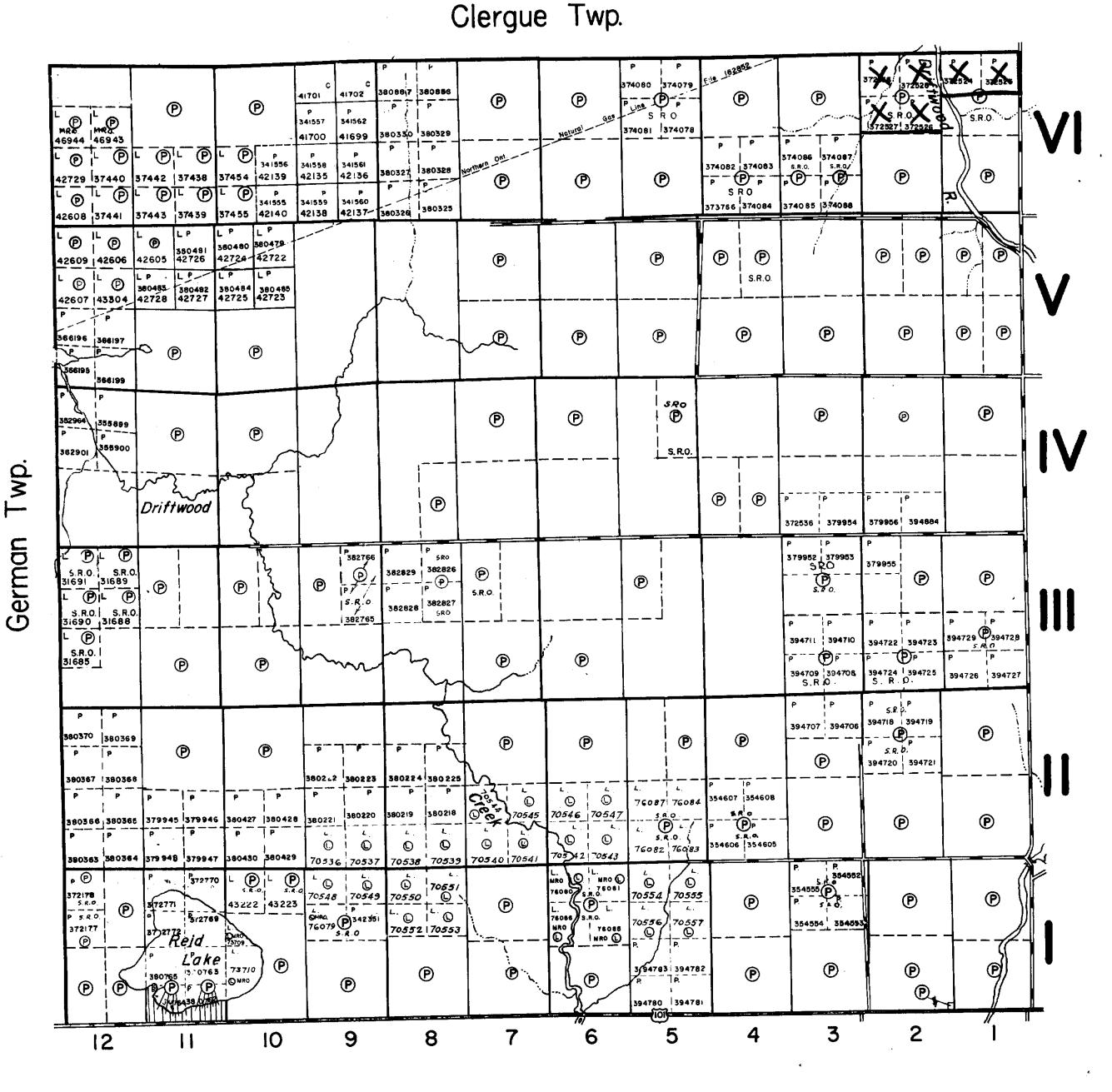
2.1535

PLAN NO.- M. 388

ONTARIO

MINISTRY OF NATURAL RESOURCES

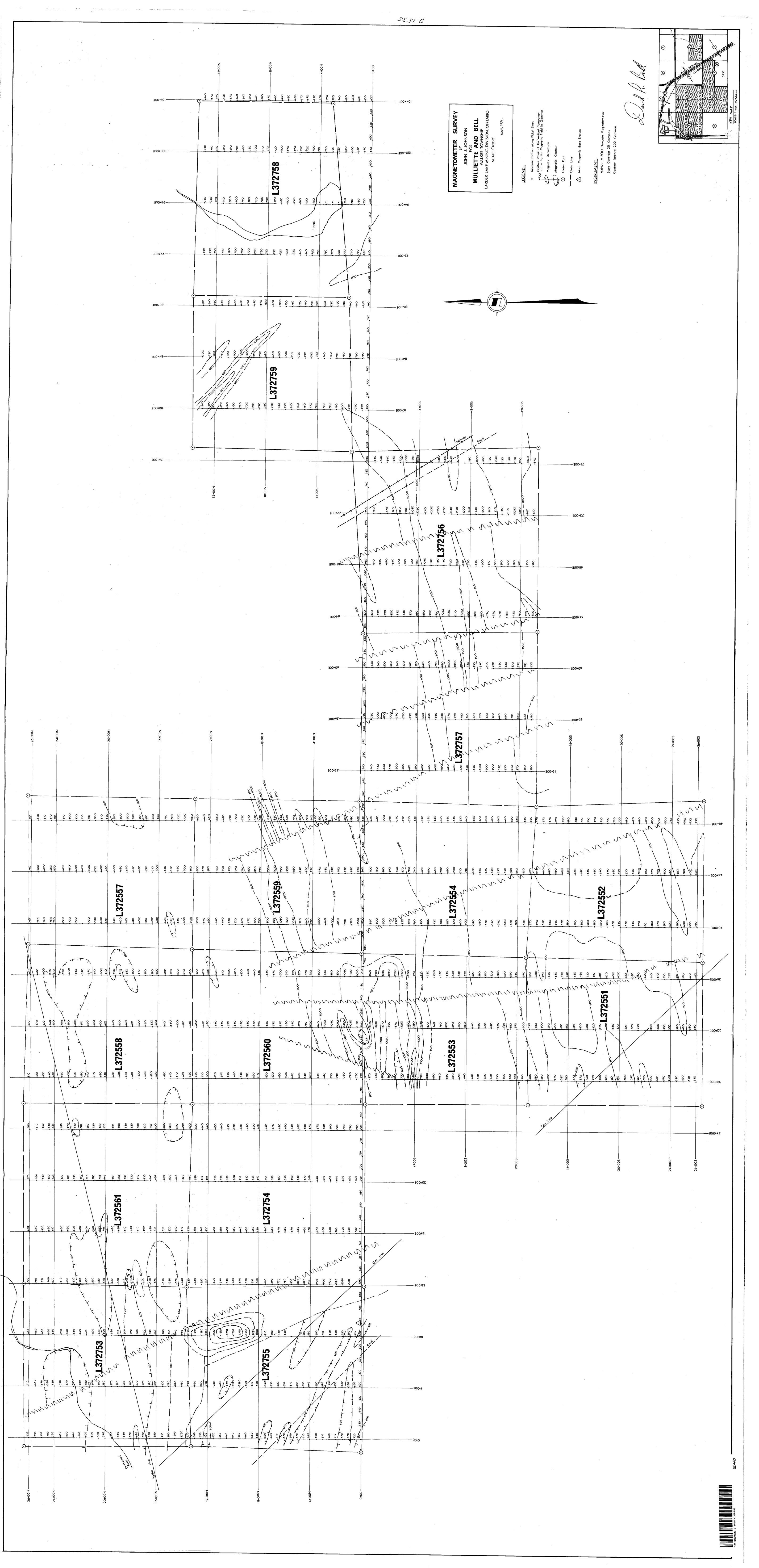
SURVEYS AND MAPPING BRANCH

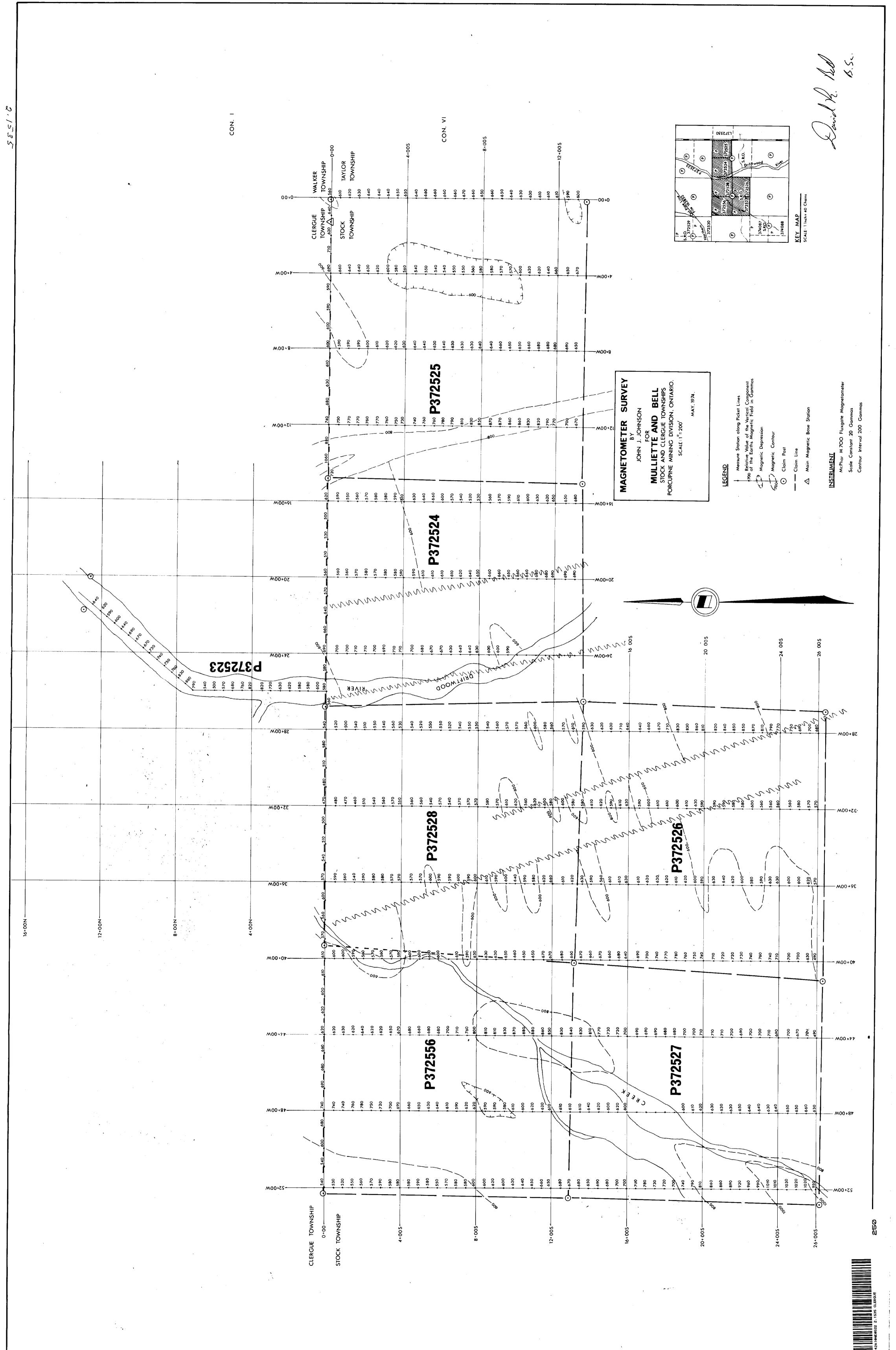


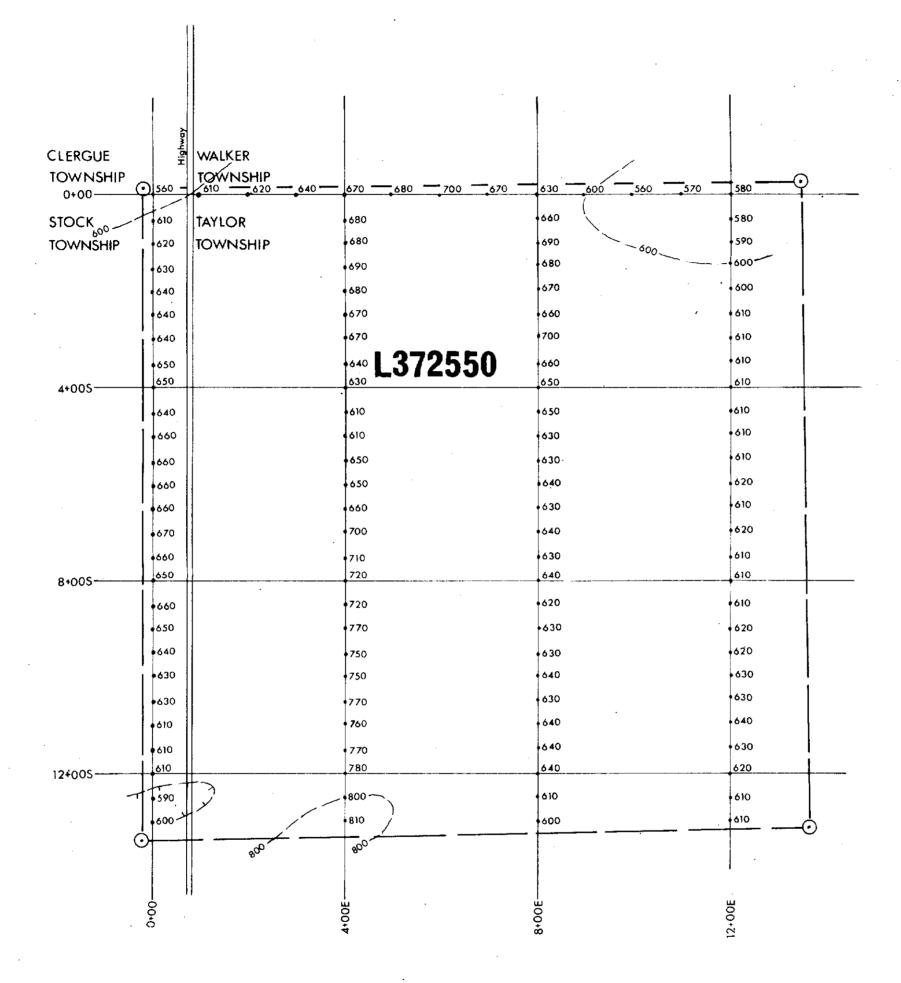
Bond Twp.

88E.M

888.M







MAGNETOMETER SURVEY

JOHN J. JOHNSON FOR

MULLIETTE AND BELL

TAYLOR TOWNSHIP

LARDER LAKE MINING DIVISION, ONTARIO.

SCALE: 1"= 200'

MAY, 1974.

LEGEND

Measure Station along Picket Lines

700 Relative Value of the Vertical Component of the Earths Magnetic Field in Gammas

Magnetic Depression

Magnetic Contour

Claim Post

Claim Line

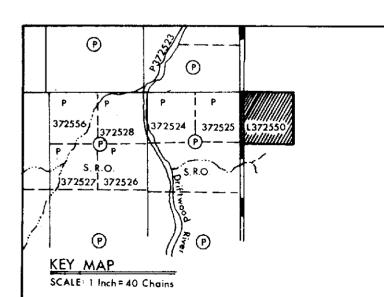
Main Magnetic Base Station

INSTRUMENT

McPhar M 700 Fluxgate Magnetometer

Scale Constant 20 Gammas

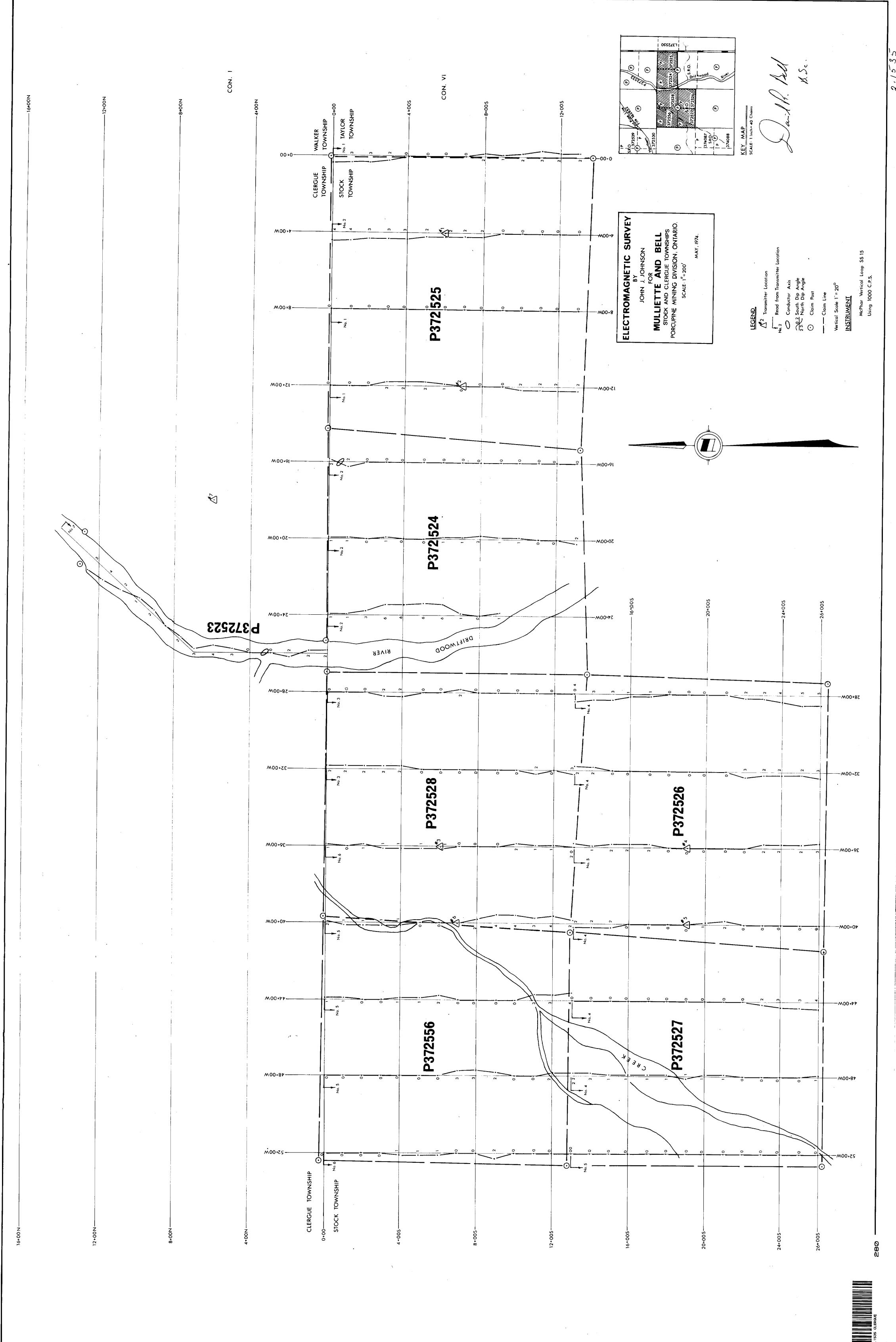
Contour Interval 200 Gammas

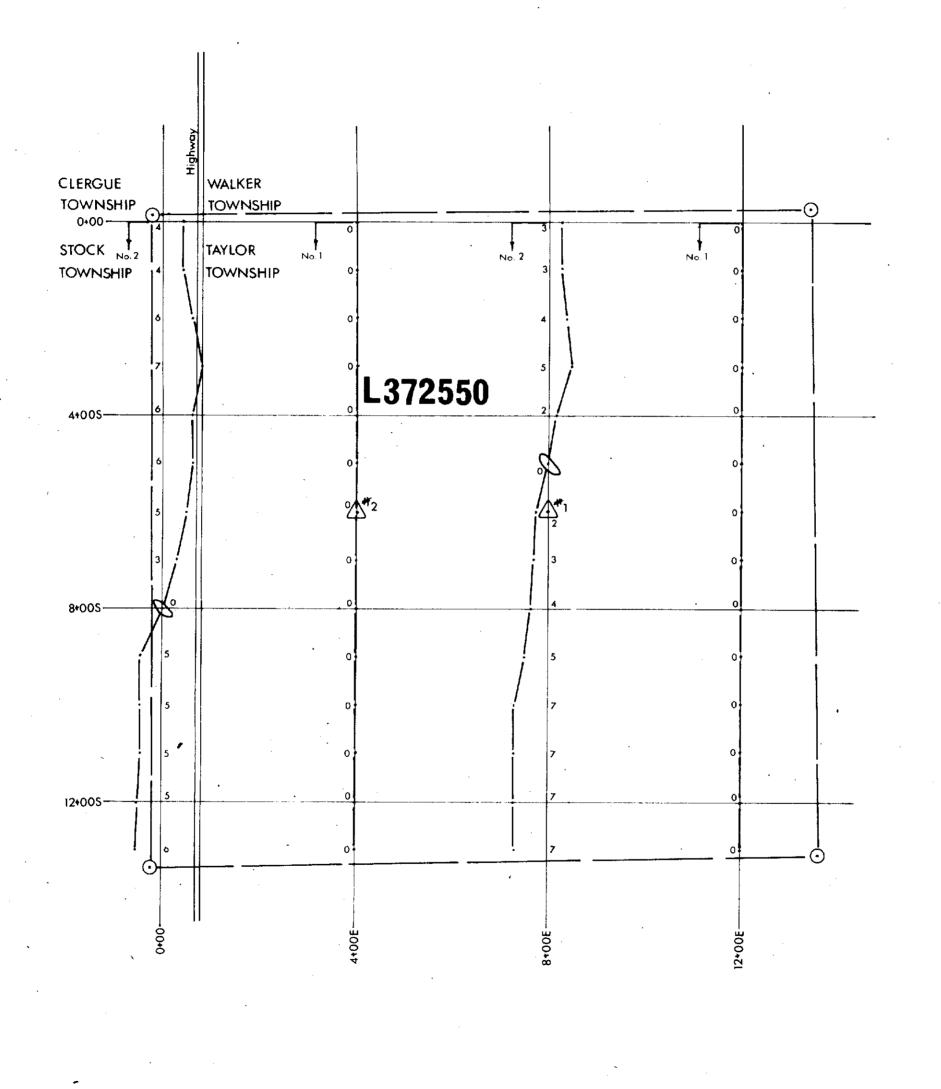




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ELECTROMAGNETIC SURVEY

BY

NOSNHOL L NHOL

FOR

MULLIETTE AND BELL

TAYLOR TOWNSHIP

LARDER LAKE MINING DIVISION, ONTARIO.

SCALE: 1"= 200'

MAY; 1974.

LEGEND

^*2 __

Transmitter Location

.2 Read

Read from Transmitter Location

O Conductor Axis

0 2 South Dip Angle North Dip Angle

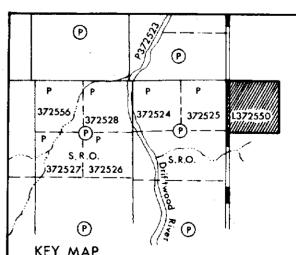
Claim Post

---- Claim Line

Vertical Scale 1"= 20°

INSTRUMENT

McPhar Vertical Loop SS 15
Using 1000 C.P.S.



KEY MAP
SCALE: 1 Inch=40 Chains

Land 1. Bell



290

5851.8