



A Report on the Property of

DAVID J. MEUNIER

Geary Township  
Porcupine Mining Division  
Ontario

By

R.P. Bowen, P.Eng.

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September 1990

BG-0007-90-1

DP90-406



42A13SE0001 63.5939 GEARY

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Conductor Map 1:1,500  
(back pocket)

## SUMMARY

This report details the work done claims held by David J. Meunier with a 20% interest held by R.P. Bowen. The purpose of the work was to locate on the ground two conductors defined by a recent INPUT survey released by the Ontario Geological Survey, OGS (1989). Previous diamond drilling by Teck Corporation on the southernmost conductor had returned an assay of 0.1 ounces/gold. The northernmost conductor had never been drilled. By defining the conductors on the ground it was hoped that at least one short diamond drill hole could be drilled to intersect the conductor.

A Max-Min electromagnetic survey was conducted on two north-south lines where the two conductors were thought to be. The survey did indeed define both conductors, however, due to the swamp and dense cedar cover in the area it was determined that diamond drilling was beyond the resources of the claim holder. Accordingly, an attempt is underway to interest a better financed party to conduct the diamond drilling program.

The survey was financed under an OPAP (Ontario Prospectors Assistance Program) grant, No. OPG90-257 of \$10,000.00. The line cutting and EM survey cost \$650.00. Permission was applied for and received that the balance of the grant be applied to another project in Loveland Township.

## INTRODUCTION

This report describes the Max-Min electromagnetic survey over parts of 4 staked mining claims in Geary Township, Ontario, Porcupine Mining Division.

The claims are held by Mr. David J. Meunier, License M-17157 of 403 Dome Street, South Porcupine, Ontario P0N 1H0. Mr. R.P. Bowen of 142 Eric Csc., Porcupine, ON holds a 20% interest in the claims.

The survey was conducted by Rayan Exploration Ltd., 676 Murray Street, Timmins, Ontario P4N 7B2.

The survey was conducted with funding provided by an OPAP (Ontario Prospectors Assistance Program) grant: Grant No. OPG90-257, OPAP Registration No. OP90-406.

### Location and Access

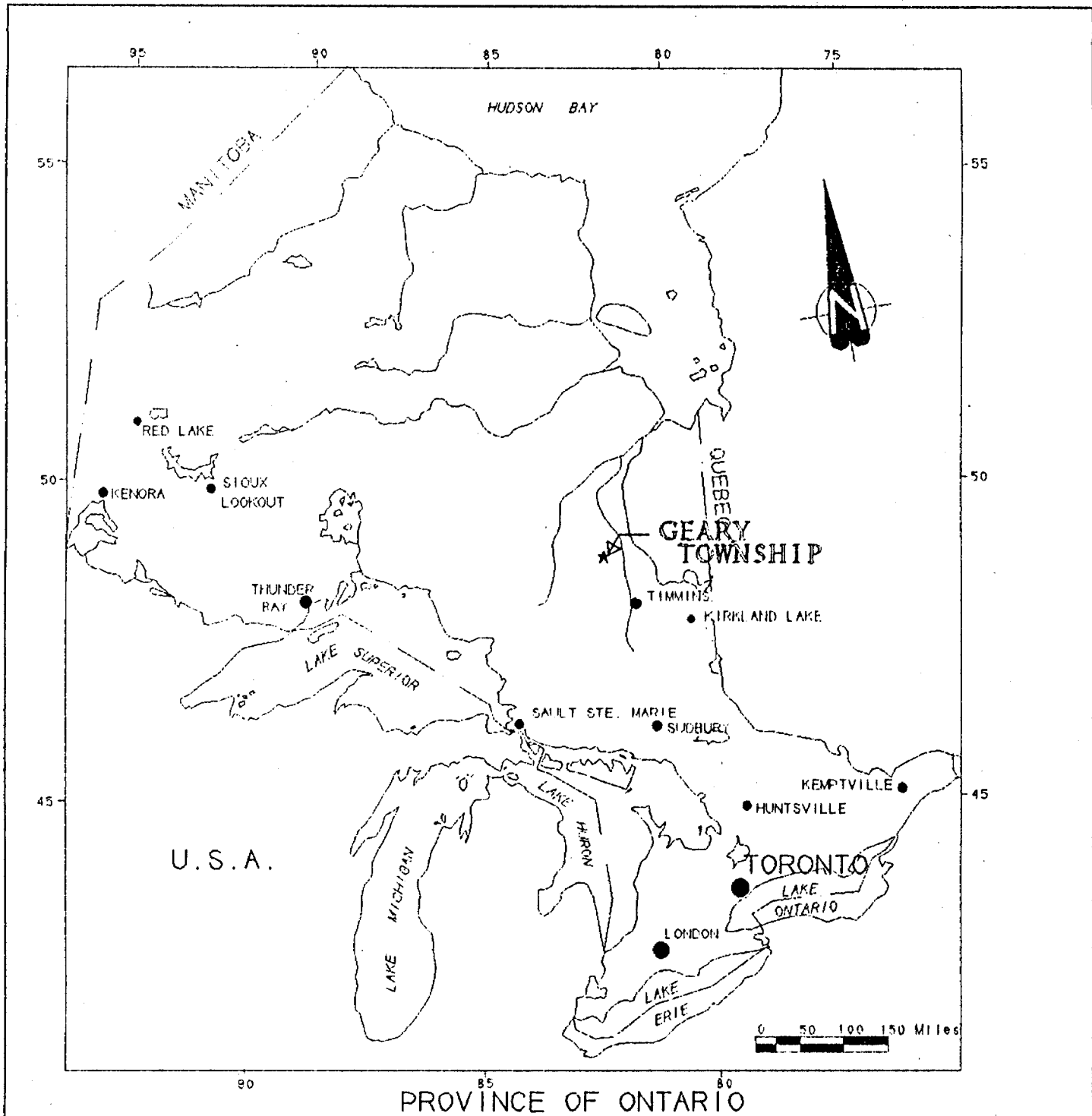
Geary Township lies approximately 25 miles north of Timmins, Figure 1. Geary Township may be reached by a forest access road going north from Highway 576 at Kamiskotia Lake or south from Highway 11 west of Smooth Rock Falls. This road passes approximately three quarters of a mile from the northwestern corner of the claim block.

### Claims Covered in this Survey

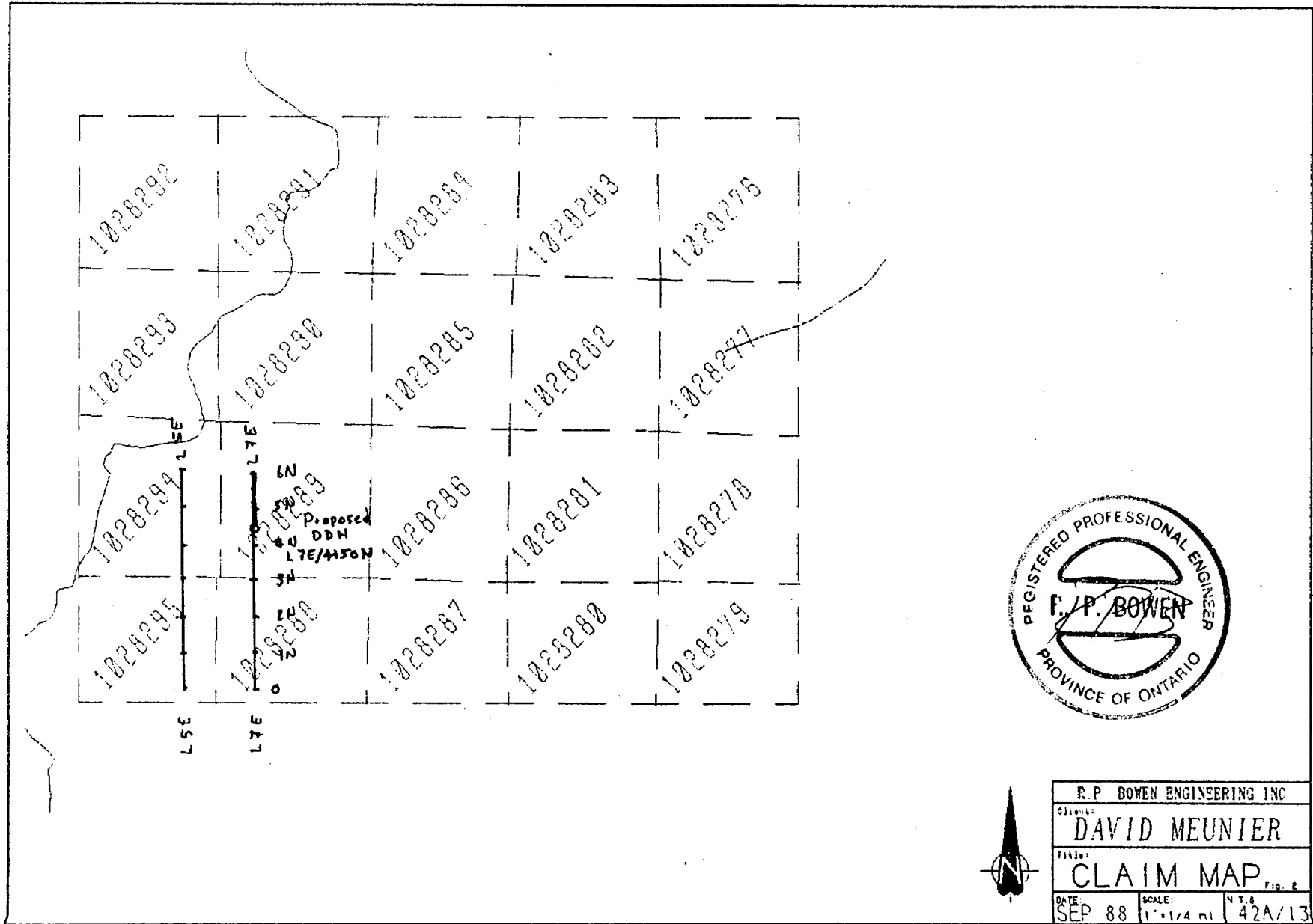
Parts of 4 contiguous staked mining claims were covered in this survey.

#### Claim Number

P-1028288  
P-1028289  
P-1028294  
P-1028295



R. P. BOWEN ENGINEERING INC.		
Client: DAVID J. MEUNIER		
Title: REGIONAL LOCATION MAP		
Date: July 1990	Scale: 1" = 150 mi	U.T.S. 42A
Drawn: R.P.B.	File: BG-2007-90-1	Fig. 1



R.P. BOWEN ENGINEERING INC		
DESIGNED BY: DAVID MEUNIER		
DRAWN BY: CLAIM MAP		
DATE: SEP 88	SCALE: 1" = 1/4 MI	N.T.S. 42A/13

## PREVIOUS WORK

Of the several companies that have submitted work in Geary Township only the Keevil Mining Group Ltd. actually diamond drilled on the present Menuier claims.

### C.C. Huston Property Grid No. 2, T-575, 1955

Grid number two covered the ground west and on strike to the present claim block. A few weak conductors were delineated in geophysical work, however, no follow-up work was done.

### The Consolidated Mining and Smelting Company of Canada Limited, T-1034, 1965

Cominco held ground south of the property and conducted an electromagnetic survey and drilled three holes into TURAM conductors. The drilling intersected mostly talc-chlorite and chlorite schists with graphitic slate and pyritic conductors.

### Great Basin Mines Limited, T 1277, 1965

Great Basin held a block of claims covering the eastern claims up to the township boundary. These 12 claims were surveyed with magnetic and EM methods. The magnetics delineated several diabase dikes. No follow-up work was recommended.

### Gulf Minerals Canada Limited, T-2367, 1981

Gulf conducted a large exploration program over several townships and several grids were cut over selected areas in Geary Township although none were on the present Meunier claim group. Diamond drilling east of the property intersected intermediate tuffs, wacke with graphitic and basalt tuff. Grids O, P and Q were cut and magnetic surveys conducted over them. Several diamond drill holes were drilled as follow-up.

P-1 West of the property intersected basalts, komatiites, graphitic-pyrite tuffs and rhyolite with lesser ultramafics.

Q-1 Collared in oxide iron formation then pyrite with an alternating series of andesite and pyrite to basalt, graphite and ultramafics.

N-1 Rhyolite tuffs and a pyritic zone were encountered.

U-1 Intermediate to felsic ash flow tuff with quartz-carbonate veining and calcite-ankerite-sericite alteration was described.

U-2 Intermediate tuff with quartz-carbonate veining and similar alteration to U-1 was intersected.

Keevil Mining Group Limited., T-1002, 1965

The Keevil Group staked 9 claims over what now is the present Meunier claim group. They conducted a ground magnetic survey over 9 claims and an electromagnetic survey over 6 claims. Follow-up diamond drilling was done on the defined conductors. The first hole (T-65-16) drilled directly down a diabase dike. The next hole (T-65-16A) was stepped over to the west and intersected 5 feet of 0.17 oz/ton gold. The other holes (T-65-17 and T-65-19) intersected felsic tuffs and chemical metasediments as well as graphitic slates that contained sulfides.

Leitch Gold Mines Ltd., T-995, 1965

Leitch staked 15 claims west of the present claims. One diamond drill hole was put down and intersected graphitic chert, intermediate and felsic tuffs. No significant assays were returned, but, shearing and mineralization were prevalent.

David Meunier, T-3129, 1986

David Meunier staked 78 claims and had a geological survey conducted over the claim group in 1986. The claims were not optioned and money was not raised to continue work and they were allowed to lapse. The present claims were restaked over the north-central part of this block.

Phelps Dodge Corporation of Canada Limited, T-1706, 1975

Phelps Dodge conducted a number of large scale surveys and staked numerous claim blocks over geological and geophysically interesting ground. One such group was south of the present claim block. Nothing of significance was detected from the ground magnetic and electromagnetic surveys and no follow-up work was done.

Young Davidson Mines, T-1783, 1977

In the same general area of the Cominco drilling Young Davidson staked a group of claims. Ground magnetic and electromagnetic surveys were conducted delineating several conductors. Five diamond drill holes were put down as follow-up. Holes 1 and 2 intersected altered and sheared metavolcanics with sheared diorite. Alteration was carbonate, (Hole one lost circulation and had to be terminated before bedrock was reached so it was redrilled). Hole 3 intersected peridotite and talc-chlorite schist and diorite. Hole 4 intersected peridotite, mafic metavolcanics, a lamprophyre dike and some carbon-rich and amygdaloidal sections. No assays of significance were reported, however, four of the claims were taken to



lease for both surface and mining rights.

Yukeno Mines Limited, T-948, 1965

Sulmac Exploration Services Limited conducted ground magnetometer and electromagnetic surveys over claims to the southwest of the present claims. The magnetics indicated a north-south diabase dike along the west side of the property. Lines were cut parallel (east-west) to the stratigraphy so only the dikes were discerned.

## HORIZONTAL LOOP THEORY

The *moving source or horizontal-loop electromagnetic* method is one of the most common in use as a follow-up geophysical tool to further discriminate conductors delineated by airborne or VLF methods.

The system is essentially a transmitter connected to a receiver by a reference cable. The distance between the transmitter and receiver varies between 25 and 250 meters depending upon the desired depth of penetration. Transmitter power is low and several frequencies are used (four with the Max Min II system; 444, 888, 1777 and 3555 Hz).

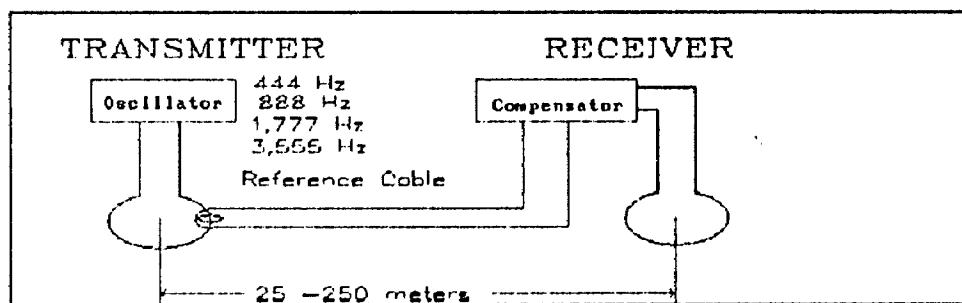
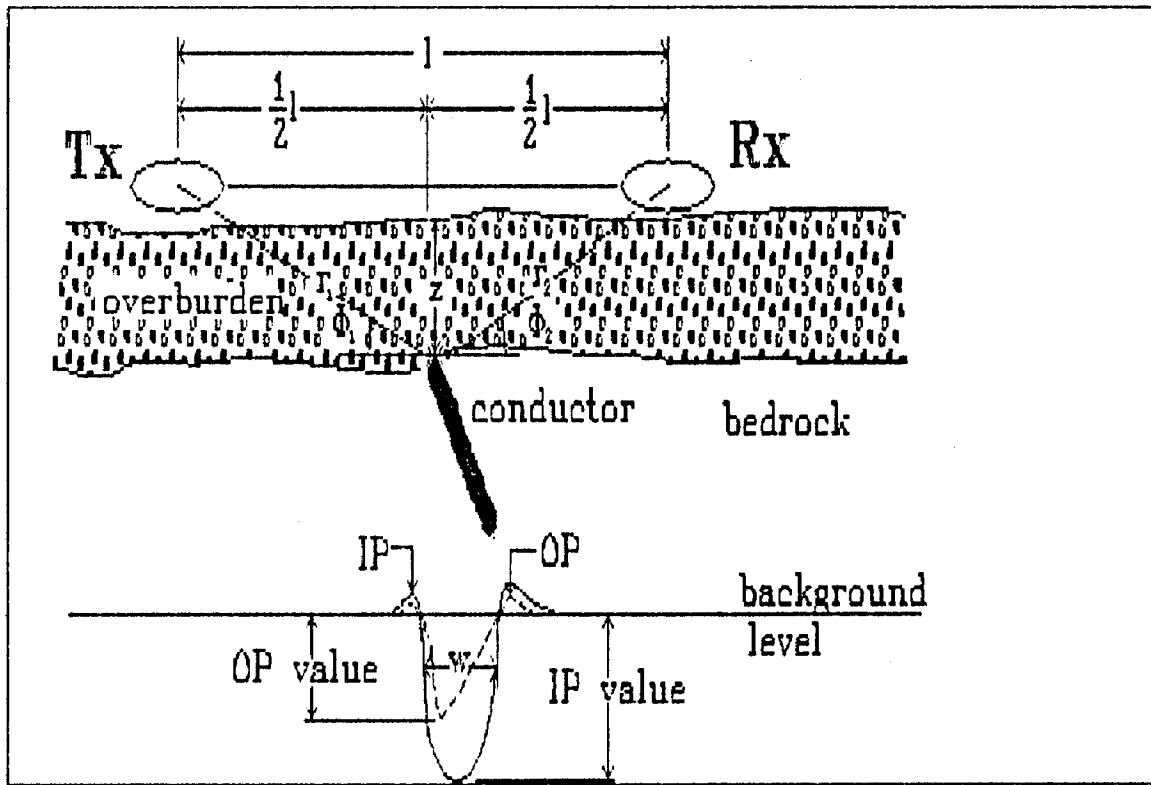


Figure 1 - Simplified horizontal-loop diagram.

The transmitter emits a primary field. The transmitter and receiver move in line perpendicular to the geological strike and any conductive bodies will emit a secondary field. This field is referenced as a percent of the primary field by a compensating network in the receiver. This receiver voltage is split into two components, one in-phase and one 90° or one-quarter wave out of phase (quadrature). Where no conductors are present the in-phase and quadrature components are typically zero. As a conductive body is approached both the in-phase and quadrature components increase above background or zero then decrease to a minimum as the conductor is passed over then increase above zero and decrease back to near zero or background as the system traverses away from the conductor. Symmetry or asymmetry of the anomaly curve may indicate the dip of the conductor. The ratio between the in-phase and quadrature values indicates the quality of the conductor, the larger the ratio between the in-phase and quadrature values the better the conductor. Many vector diagrams for estimating depth and resistivity/thickness for the various shapes and dips of conductors have been calculated and are available to assist in the interpretation of anomalies obtained by this method.



- Tx = Transmitter
- Rx = Receiver
- $l$  = Coil separation
- $r_1$  = Tx - conductor distance
- $r_2$  = Rx - conductor distance
- $\Phi_1$  = Tx - conductor angle
- $\Phi_2$  = Rx - conductor angle
- $z$  = Depth to bedrock
- IP = In-phase or real component
- OP = Out-of-phase or imaginary component - quadrature
- $w$  = Conductor width

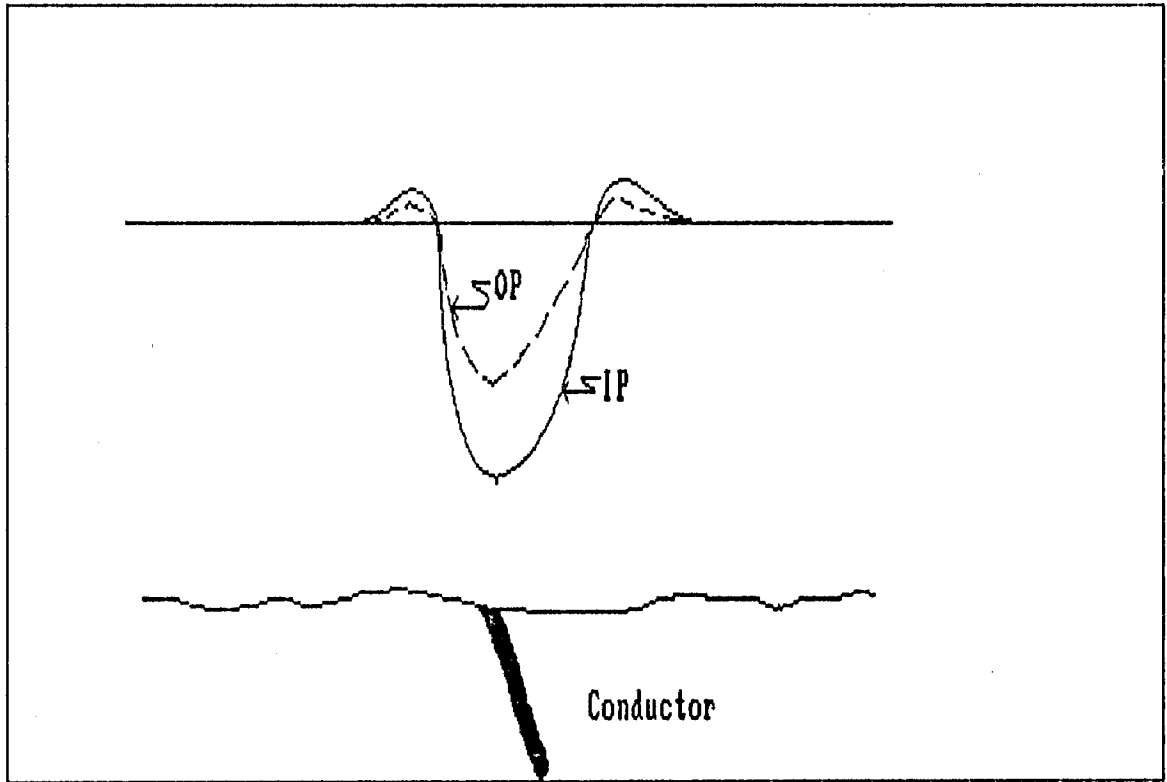


Figure 3 - Typical curves over a single vertical to near-vertical conductor.

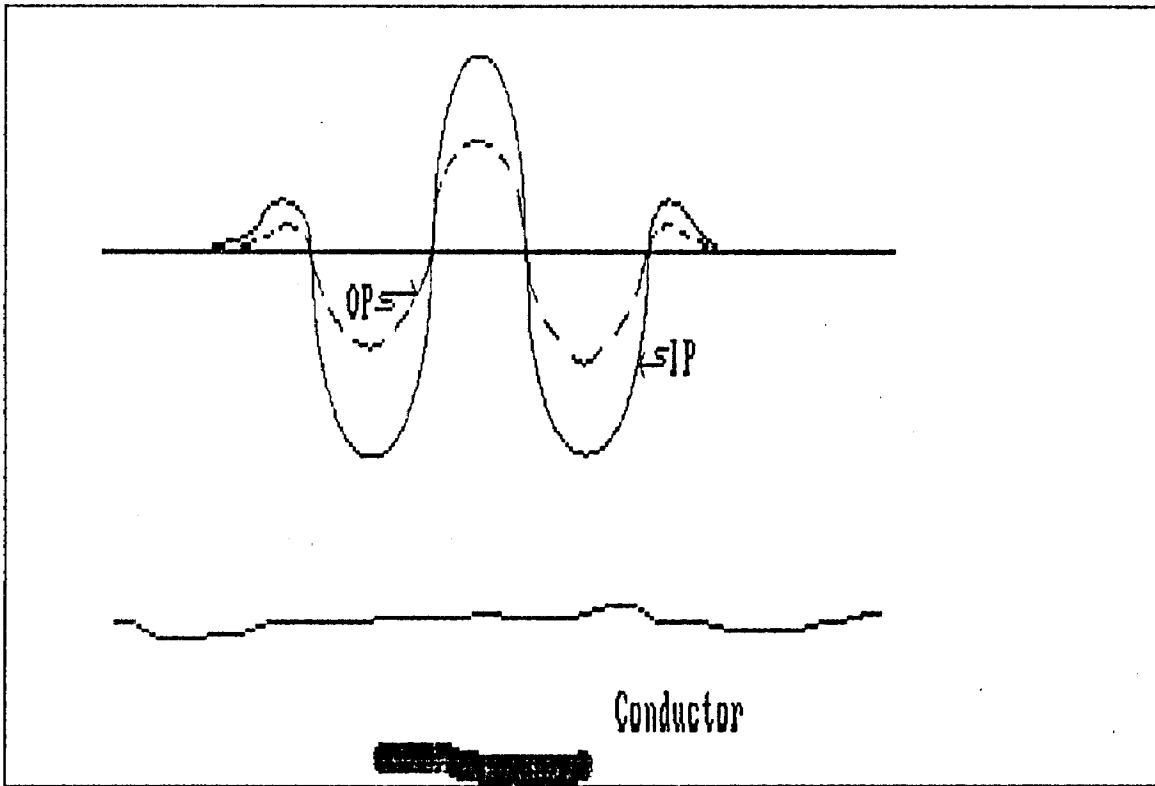


Figure 4 - Typical curves over a horizontal conductor.

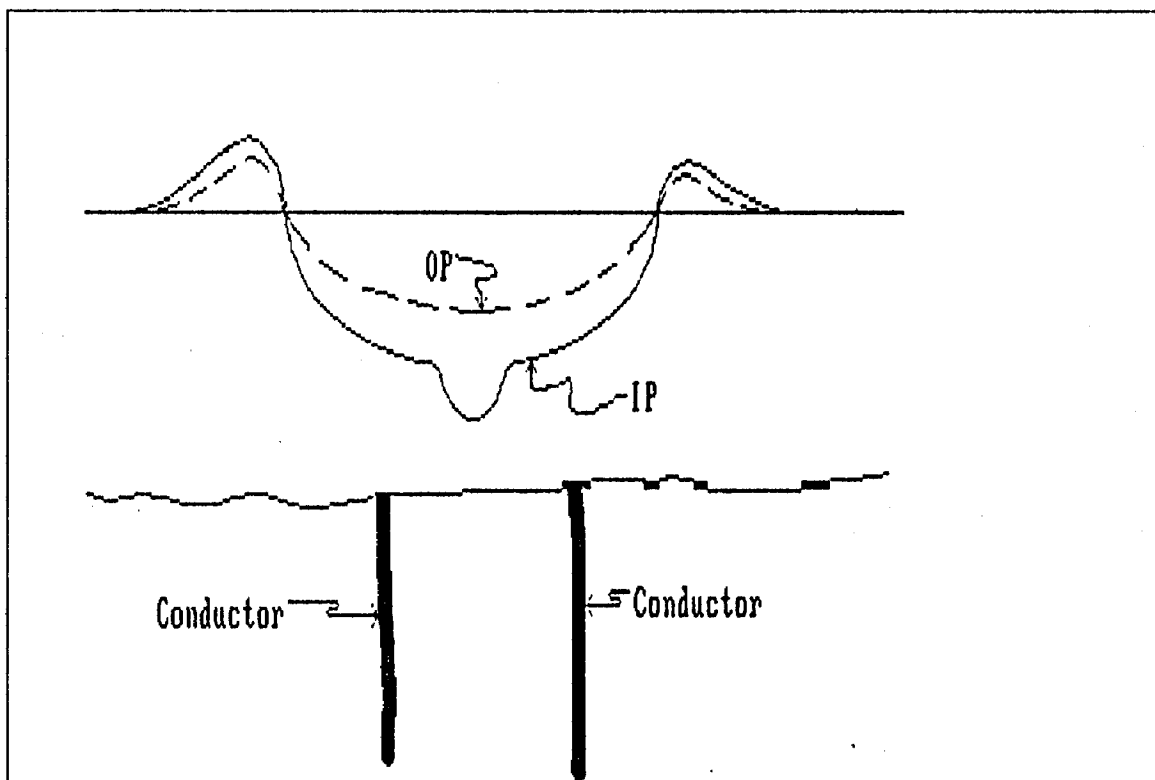


Figure 5 - Typical curves over two vertical to near-vertical conductors.

## GENERAL GEOLOGY

### Regional Geology

The regional geology underlying the area of Geary Township is a synformal structure about an east trending axis. Felsic to intermediate pyroclastics ranging from breccias to tuffs with lesser flows form the inner portion of the synform with mafic metavolcanic flows on the outer portions of the limbs. The sequence appears to be repeated further out on the limbs. Lesser mafic and felsic hypabyssal intrusives are noted locally. Cherty beds are noted in diamond drill core and mineralization is noted in diamond drilling north and west of the property. metasedimentary rocks were encountered in diamond drilling as well, however, they were a minor percentage. They were often graphitic slates and were often pyritized indicating deposition in a reducing environment. Alteration appears to be mainly chlorite and carbonate with lesser sericite and green mica and sulfides. Minor komatiitic units are indicated by the presence of talc schists. Shearing is described as schistose and other penetrative fabric descriptions. Diabase dikes cut all lithologies and was intersected in at least one diamond drill hole.

### Property Geology

The immediate Meunier claims are underlain by a series of predominately felsic to intermediate metavolcanic tuffs and pyroclastics with lesser mafic flows. Only minor clastic and chemical metasedimentary units are present as interpreted from diamond drilling. Graphitic slates with pyrite and felsic tuffs and associated pyroclastics that have been pyritized are part and parcel of the same package. Cherty beds may indicate exhalites at the hiatus between volcanic eruptions. The axis of the syncline described in the foregoing section passes through the Meunier property. Metamorphism appears to greenschist in grade.

Alteration from diamond drilling records is chlorite, sericite, green mica and pyrite. Mineralization is mainly pyrite, however, pyrrhotite and chalcopyrite was also reported. One gold assay of 0.17 ounces gold per ton was reported in the Koevil records.

### CONCLUSIONS AND RECOMMENDATIONS

This property is covered with a deep mantle of glacial overburden and a comprehensive program of geophysics including ground magnetic and horizontal loop electromagnetic surveys followed up in selected areas with induced polarization/resistivity surveys will be the most cost effective way to gain further information about the underlying geology.

At this time a diamond drill program to test the conductors defined by this survey should be initiated. The electromagnetic survey should be conducted over the rest of the property to further outline the two conductors this survey defined and to determine if other conductors exist.



## REFERENCES

- Bright, E.G. and Hunt, D.S.  
1972: Geary Township, District of Cochrane; Ontario Department of Mines and Northern Affairs, Prelim. Map P.739, Timmins Data Series, scale 1 inch to  $\frac{1}{4}$  mile. Data compiled 1971.
- Pyke, D.R. et al  
1973: Timmins-Kirkland Lake Sheet, Map 2205, Ontario division of Mines, Ministry of Mines and Northern Affairs, scale 1:253,440.

## ASSESSMENT WORK FILES

- C.C. Huston Property Grid No. 2, T-575, 1955
- The Consolidated Mining and Smelting Company of Canada Limited, T-1034, 1965
- Great Basin Mines Limited, T-1277, 1965
- Gulf Minerals Canada Limited, T-2367, 1981
- Keevil Mining Group Ltd., T-1002, 1965
- Leitch Gold Mines Ltd., T-995, 1965
- David Meunier, T-3129, 1986
- Phelps Dodge Corporation of Canada Limited, T-1706, 1975
- Young Davidson Mines, T-1783, 1977
- Yukeno Mines Limited, T-948, 1965

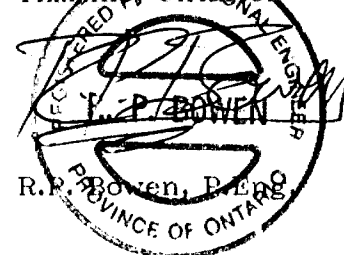
## CERTIFICATION

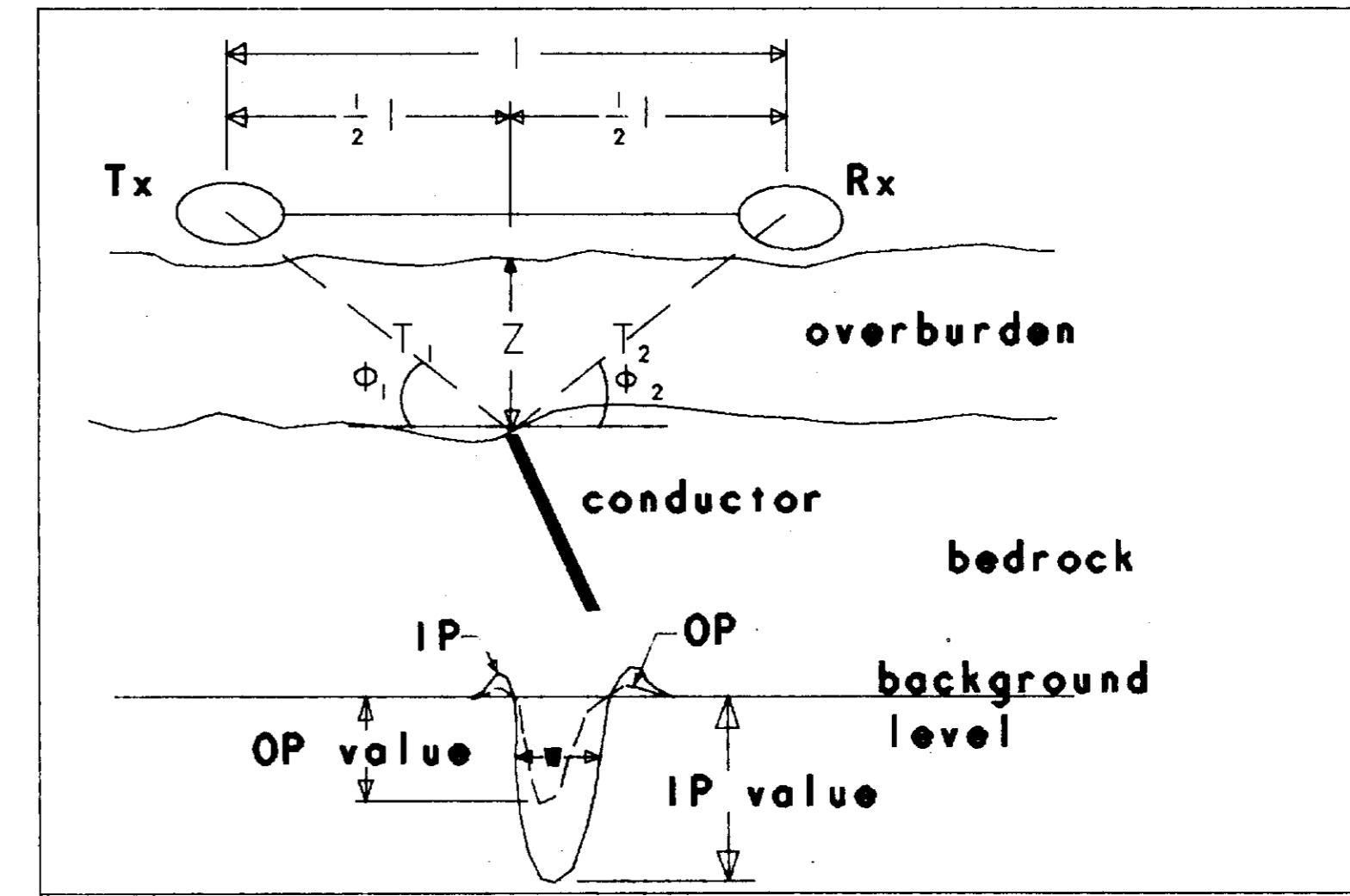
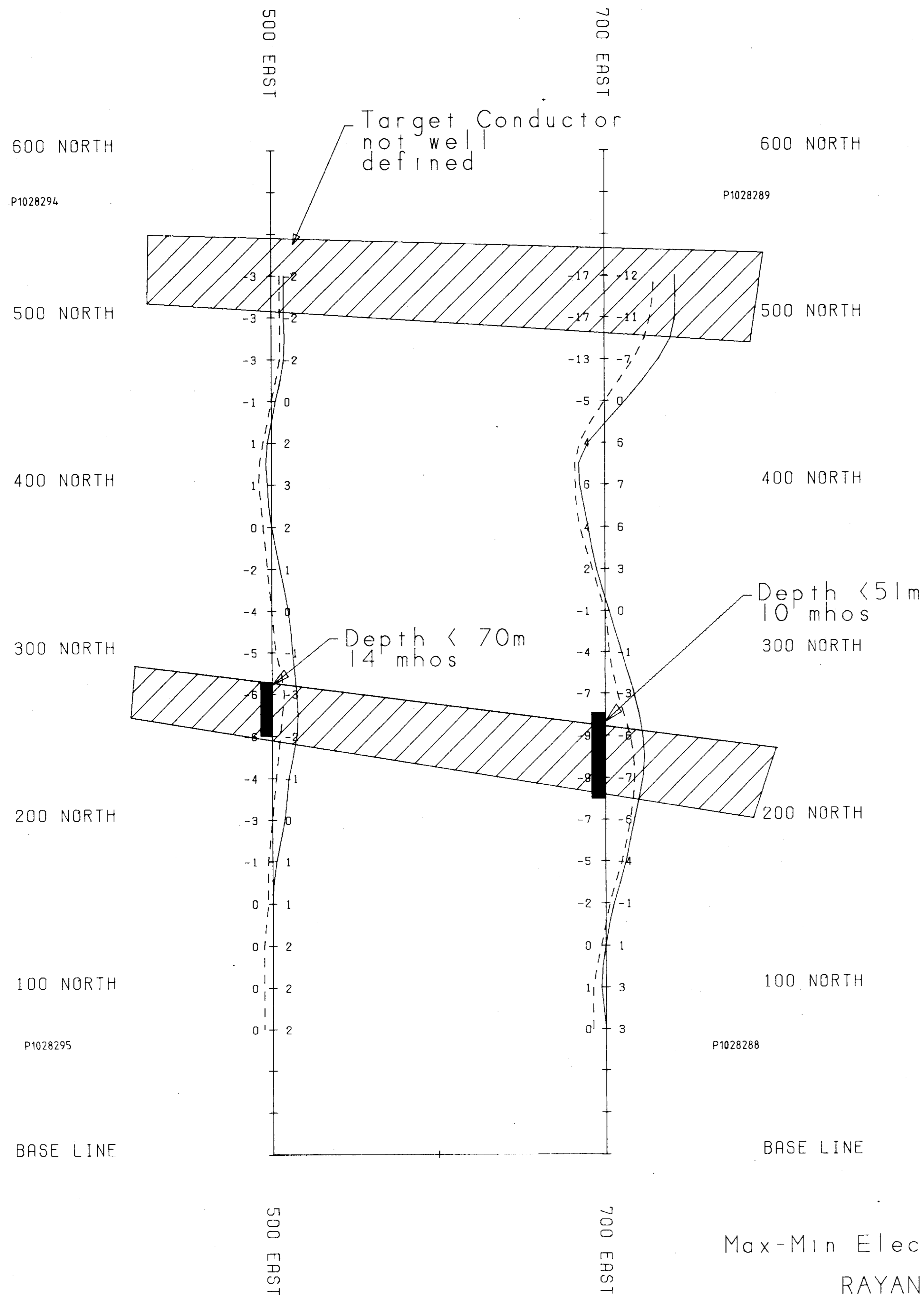
I, R.P. Bowen, P.Eng., of 142 Eric Crescent, Porcupine, Province of Ontario, certify as follows concerning my report on the Geary Township, Ontario property of David Meunier and dated September 1990.

- 1) I am a member in good standing of:
  - a) The Association of Professional Engineers of the Province of Ontario
  - b) The Canadian Institute of Mining and Metallurgy
  - c) The Society of Mining Engineers of the A.I.M.E.
  - d) The American Society of Photogrammetry and Remote Sensing
  
- 2) I am a graduate of Michigan Technological University, Houghton, Michigan with a B.S. degree in Geological Engineering obtained in 1970 and a B.S. degree in Engineering Administration obtained in 1971.
  
- 3) I am a graduate of Mc Gill University, Montreal, Quebec with a Diploma in Geological Sciences obtained in 1972 and a M.Sc. (Applied) in Minerals Exploration obtained in 1973.
  
- 4) I have been practising my profession in Canada and the United States for the past 20 years.
  
- 5) I have a 20% interest in the property herein reported of David Meunier.
  
- 6) The attached report is the product of:
  - a) Data listed in the references.
  - b) Assessment work files - Timmins Resident Geologist's Office and the Toronto Assessment Records Office.
  - c) Discussions with colleagues who have worked in the area.
  - d) My personal acquaintance with the Timmins geology and other properties in the area, some of which I have examined and worked on for other companies.
  - e) A personal visit to the property both from 25 to 30 November 1986 and 9 to 23 May 1988 and again on 12 September 1990.

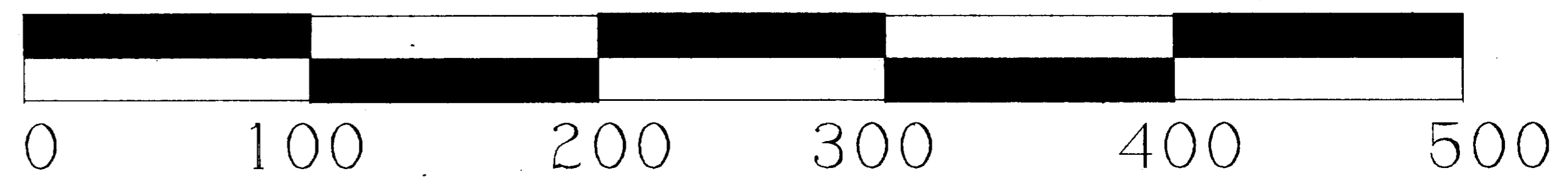
Dated this 20<sup>th</sup> day of  
November 1990

Timmins, Ontario

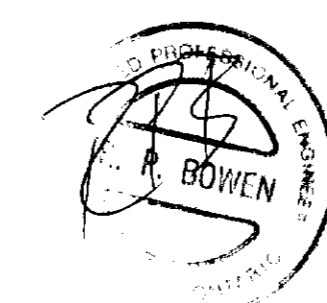




SCALE BAR  
feet



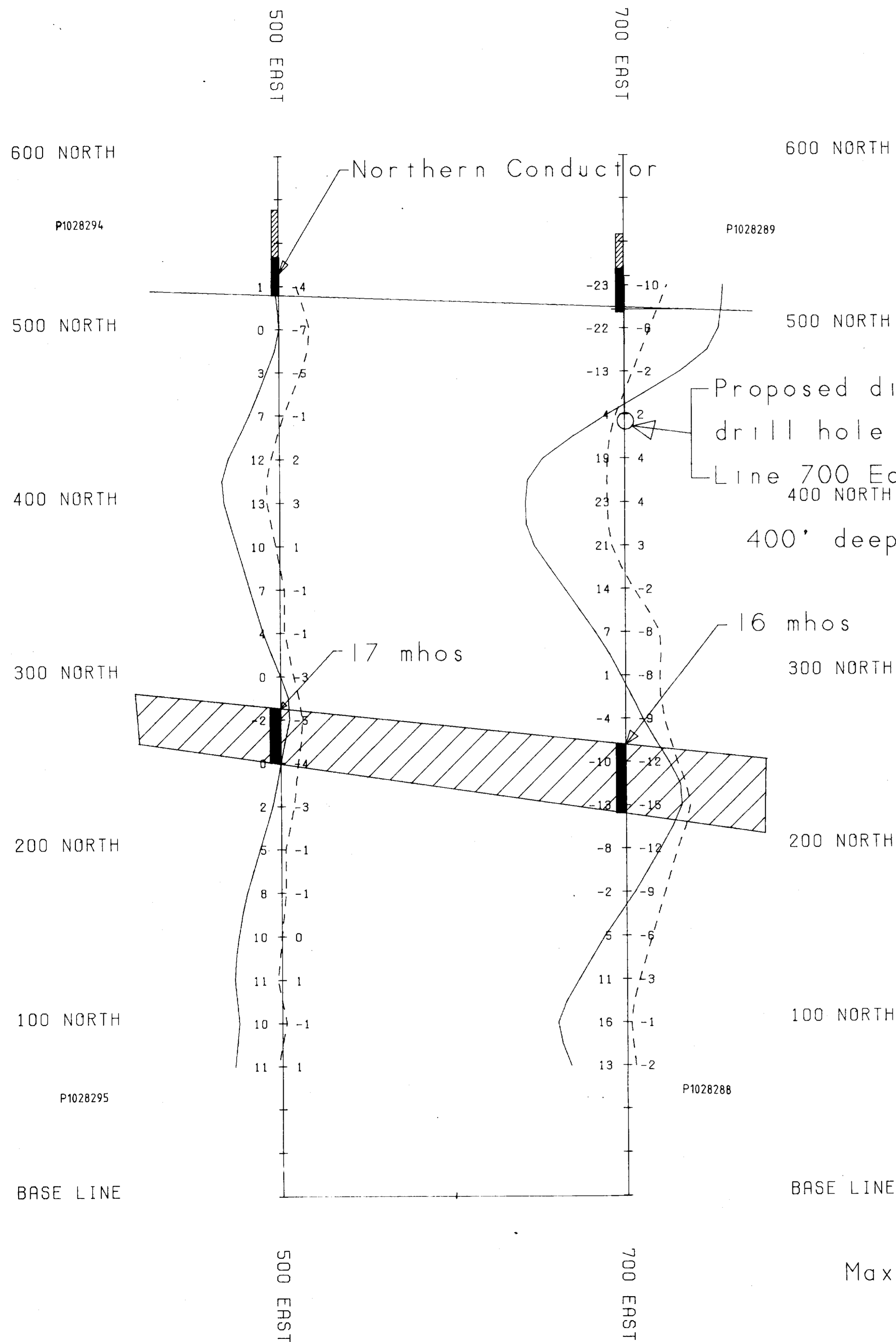
meters



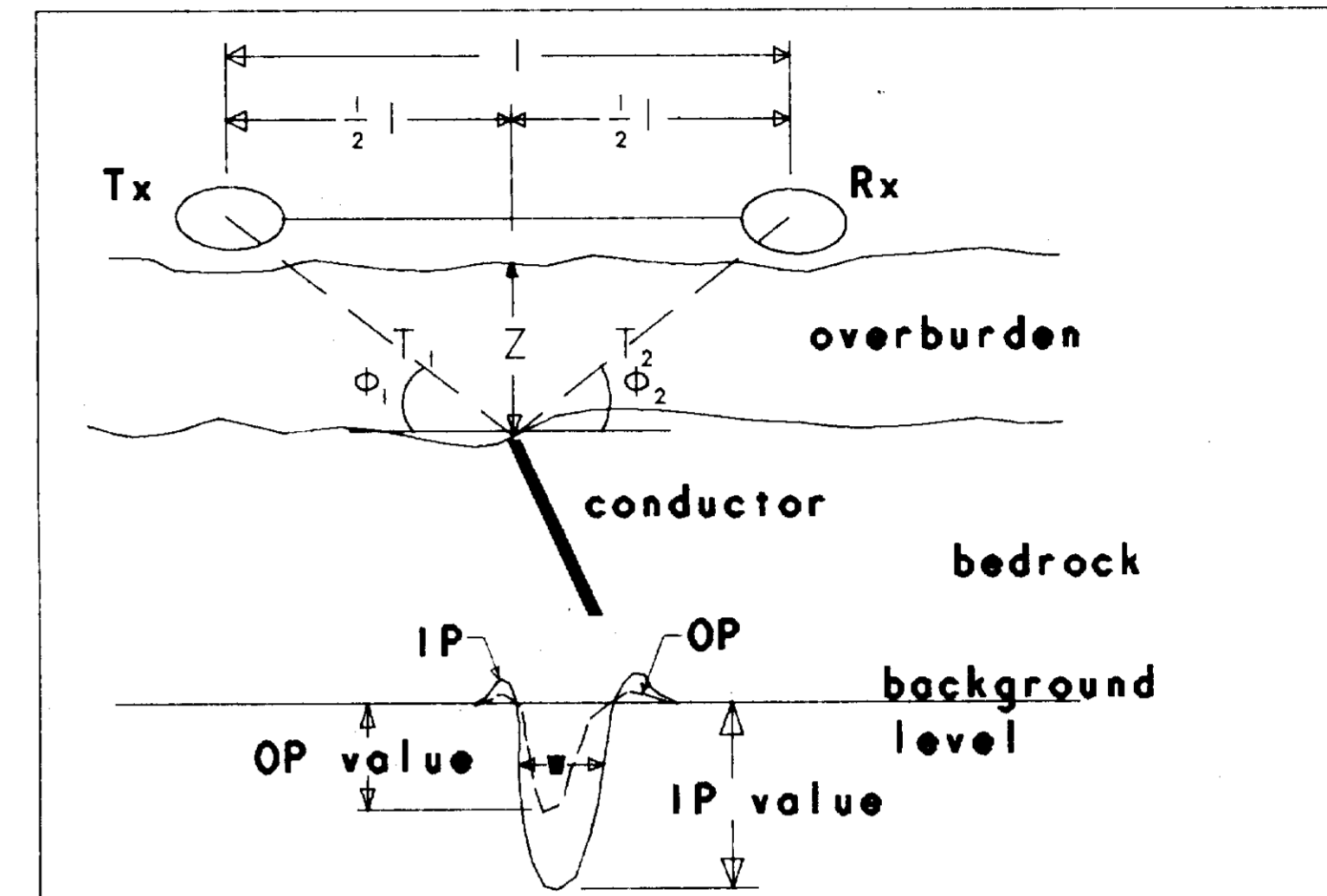
Max-Min Electromagnetic Survey by  
RAYAN EXPLORATION LTD.

R.P. BOWEN ENGINEERING INC.		
Client: DAVID J. MEUNIER GEARY TOWNSHIP PROPERTY		
Title: MAX-MIN EM SURVEY 444 Hz FREQUENCY 150m COIL SPACING		
DATE: AUG. 1990	SCALE: 1:1,500	N.T.S.: 42B
DRAWN BY: R.P.B.	JOB #: BG-0007-90-1	FIG. 2

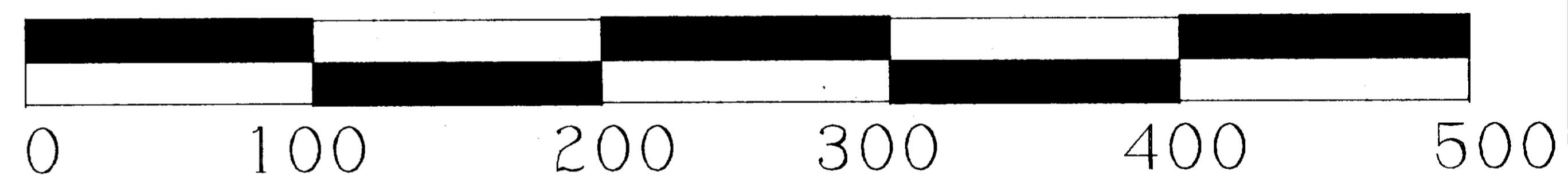




Proposed diamond  
drill hole  
Line 700 East/450 North  
400' deep @ -5°



SCALE BAR  
feet



meters



Max-Min Electromagnetic Survey by  
RAYAN EXPLORATION LTD.

R.P. BOWEN ENGINEERING INC.		
Client: DAVID J. MEUNIER GEARY TOWNSHIP PROPERTY		
Title: MAX-MIN EM SURVEY 1777 Hz FREQUENCY 150m COIL SPACING		
DATE: AUG. 1990	SCALE: 1:1,500	N.T.S.: 42B
DRAWN BY: R.P.B.	JOB #: BG-0007-90-1	FIG. 3

