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REPORT ON A  
MAGNETIC & ELECTROMAGNETIC SURVEY  
MOODY & GALNA TOWNSHIPS, ONTARIO  
ON BEHALF OF  
MISTANGO RIVER MINES, LIMITED

by

Robbert A. Bosschart, Ph. D., P. Eng.

VOL. I

Toronto, Ontario.

May 4th, 1965.

MAPS

MAGNETIC & ELECTROMAGNETIC SURVEY  
MOODY & GALNA TOWNSHIPS, ONTARIO  
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## SUMMARY

The present magnetic and electromagnetic survey has located a large number of conductors; some directly related to the magnetic pattern, some unrelated.

Diamond drilling during the survey has shown that the latter conductors are without exception graphitic sediments, whereas the only interesting sulphide mineralization has been found in the former type, which is otherwise also predominantly graphitic.

Several weaker conductors, correlating with zones of high magnetic intensity, may be indicative of serpentinization and possibly asbestos formation in the ultrabasic bodies. Since the base metal possibilities of the conductors seem to have been adequately assessed, it is recommended that any further drilling be aimed at testing the asbestos potential of these weaker conductors.

# HAROLD O. SEIGEL & ASSOCIATES, LIMITED

GEOPHYSICAL CONTRACTORS AND CONSULTANTS

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## REPORT ON A MAGNETIC AND ELECTROMAGNETIC SURVEY MOODY AND GALNA TOWNSHIPS, ONTARIO ON BEHALF OF MISTANGO RIVER MINES, LIMITED

### INTRODUCTION

Between June 1964 and April 1965, magnetic and electromagnetic surveys have been carried out on a property covering part of Moody and Galna Townships, Larder Lake Mining Division, Ontario.

The results of previous exploration work on the property, which included several stages of airborne and ground magnetic surveying, as well as a diamond drilling program to investigate the major magnetic features, have been summarized in a report by G. S. Willson entitled "Report on Area of Exploratory License No. 13,302, Larder Lake Mining Division, Ontario", dated July 2, 1963.

The geophysical investigation covered by the present report was started as an electromagnetic survey on selected portions of airborne magnetic anomalies No. 1, 4 and 6, as was recommended in a report by H. O. Seigel entitled "Study of Exploration Results, Mistango River Mines, Limited, Lake Abitibi - Timmins Area, Ontario", dated April 4th, 1964. The survey was subsequently extended to include magnetometer and electromagnetic coverage of anomaly No. 7.

In August 1964 additional information concerning the property, in the form of airborne electromagnetic results, became available to Mistango River Mines, Limited. The investigation program was modified accordingly; the work on grids 1 and 4 was discontinued and the magnetic and electromagnetic survey on grids 6 and 7 extended to include the major airborne conductors, which were mostly located outside the magnetically disturbed areas (see Key Map).

Traverse lines for the new grids were cut oriented approximately north (true) except in grid 7B, where they were oriented N12°W. Magnetometer and electromagnetic observations were taken at 100' intervals, and at intermediate stations in disturbed areas.

Measurements of the vertical component of the earth's magnetic field were made with a Sharpe MF-1 fluxgate magnetometer. Appropriate corrections were made for diurnal variations by tying back at intervals to base stations previously established.

The electromagnetic survey was carried out with solid-state three frequency Turam equipment (800, 400 and 200 c. p. s.). The primary field was established by means of large, closed loops laid out on the ground and energized by means of a solid-state inverter powered from a gasoline engine driven D. C. generator. The measuring system has a compensator bridge arrangement whereby the relative amplitudes and phases of the signals (vertical component) received at these coils may be measured. Lines are traversed outside the primary loop, at right angles to the long sides. The presence of subsurface conductors is normally indicated by an increase in amplitude gradient, peaking directly over the conductor and by a corresponding phase angle lag. Appropriate corrections are made to the observed amplitude ratios for the normal attenuation of the field with distance from the primary loop.

An operating frequency of 400 c. p. s. was employed throughout the present survey. In all, 133.9 miles of profile lines, base lines and tie lines were cut; 108.5 miles of profile measured with the magnetometer and 219.2 miles with the Turam method.

### TOPOGRAPHY, GEOLOGY AND MINERALIZATION

The topographic relief of the investigation area is moderate. The overburden consists of sands and clays and appears to have, except in the most eastern part of the area, considerable thickness. No outcrops have been encountered. Diamond drilling has shown the major magnetic relief to be due to large serpentized peridotite intrusives in meta-sediments and volcanics. Low nickel values were found throughout the ultrabasics and small amounts of asbestos fibre were encountered, mostly in the serpentized peridotites and dunites. Examination of an electromagnetic anomaly (horizontal loop) in the east portion of the property had revealed a graphitic shear with associated pyrrhotite and chalcopyrite.

### DISCUSSION OF RESULTS

#### A -- Magnetic Survey

The results of the supplementary magnetometer surveys are shown on Plates M1, M2 and M3 in the form of contour maps on a scale of 1" = 400'. Contour interval is 500 gammas.

Plate M-1

In the west portion of the area two grids, north and south of the initial grid respectively, have been added. The north grid shows a strong magnetic zone in the northwest corner which represents the south-eastern extension of airborne anomaly No. 5, which, as diamond drilling has shown, is due to bands of sedimentary iron formation. Otherwise this grid shows very little magnetic relief. The southern grid also is virtually undisturbed.

Plate M-2

In the central area the magnetic measurements have been extended southward to cover anomaly No. 7 and the area between No. 6 and No. 7. The results indicate the presence of a relatively narrow magnetic body of great strike extension, most likely an ultrabasic intrusive. Depths calculated from some of the magnetic anomalies are; 190' on line 124W, 200' on line 32W, 170' on line 104W.

Plate M-3

In the eastern portion of the property magnetic measurements have been added to cover anomaly No. 7 and an area north of the old grid 6. The east part of anomaly 7 shows another narrow magnetic band which closely resembles the one in the west part. The calculated depths are; 130' on line 32E, 150' on line 44E and 110' on line 80E.

Two relatively small anomalies occur in the area north of the main grid; which probably represent small ultrabasic intrusive bodies. The anomaly peaking on line 172E indicates a depth of 120'.

B -- Electromagnetic Survey

The results of the Turam survey are shown on Plates T1, T2 and T3 in the form of field strength ratio and phase difference profiles, on vertical scales of 1" = 40% and 1" = 20° respectively and a horizontal scale of 1" = 400'.

The relative amplitudes of field strength and phase distortions are a measure of the conductivity of the conducting bodies, i. e. good conductors are characterized by field strength distortion combined with relatively little phase shifting, whereas poor conductors affect the phase, rather than the strength of the resultant field.

For an accurate grading the resistivity/thickness (r/d) ratio of the individual conductors can be derived from the calculated in-phase

and out-of-phase components. These values are marked on the upper right side of the anomalies. The depth to the current axis can be determined from the shape of the distortion and is marked on the lower left side. The current axis normally is located 30-40 ft. within the body and the indicated depth should be regarded as the maximum depth to the upper surface of the conductor.

Some seventeen major conductor systems have been located on the property, which have been marked A - Q inclusive.

#### Plate T-1

A number of relatively strong, mostly banded, conductors of long strike extension and high conductivity (.5 r/d 2 ohmcm/m), marked M, N and O, occur in the north part of the grid. Apart from some weaker conductive bands, the background shows very little disturbance. The lack of magnetic correlation, the great strike length, the banding and the very high conductivity strongly suggest these conductors do represent graphitic sediments or shear zones.

Several conductors in the central part show a closer relation to the magnetic pattern. Systems D, F and G appear to follow the margins of the ultrabasic bodies. These conductive zones have been intersected by diamond drill holes Nos. 30, 33 and 34 respectively. All three holes encountered graphitic sediments with varying amounts of pyrite and in some instances pyrrhotite, in an environment of meta-sediments and volcanics.

Conductors E and H have not been tested, but they display the same characteristics as M, N, and O and are not likely to have base metal potential.

The southern grid shows a number of conductive bands (P and Q) with characteristics which strongly suggest conductive (graphitic) sediments. None of these conductors has magnetic expression.

Two weak conductors in the central part (east of F on lines 164W - 152W) coincide with magnetic highs. These anomalies may indicate zones of serpentization of the ultrabasic rocks.

#### Plate T-2

All major conductor systems in the central part of the property show a direct relationship with the magnetic pattern; the conductive formations tend to follow the outline of the peridotite masses. Conductors A, B, C, D and I have all been tested by diamond drilling.

Conductor A, which shows good conductivity over most of its strike length, has been drilled in two sections (D. D. H. 19D and 22D) and proved to be an approximately 7' wide mineralized zone at the contact between the peridotite intrusive and intermediate to basic volcanics. The mineralization consists mainly of pyrrhotite, with minor pyrite and traces of chalcosite.

Conductor B, which shows high conductivity (1 r/d 3 ohmcm/m), has been shown by drilling (D. D. H. #20C, #21C and #23C) to be due to graphite with small amounts of pyrite in a shear zone located at the peridotite contact in the western extremity (L4E) and in volcanics in the centre (L20E).

Zone C, a highly conductive (2 r/d 4 ohmcm/m) banded conductor, is intersected by drill holes #25 and 28 and caused by graphitic sediments with disseminated pyrite, in basic volcanics.

The eastern portion of conductor D, intersected by D. D. H. #32 is caused by graphite with minor pyrite in intermediate volcanics.

Conductor system I near Jim's Lake, which consists of a series of good conducting bands on the north flank of the narrow basic intrusive body causing airborne anomaly #7, and which has all the earmarks of banded graphitic formations, has been drilled in two sections, (D. D. H. #29 and #31). Both holes encountered a number of graphitic bands with minor amounts of pyrite, in intermediate volcanics.

Two weakly conductive zones, 25+00 south of the main base line between L64W and 48W and 30+00 south between L8W and L0, occur within areas of high magnetic intensity, and may therefore indicate serpentinization of the ultrabasic formation.

#### Plate T-3

The pattern of multiple bands and high conductivity continues in the eastern part of conductor system I. D. D. H. #24 intersects the same series of graphitic bands and volcanics.

Conductor J, in the extension of I and showing the same general relation with the magnetic pattern, is again a graphite zone in volcanics (D. D. H. #27).

Conductor system K forms an almost continuous banded zone of mostly high conductivity in the north part of the grid. L presents an intermittent parallel band. Conductors K1 and K2 have no direct magnetic expression, nor any indirect relation with the magnetic pattern



other than that they follow the general strike of the formations. The same applies to zone L2. The location of conductor L1, between two small magnetic bodies, lends it some interest. The conductor itself is rather weak and in no way different from those in the western extension.

### CONCLUSIONS AND RECOMMENDATIONS

The present survey has outlined a large number of conductors which, notwithstanding a cover thickness between 120' and 350', mostly give rise to relatively strong anomalies, due to the very good conductivity and generally large size of the conducting bodies. Most of the conductors have a distinctly banded character and they conform, without exception, to the strike of the formations, in so far as the latter is reflected in the magnetic pattern.

The conductors fall in two groups; one group having neither direct, nor indirect magnetic correlation, the second group displaying a strong affinity to the flanks of the magnetic (ultrabasic) formations. To the former group belong conductors E, H, K, L2, M, N, O, P and Q. Where these have been sampled they appear to represent graphitic sediments with minor amounts of sulphides, usually in the form of pyrite, in basic or intermediate volcanics. They do not appear to offer, at least within the presently investigated area, any economic interest.

Many conductors in the second group proved to be graphitic as well, but pyrrhotite is more frequently encountered, and the results are more encouraging. Conductive zone A, for instance, is mainly due to pyrrhotite mineralization and traces of chalcopyrite are present.

All conductors of the second type occurring in the surveyed area have been tested in one or more sections, with the exception of conductor L2. The latter is relatively weak and appears to form the eastern extension of a zone which shows no magnetic correlation elsewhere. The location of the conductor between the two small magnetic bodies may have no direct significance. Conductor L2 does not represent a prime drilling target.

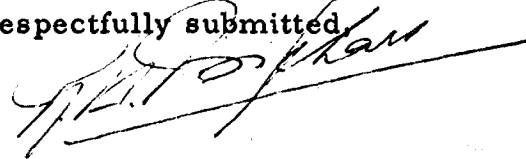
The base metal potential of the conductors found during the present survey appears to have been adequately assessed by means of the diamond drilling carried out thus far.

A number of weaker conductors of medium to poor conductivity, which coincide with zones of high magnetic intensity, may indicate serpentinization and possibly asbestos formation in the peridotites. Similar anomalies might also arise from overburden and the different types could easily be confused. Generally, however, the overburden seems to be

electrically neutral.

If further drilling on the property is planned, it is recommended that it be aimed at investigating the possibility of asbestos formation in these weakly conducting zones.

Respectfully submitted

A handwritten signature in cursive script, appearing to read "R. A. Bosschart", written over a horizontal line.

Toronto, Ontario.  
May 4th, 1965.

Robbert A. Bosschart, Ph. D., P. Eng.

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 19 D.

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Sept. 23/64

LATITUDE 20°00 S DATUM \_\_\_\_\_ COMPLETED Oct. 4/64

DEPARTURE 20°00 E. BEARING N 12° W ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP - 60° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-200	Overburden- Sand with some boulders								
				Corrected dip tests					
			200'	63½°		400'	61½°		
200-323 <sup>4</sup>	Intermediate volcanics. Medium greenish grey, aphonitic. Massive with occasional faint banding 45°.								
			600'	56½°		800'	50°		
	Traces very fine grained disseminated pyrite. Occasional thin quartz veinlets, 45-60° to axis								
			100'	46°					
323 <sup>4</sup> -500	Diorite - Medium greenish grey, fine to medium grained massive. somewhat chloritized. Sharp upper contact 45°. Occasional thin quartz veinlets 30-60°. Traces very fine grained disseminated pyrite and pyrrhotite.								

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# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 19 D  
 SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE 20°00 S DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE 20°00 E. BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
500-673	Diorite. As above. Rare thin irregular dark green serpentine veinlets. Rare pyrite blebs to 1/4" wide. Traces very fine grained pyrrhotite.								
673-725 <sup>5</sup>	Porphyritic diorite. Ground mass similar to above, but somewhat finer grained. 15-30% phenocrysts white feldspar to 1" long traces disseminated fine blebs pyrrhotite and pyrite.								
	Lower 5' gradual decrease in number of phenocrysts. Also 1/2 thin, elongated blebs								

NORTHERN MINER FORM 505

DRILLED BY \_\_\_\_\_

SIGNED \_\_\_\_\_

*R. J. Gray*

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 19 D

SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	pyrrhotite to 1/4" long and several very thin, irregular pyrrhotite filled fractures . Minor pyrite.								
<del>725-732</del> <sup>5</sup> <sub>8</sub>	Contact zone. Border phase of above diorite. Very fine grained to aphanitic. Dark greenish grey, massive. Occasional feldspar phenocrysts as above, decreasing in size and frequency downwards. Pyrrhotite 1-2% in small elongated blebs and fine veinlets. Traces pyrite.								

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# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 19 D  
 SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
						Cu	Ni	Zn	
732 <sup>8</sup> - 734 <sup>5</sup>	Contact zone - As above. Sulphides								
		604	732 <sup>8</sup>	734 <sup>5</sup>	1 <sup>7</sup> -				
	20-25%, predominantly pyrrhotite								
	with minor pyrite and traces chalcopyrite (?)								
	in masses to 2" wide and irregular veinlets to 1/4" wide.								
734 <sup>5</sup> - 735 <sup>0</sup>	Contact zone - As above, sulphides								
		605	734 <sup>5</sup>	736 <sup>2</sup>	1 <sup>7</sup> -				
	4-6% as above in irregular thin veinlets and small blebs								
735 <sup>0</sup> - 736 <sup>2</sup>	Chert. Aphanitic, dark grey with several dull								
	black bands to 1/8" wide at 70' to core axis. Pyrrhotite								
	5-7% and minor pyrite in irregular								
	veinlets and masses to 1/4" wide and one 1/8" band								
	parallel to bedding.								

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DRILLED BY Continental Diamond Drilling

SIGNED

E. Stary

*E. Stary*

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 19 D

SHEET NUMBER 5 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

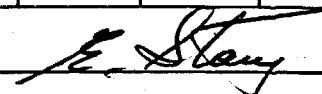
DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
						Cu.	Ni	Zn	
<sup>2</sup> 736-737 <sup>7</sup>	Chert with some graphite in lower 1 ft. Disseminated blebs and thin stringers sulphides 5-7%, chiefly pyrrhotite with minor pyrite.	606	736 <sup>2</sup>	738 <sup>2</sup>	2 <sup>0</sup>				
<sup>7</sup> 737-738 <sup>9</sup>	Quartzite. Light grey with darker bands to 1/8" wide at 60-65% to core axis. Pyrrhotite 5% with minor pyrite in thin veinlets parallel to banding.								
<sup>9</sup> 738-739 <sup>6</sup>	Contact zone - Fine grained phase of underlying peridotite. Dark greenish gray with 5% pyrrhotite and traces pyrite in thin irregular stringers	607	738 <sup>2</sup>	739 <sup>6</sup>	1 <sup>4</sup>				

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E. Stary



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 19 D

SHEET NUMBER 6 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
<sup>6</sup> 739-755	Peridotite - border phase, gradually increasing in grain size. Upper 4' with 1-2% pyroxenite and traces pyrite in thin irregular lenses less than 1/16" thick.								
755-900	Serpentinized peridotite. Dark green massive, medium grained moderately magnetic from 765 Occasional thin serpentine veinlets 30-60° to axis								
900-995	Serpentinized peridotite as above. Occasional thin serpentine veinlets 45-60°. Moderately magnetic								

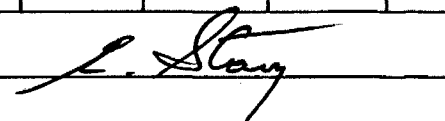
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**Continental Diamond Drilling**

SIGNED

**E. Stary**







SECTION N 20+00E

Scale 1" = 100'

20+00 S  
D.D.H. 19 D

→ N 12° W

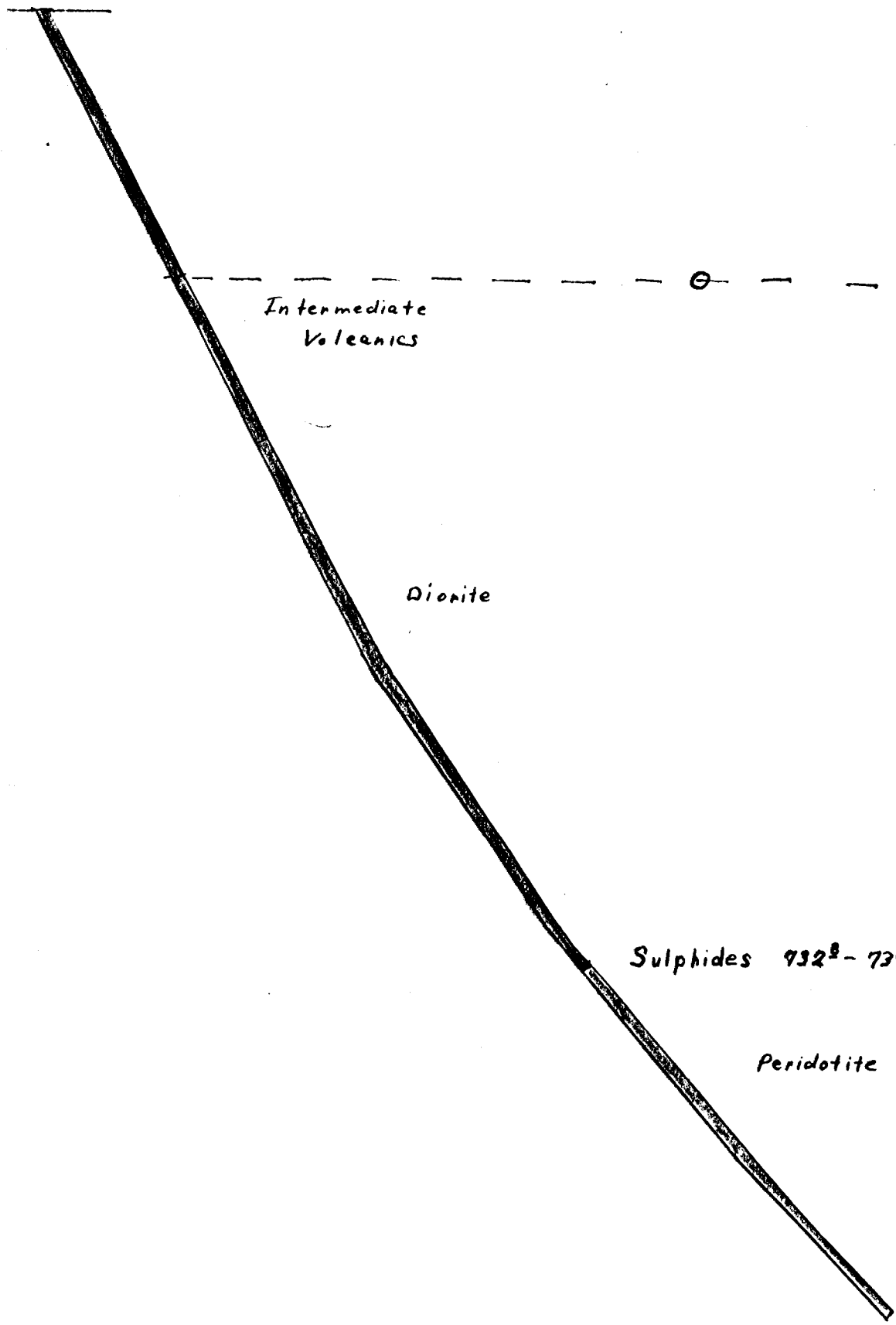
Intermediate  
Volcanics

Diorite

Sulphides 732<sup>B</sup> - 739<sup>L</sup>

Peridotite

R. Stary



# DIAMOND DRILL RECORD

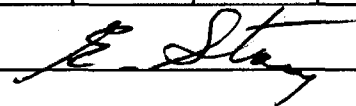
PROPERTY Mistango River Mines Limited HOLE No. 21 C  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Oct. 4, 1964  
 LATITUDE 21+50 N DATUM \_\_\_\_\_ COMPLETED Oct. 10, 1964.  
 DEPARTURE 4+00 E BEARING North ULTIMATE DEPTH 351  
 ELEVATION \_\_\_\_\_ DIP - 60 PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-172	Overburden - Sand								
172-323 <sup>6</sup>	Serpentinized Peridotite. Dark green, med. to coarse grained, massive. Abundant serpentine veinlets and fracture fillings to 1/2" wide. Strongly magnetic								
323 <sup>6</sup> -325	No core.								
325-340	Shear Zone. Pale gray silicious sheared rock. Schistosity 60-70° to core axis. Upper 3 ft. ground to mylonite.								
340-345	No core.								
345-348	Graphite schist. Badly broken and rag folded.								

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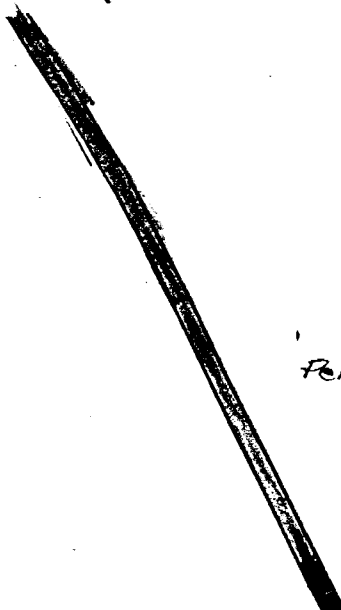
SECTION 4+00E

18+00 N

20+00

DDH  
RIC

22+00 N



Peridotite

Silicious Shear zone  
Graphitic Schist

Scale 1"=100'

E. Stary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 20 C  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Sept. 22, 1964  
 LATITUDE 19-00 N DATUM \_\_\_\_\_ COMPLETED Oct. 1, 1964  
 DEPARTURE 4-00 E BEARING North ULTIMATE DEPTH 1047  
 ELEVATION \_\_\_\_\_ DIP -60° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-141	Overburden-sand		Corrected	dip tests					
141-300	Serpentinized Peridotite dark green, medium grained massive strongly magnetic common thin serpentine veinlets to 1/4" wide at 20-45° to core axis common wavy hairline cryptite veinlets at 30-45°		300'	66°		500'	64°		
300-476	Serpentinized peridotite-similar to above. Common thin serpentine veinlets 30-60° Occ. hairline veinlets of cryptite at 30-45° lower 5' badly sheared and drag folded								

NORTHERN MINER FORM 505

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E. Stary

*E. Stary*

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 20 C  
 SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
476 <sup>5</sup> - 549	Silicified shear zone. Very fine grained, light grey sheared rock with common elongated quartz eyes and lenses <1/16" thick. Schistosity 60-65° Occasional traces small pyrite cubes.								
497 <sup>4</sup> - 500 <sup>3</sup>	Quartz vein with inclusions of wall rock to 1" wide.	608	497 <sup>4</sup>	500 <sup>3</sup>	3 <sup>9</sup>				
514 <sup>5</sup> - 519 <sup>1</sup>	Quartz vein with 35% inclusions of wall rock in masses to 3" wide.	609	514 <sup>5</sup>	519 <sup>1</sup>	4 <sup>6</sup>				
549-554	No core.								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

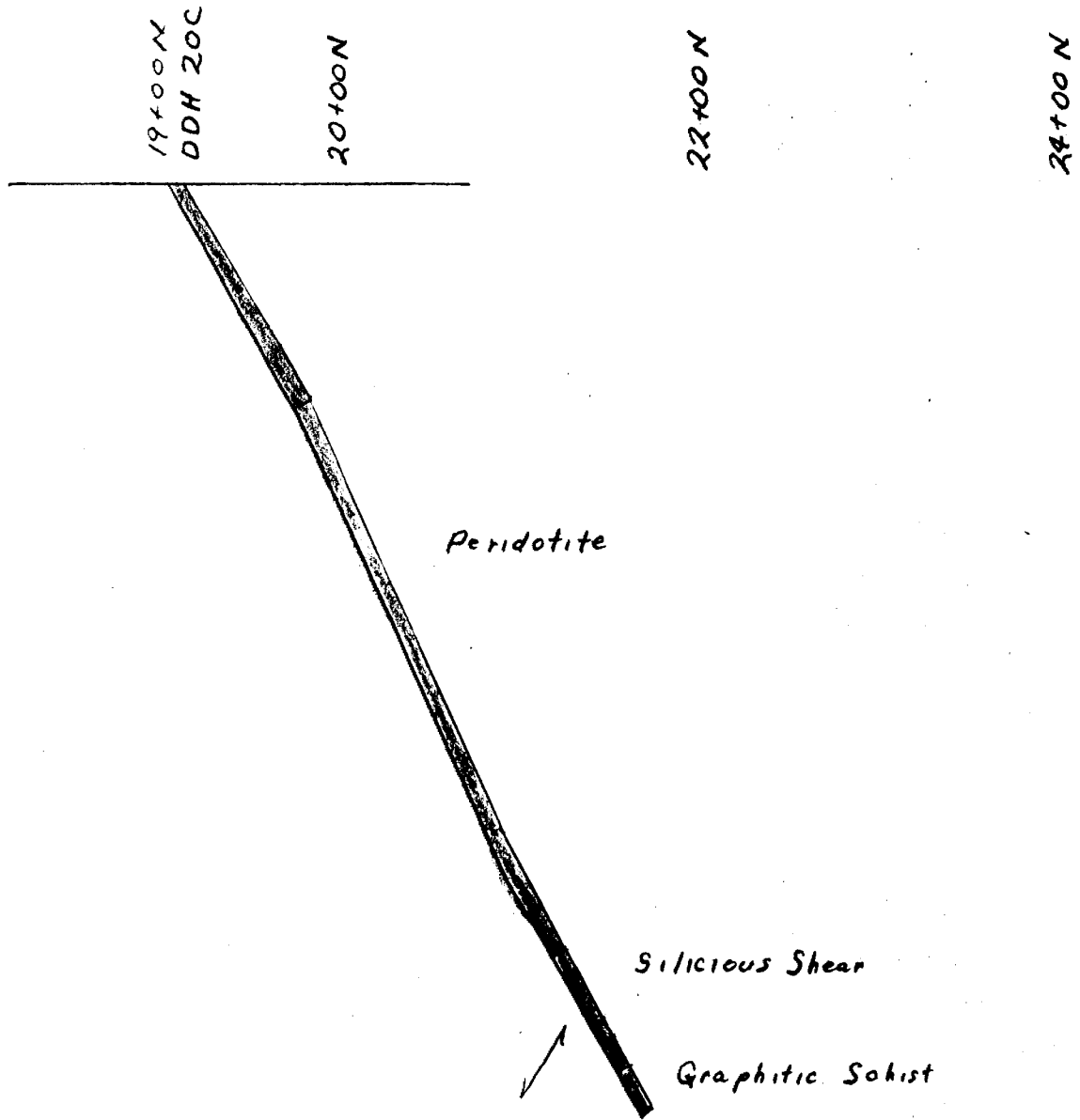
SIGNED \_\_\_\_\_

E. Stary *E. Stary*





SECTION 4+00 E



Scale 1"=100'

*R. Gray*

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 22 D  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Oct. 7, 1964.  
 LATITUDE 20400 S DATUM \_\_\_\_\_ COMPLETED Oct. 18, 1964  
 DEPARTURE 12400 E. BEARING North ULTIMATE DEPTH 706'  
 ELEVATION \_\_\_\_\_ DIP - 60° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-251	Overburden - Sand		Corrected dip		200'	- 65°	400'	- 61°	
251-375	Intermediate volcanics - Very fine grained. Medium greenish grey. faintly banded 45°. Occasional thin quartz stringers less than 1/2" thick at 30-45°. Traces very fine grained pyrite and pyrrhotite.				700'	- 57°			
	336' - Veinlet 1/2" wide of pyrite and pyrrhotite with traces galena at 20° to core axis.								
375-463	Intermediate to basic volcanic. Somewhat darker than above with common thin graphite coated								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

SIGNED \_\_\_\_\_

E. Stary *E. Stary*

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 22 D

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
465 <sup>0</sup> - 467 <sup>0</sup>	Andesite with graphite as above Sulphides as above 6-8% in thin irregular veinlets	611	465 <sup>0</sup>	467 <sup>0</sup>	2 <sup>0</sup>				
476 <sup>0</sup> - 468 <sup>2</sup>	Andesite as above with sulphides 4-5%	612	467 <sup>0</sup>	468 <sup>2</sup>	1 <sup>2</sup>				
468 <sup>2</sup> - 469 <sup>6</sup>	Andesite with 2-4% pyrrhotite and traces pyrite in thin fracture fillings.	613	468 <sup>2</sup>	469 <sup>6</sup>	1 <sup>4</sup>				
469 <sup>6</sup> - 495	Peridotite - Fine grained border phase. Dark greenish grey massive. Upper 5' with occasional thin pyrrhotite fracture filling.								

NORTHERN MINER FORM 505

DRILLED BY \_\_\_\_\_

SIGNED \_\_\_\_\_

E. Stary

*E. Stary*

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd., HOLE No. 22 D  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
495°-600	Serpentinized peridotite. Medium to coarse grained massive. Strongly magnetic. Rare thin serpentine veinlets less than 1/2" 30-45° with thin magnetic borders								
600-630	Serpentinized Peridotite. Somewhat finer grained than above. Strongly magnetic.								
630-706	Serpentinized peridotite, med. to coarse grained. Occasional thin serpentine veinlets 45-60°. Traces very fine grained, disseminated pyrrhotite. Magnetic								
706	End of hole								

NORTHERN MINER FORM 505

DRILLED BY \_\_\_\_\_

SIGNED \_\_\_\_\_

**E. Stary**

*E. Stary*

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 22 D

SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	Slips parallel to banding 45-60° with traces pyrrhotite and pyrite. 412-413 - Several very thin irregular fractures with pyrite and pyrrhotite. Lower 1' with 1-2% pyrrhotite and minor pyrite in thin irregular veinlets less than 1/16" wide.								
463 <sup>9</sup> -465 <sup>0</sup>	Andesite with graphite stringers drag folded. Sulphides 5% in irregular veinlets to 1/8" wide. Chiefly pyrrhotite with minor pyrite and chalcopyrite (?)	610	463 <sup>9</sup>	465	1 <sup>1</sup> / <sub>2</sub>				

NORTHERN MINER FORM 505

DRILLED BY \_\_\_\_\_

\_\_\_\_\_

SIGNED \_\_\_\_\_

E. Starv

*E. Starv*

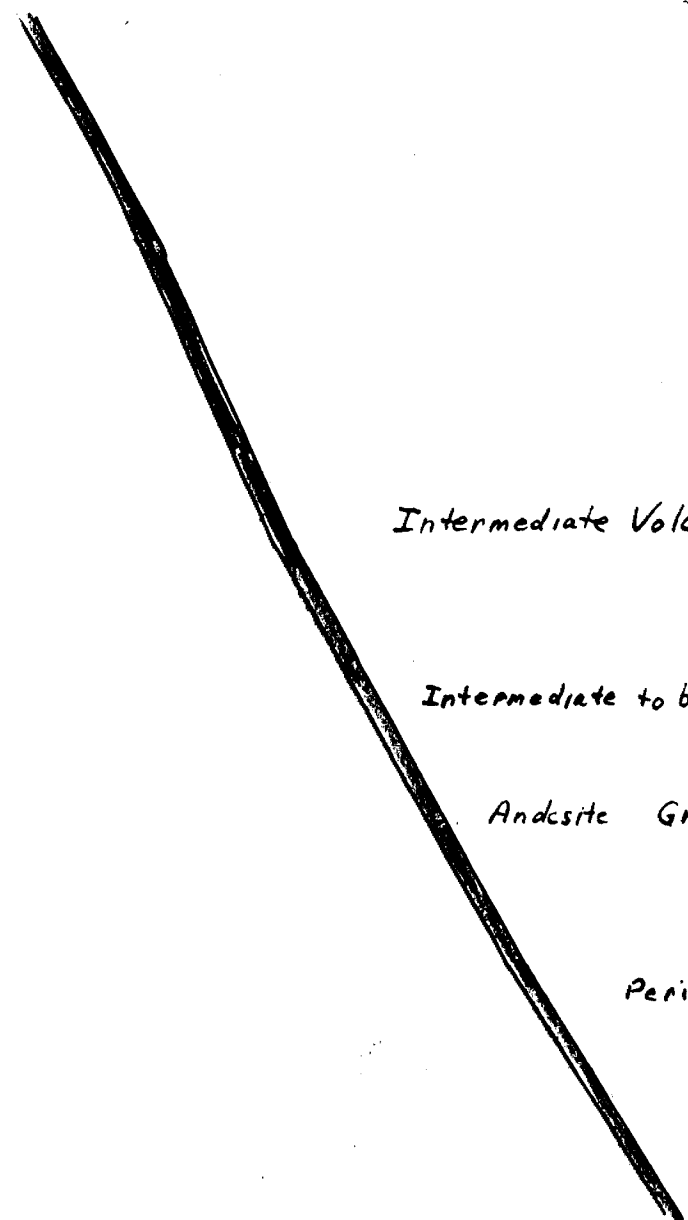
SECTION 12+00 E

22+00S

DPH 22D  
20+00S

18+00S

16+00S



Intermediate Volcanics

Intermediate to basic Volcanics

Andesite Graphite Sulphides 5% Po Tn Py Cpy?

Peridotite

Scale 1" = 100'  
E. Stary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 23 C  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Oct. 14, 1964.  
 LATITUDE 19400 N DATUM \_\_\_\_\_ COMPLETED Nov. 8, 1964.  
 DEPARTURE 20400 E BEARING North ULTIMATE DEPTH 1208  
 ELEVATION \_\_\_\_\_ DIP - 60° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-256	Overburden - Sand, boulders								
256-297	Intermediate volcanic - Fine grained, medium gray. Schistose with schistosity 35° to core axis. Occasional pyrite cubes to 1/8". Core badly broken with recovery of 65%		400'	61°	600'	44°			
			800'	37°	1000'	36°			
297-315	Graphite schist - Very soft and broken. Recovery 25%								
315-321	Intermediate Volcanic. Slightly darker than above. Badly sheared at 35° to axis.								
	317 <sup>S</sup> - 318 <sup>S</sup> - Pyrite 15% in grades less than 1/8"								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

SIGNED \_\_\_\_\_

E. Story

*E. Story*

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 23 C  
 SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
321-325	No core.								
325-375	Intermediate volcanic. Light to medium grey. Schistosity 40-45°. Badly broken. Core recovery 50%								
372 <sup>7</sup> -373 <sup>5</sup>	Quartz stringer with 1" containing 30% small pyrite blebs.								
375-402 <sup>2</sup>	Intermediate volcanic. Badly fractured and cut by quartz veinlets. Quartz 40% in veinlets to 6" wide with no regular pattern. Occasional pyrite cubes to 1/8". Core recovery 85%								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

SIGNED

E. Stary

*E. Stary*



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 23 C  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
402 <sup>5</sup> -500	Intermediate volcanic. Schistosity 45°. Traces fine grained disseminated pyrite.								
500-600	Intermediate volcanic. Schistosity increasing gradually to 55° to core axis. Traces fine grained pyrite.								
600-750	Intermediate volcanic. Similar to above. Schistosity increasing from 60° to 80-90°								
750-802	Intermediate volcanic. Similar to above. Schistosity 80-90°								
802-853	Brecciated shear zone. Shearing 80-90°. Traces fine grained pyrite								

NORTHERN MINER FORM 505

DRILLED BY \_\_\_\_\_

SIGNED \_\_\_\_\_

**J. Stary**

*J. Stary*



DDH 23C

# SECTION 20400E

Scale 1" = 100'

DDH 23C  
10-2-54

20100

20400E

24000

Intermediate Volcanic  
Graphite schist

Intermediate Volcanic

CYBERNET CONSULTING 800-451-5951 NO. 23008

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 24  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Oct. 28/64  
 LATITUDE 31°50' N DATUM Grid N. Anomaly 7 COMPLETED Nov. 2, 1964.  
 DEPARTURE 124°00' W BEARING N. 12° W ULTIMATE DEPTH 459'  
 ELEVATION \_\_\_\_\_ DIP - 55 PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-215	Overburden, Sand, boulders					Corrected dip tests 250'-	63°	450'-	
215-216	Graphite schist. Schistosity 20°. Core broken								
216-250	Basic Volcanic - Fine grained, dark grey, massive. Badly broken. Core recovery 30%								
250-317 <sup>3</sup>	Intermediate volcanic. Fine grained massive, light to medium grey. Common thin irregular fractures filled with very fine dark grey material. Minor disseminated fine grained pyrite.								
317-324 <sup>2 6</sup>	Graphitic schist. Pyrite 5% in thin veinlets parallel to schistosity 45°								

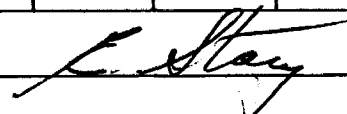
NORTHERN MINER FORM 505

DRILLED BY \_\_\_\_\_

**Continental Diamond Drilling**

SIGNED \_\_\_\_\_

**E. Stary**



# DIAMOND DRILL RECORD

PROPERTY Wistango River Mines Limited HOLE No. 24  
 SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
328 <sup>6</sup> -367 <sup>3</sup>	Intermediate volcanic - Similar to above. Schistosity 30°-45°								
352 <sup>6</sup> - 353 <sup>4</sup>	irregular quartz stringer with graphite inclusions and minor disseminated pyrite								
365-366	Pyrite 3-4% in thin quartz fracture fillings. A 1/8" wide graphite band with 1/8" pyrite veinlet.								
367 <sup>3</sup> -376	Graphite schist. Schistosity 0-20°. Pyrite 5-6% in thin bands parallel to schistosity	614	367 <sup>3</sup>	376	8 <sup>7</sup>				
376-386 <sup>6</sup>	Intermediate Volcanic - As above banding 0-20°.								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

SIGNED E. Stary

*E. Stary*

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 24  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
386 <sup>6</sup> -388	Graphite schist. Schistosity 30° Minor fine grained pyrite								
388-397 <sup>2</sup>	Intermediate Volcanic. Several thin pyrite filled fractures in bottom 1 ft.								
397 <sup>2</sup> -400	Graphite schist. Minor disseminated pyrite and one 1/4" massive veinlet parallel to schistosity 30°.								
400-419 <sup>2</sup>	Intermediate Volcanic as above Common thin darker bands parallel to schistosity 30-40°								
419 <sup>3</sup> -420 <sup>2</sup>	Graphite schist. Pyrite 15% in irregular band to 1/2" wide parallel to schistosity 30°	615	419 <sup>3</sup>	420 <sup>2</sup>					

NORTHERN MINER FORM 505

DRILLED BY \_\_\_\_\_

SIGNED \_\_\_\_\_

E. Stary *E. Stary*



SECTION 12 + 00 W  
GRID B ANOMALY 7  
SCALE 1" = 100'

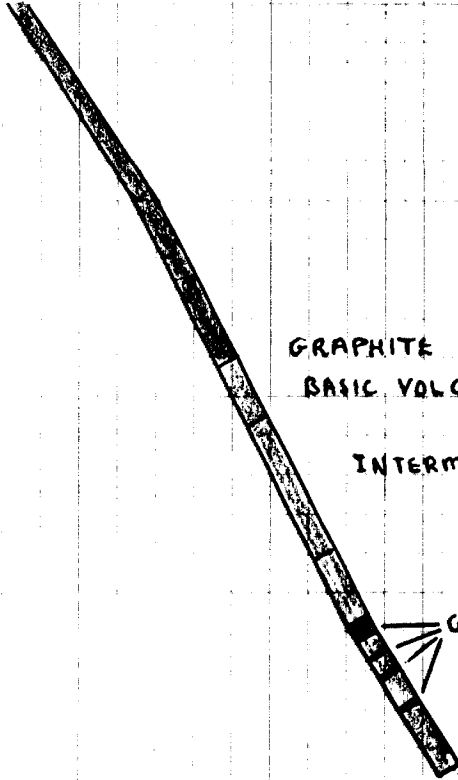
DDH 24

3 + 60 N

4 + 00 N

6 + 00 N

8 + 00 N



GRAPHITE  
BASIC VOLCANIC

INTERMEDIATE VOLCANIC

GRAPHITE  
INTERMEDIATE VOLCANIC

*B. Stary*



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 25  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Nov. 7, 1964.  
 LATITUDE 13400S DATUM \_\_\_\_\_ COMPLETED Nov. 23, 1964.  
 DEPARTURE 72400 W BEARING North ULTIMATE DEPTH 799  
 ELEVATION \_\_\_\_\_ DIP - 60° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-392	Overburden								
						Corrected dip tests	200'	66°	
392-470	Basic Volcanic - Fine grained		400'	62°			600'	62°	
	dark grey. Very faint lineation			790'	56°				
	55-60°. Core recovery 85%								
470-510	<sup>5</sup> Basic Volcanic. Somewhat lighter								
	colored than above. Very fine grained. Occasional								
	irregular graphite veinlets parallel								
	to schistosity 50-60°. Several								
	short waxy sections.								
	492° A. 2" graphite band with 1"								
	pyrite veinlet at 50° to core axis.								
	Core recovery 85%.								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

SIGNED E. Story

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 25  
 SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
						CU	NI	ZN
510 <sup>5</sup> -515 <sup>6</sup>	Graphite schist. Pyrite 6-8% in elongated blebs to 1/2" long and in thin veinlets parallel to schistosity 60°. Core recovery 40%.	616	510 <sup>5</sup>	515 <sup>6</sup>	2 <sup>0</sup>			
515 <sup>6</sup> -523 <sup>6</sup>	No core.							
523 <sup>6</sup> -526 <sup>6</sup>	Graphite schist. Badly broken Pyrite 5-6% in irregular blebs to 1/2" long and in veinlets less than 1/8" wide at 60° to core axis	617 618 619	523 <sup>6</sup>	531 <sup>2</sup>	4 <sup>2</sup> sludge sludge			
526 <sup>6</sup> -528 <sup>6</sup>	No core.							
528 <sup>6</sup> -531 <sup>2</sup>	Graphite schist. Disseminated pyrite 2-4% with 3 blebs 1/2" diameter. 530 <sup>6</sup> -530 <sup>6</sup> . No core.							

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling SIGNED E. Stary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 25

SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
531 <sup>2</sup> -592	Basic Volcanic. Medium grey, fine grained. Schistosity 55-60° Occasional quartz veinlet 30-45°.								
592-655	Gabbro. Medium grey, medium grained, massive. Gradational contacts.								
655-742	Basic volcanic - Schistosity 60° Lower 6 ft. - 5% graphite in thin band less than 1/2" wide. Traces disseminated pyrite								
742-745	Graphite schist. Schistosity 60° Pyrite 5% in irregular blebs to 1/2" wide and in thin veinlets.								

NORTHERN MINER FORM 505

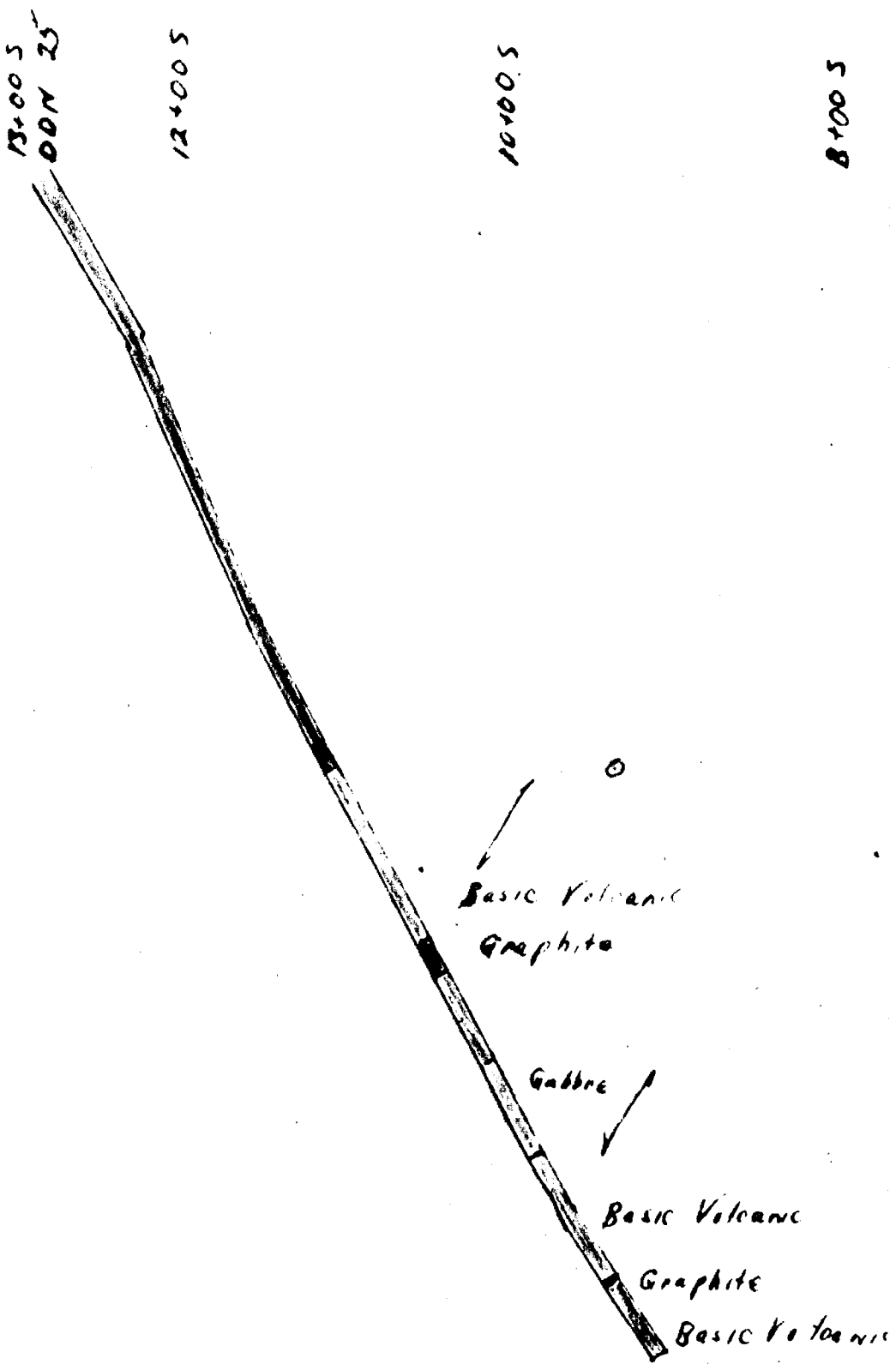
DRILLED BY \_\_\_\_\_

SIGNED \_\_\_\_\_

**E. Stary**



SECTION 72+00 N  
Scale 1" = 100'





# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 27

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Nov. 26

LATITUDE 5+30 N DATUM Grid A Anomaly 7 COMPLETED Dec. 7

DEPARTURE 56+00 E BEARING North ULTIMATE DEPTH 602

ELEVATION \_\_\_\_\_ DIP -60° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-215	Overburden								
215-343 <sup>S</sup>	Basic Volcanic. Medium grey, fine grained, faint banding 50-60° Common thin quartz veinlets 30-60° 335-338 shear zone, recrystallized with irregular quartz fracture fillings		200'	-53°		480'	-63½°		
343 <sup>S</sup> - 345 <sup>O</sup>	Milky Quartz stringer								
345 <sup>O</sup> - 347 <sup>O</sup>	No core								
347 <sup>O</sup> - 355 <sup>O</sup>	Basic to intermediate volcanic								
355 <sup>S</sup> - 356 <sup>O</sup>	Graphite- badly broken and ground core								
356 <sup>S</sup> - 357 <sup>1</sup>	No core								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

SIGNED E. Stary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 27

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
<sup>1</sup> / <sub>0</sub> 357 - 371	Basic to intermediate volcanic as above								
<sup>0</sup> / <sub>3</sub> 371 - 382	Volcanic as above Thin irregular quartz filled fractures and 2-4 % fine grained disseminated pyrite								
<sup>3</sup> / <sub>3</sub> 382 - 460	Basic Volcanic Occasional quartz veinlets to 4" wide somewhat folded 412- schistosity 30° 450 schistosity 50°								
460 - 490	Basic volcanic core body barren with 90 % recovery								

NORTHERN MINER FORM 505

**Continental Diamond Drilling**

DRILLED BY \_\_\_\_\_

SIGNED \_\_\_\_\_

**E. Stary**





SECTION 56+00E  
GRID A ANOMALY 7  
scale 1" = 100'

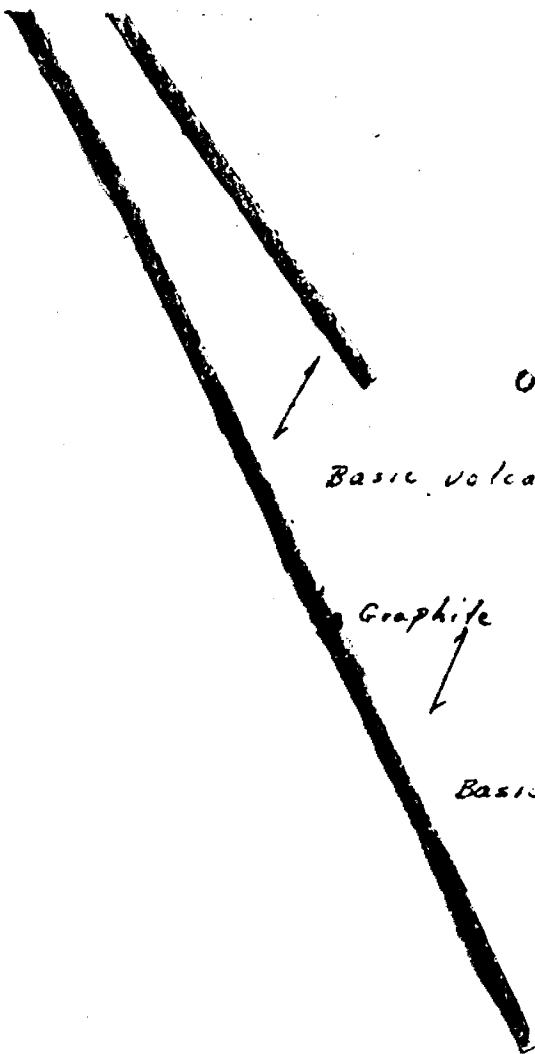
5400N

DDH #27

DDH #26

8700N

10400N



Basic Volcanic

Graphite

Basic Volcanic

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 28  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Nov. 24/64  
 LATITUDE 14100 S DATUM \_\_\_\_\_ COMPLETED Dec. 6/64  
 DEPARTURE 96100 W BEARING North ULTIMATE DEPTH 565  
 ELEVATION \_\_\_\_\_ DIP -55° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES				
0-285	Overburden		Corrected dip tests							
285-383	Basic Volcanic Fine grained. medium grey. Slightly schistose 60-70°, Rare thin quartz veinlets 20-45° Traces fine grained disseminated pyrite. Rusty zones with broken core at 294 <sup>5</sup> -298, 300 <sup>5</sup> -301 <sup>8</sup> , 355-359 301 <sup>8</sup> -305 - No core. 302 <sup>5</sup> -305 <sup>5</sup> - Badly broken core. 302 <sup>5</sup> -305 <sup>5</sup> 70°. Pyrite 3-4% fine grained, disseminated.		200°	59°	400	57°				
			565	53°						

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling SIGNED E. Stary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 28

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	<sup>3</sup> 383-388-- No core.								
	<sup>2</sup> 392-393 <sup>2</sup> . Pyrite 4-5'6. in cubes less than 1/8" wide 396'-400. No core								
	<sup>5</sup> 404-406 Basic volcanic- Badly broken								
	<sup>0</sup> 406-406 <sup>8</sup> Graphite								
	<sup>8</sup> 406-413 <sup>0</sup> No core.								
	<sup>0</sup> 411-414 <sup>0</sup> Basic volcanic - Yuggy								
	<sup>0</sup> 414-559 Basic volcanic. - Fine grained Faint banding 440'-80°								
	500 - 50° 525--40°								
	550 - 45°								
	559-568 Basic Volcanic. Coarser grained than above.								

NORTHERN MINER FORM 505

568- DRILLED BY End of hole.

SIGNED

E. Stary

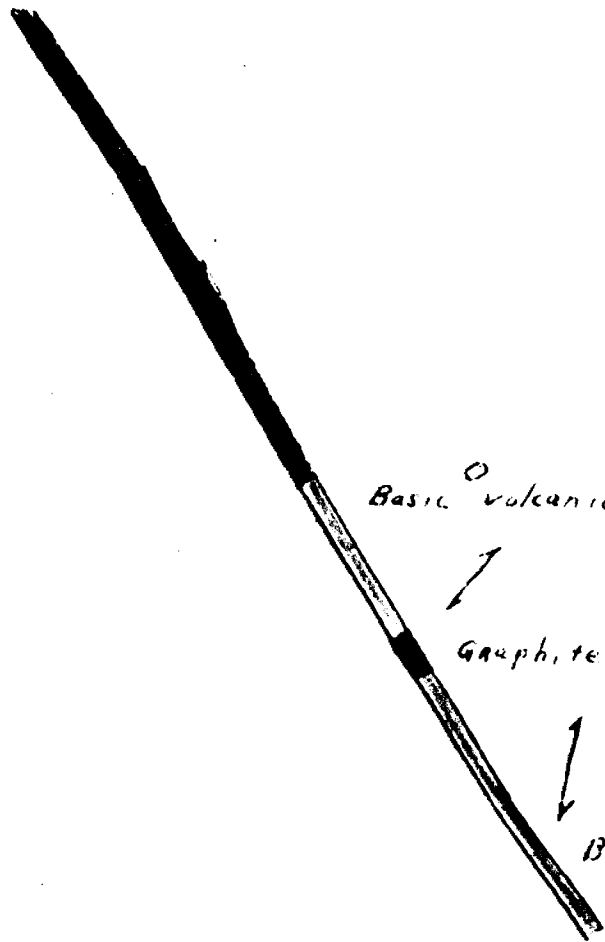
SECTION 96400W

Scale 1"=100'

144005  
DDH #28

124005

104005



Basic volcanic



Graphite



Basic Volcanic

# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LIMITED HOLE No. 29  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Dec. 8, 1964  
 LATITUDE 5 20 N DATUM Grid B-Anomaly 7 COMPLETED Jan. 8, 1965  
 DEPARTURE 56 00 W BEARING \_\_\_\_\_ ULTIMATE DEPTH 690  
 ELEVATION \_\_\_\_\_ DIP -55 PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES				
0-245	Overburden-Sand		Corrected Dip tests				200'	-61°		
245-333 <sup>8</sup>	Intermediate Volcanic-Fine grained, medium grey, massive Occasional faint banding 40° 285-295 Several irregular thin fractures with traces of hematite.	400	-61°		690	-55°				
333 <sup>8</sup> -340 <sup>8</sup>	Graphite schist. Pyrite 5-8 % in irregular blebbed bands to 1/8 " wide parallel to schistosity 40° 335 <sup>8</sup> 338 <sup>8</sup> and 338-339 <sup>8</sup> No core									

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

SIGNED \_\_\_\_\_

E. Story

# DIAMOND DRILL RECORD

PROPERTY MISSENGO RIVER MINES LIMITED HOLE No. 29  
 SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
340 <sup>6</sup> - 254 <sup>3</sup>	Intermediate volcanic-As above. Well banded 30-40°. Pyrite 2-4% in thin blebs and lenses parallel to banding.								
326 <sup>3</sup> - 373 <sup>0</sup>	Intermediate volcanic-As above								
373 <sup>0</sup> - 420	Andesite. Fine grain. Med. grey. Faint lamination 40°.								
420-485	Intermediate volcanic. Moderately schistose 40-45°								
485-490	As above. Pyrite 2-4% and euhedral crystals to 1/2" wide.								
490-500	Intermediate volcanic. Well banded with common very thin graphitic banding 45°. Pyrite 2-3% very finely disseminated								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling SIGNED E. Stary

# DIAMOND DRILL RECORD

PROPERTY MISTAND RIVER MINES LIMITED HOLE No. 29

SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
500-532 <sup>0</sup>	Volcanic Tuff-Well banded 45-55° Pyrite 1-2% in hairline veinlets parallel to banding 491-532- 85% core recovery								
532-546 <sup>0</sup>	Graphite. Pyrite 3% in fine irregular veinlets with several blebs to 1/2" wide. Core recovery 80%.								
546-575 <sup>0</sup>	Graphite. Drag folded with banding 25° 60%. Pyrite 3-5% in thin veinlets and blebs less than 1/2" wide with rare bleb to 1/2" wide core recovery 90%								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

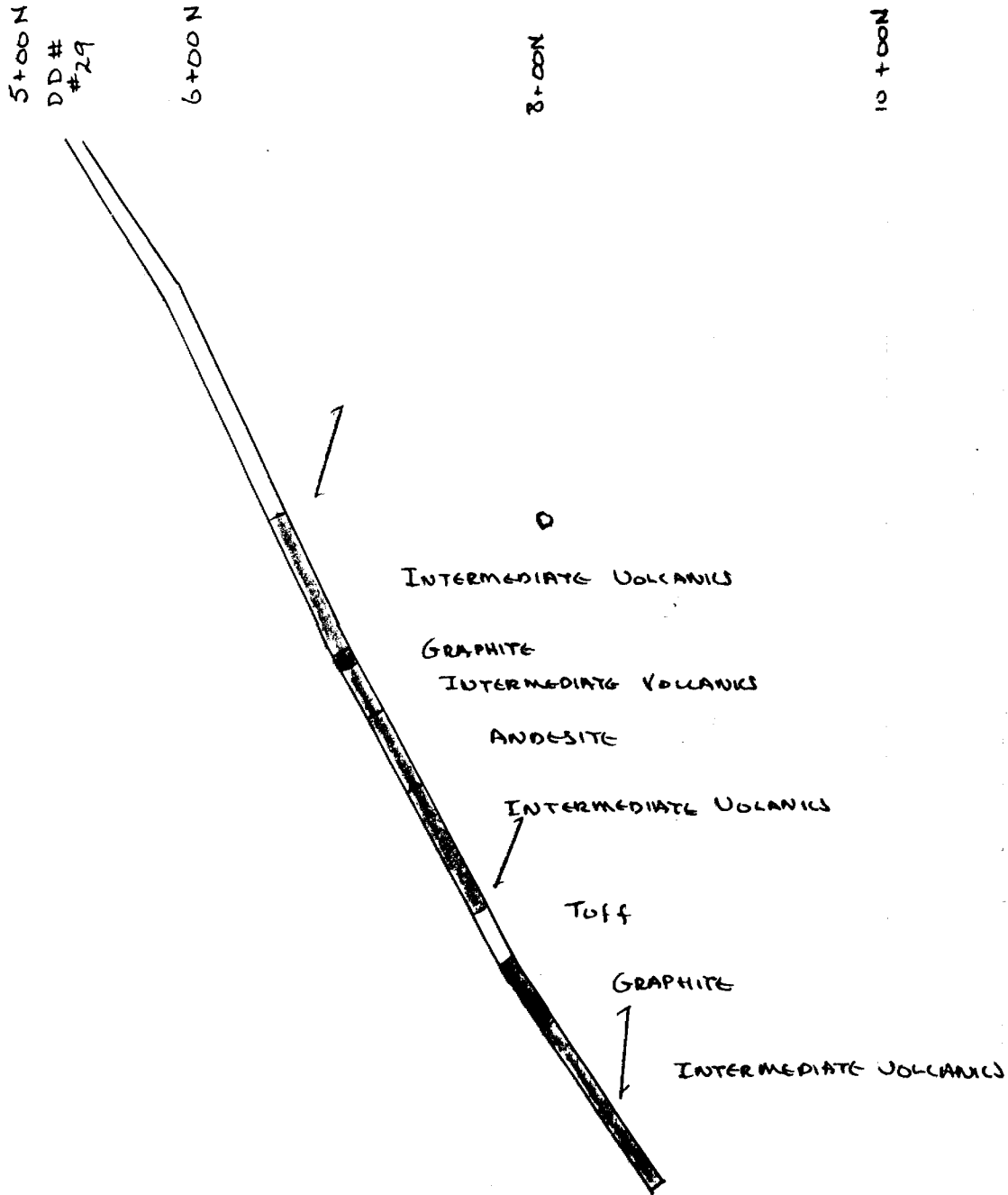
SIGNED

R. Gary





SECTION 56+00W  
GRID B - ANOMALY 7  
SCALE 1" = 100'



# DIAMOND DRILL RECORD

PROPERTY MISIONCO RIVER MINES LIMITED HOLE No. 30  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Dec 8, 1964  
 LATITUDE 8+00 S DATUM \_\_\_\_\_ COMPLETED Jan 13, 1965  
 DEPARTURE 124+00 W BEARING North ULTIMATE DEPTH 995  
 ELEVATION \_\_\_\_\_ DIP -55 PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-235	Overburden Sand		Corrected dip tests			290'	-61°		
235-325	Rhyolite. Fine grained, pale grey, faintly mottled. Massive 333 <sup>7</sup> -338 <sup>5</sup> , 344-347 <sup>7</sup>		400'	-58°	600'	-52½			
	Vaggy sections with broken core		800'	-46°	990'	-41°			
325-367	Diorite Medium grey, medium to coarse gradational contacts								
367-523 <sup>0</sup>	Intermediate volcanic, fine grained, Medium to dark grey. Traces faint banding 60-70°								
523 <sup>0</sup> -528 <sup>3</sup>	Graphite-Pyrite 3-4% in thin irregular veinlets								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

SIGNED \_\_\_\_\_

E. Stary

# DIAMOND DRILL RECORD

PROPERTY HISTANGO RIVER MINES LIMITED HOLE No. 30

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
529 <sup>3</sup> -617	Rhyolite. Very fine grained pale grey, faint lamination 70°. Occasional pyrite crystals to 1/4" wide								
617	<del>Reduced core from Ax to Ex due to loss of water</del>								
617-620	No core								
620-625	Rhyolite as above								
625-721	Acid to intermediate volcanic some what darker than above schistosity 60°								
721-741	Diorite-Medium grained, light mottled grey massive upper contact gradational lower contact 60°								

NORTHERN MINER FORM 505

DRILLED BY Continental Diamond Drilling

SIGNED \_\_\_\_\_

E. Stary

# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LIMITED HOLE No. 30  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
741-775	Basic to Intermediate volcanic dark to medium grey. Occasional small pyrite crystals.								
775-870 <sup>6</sup>	As above. Schistosity prominent at 78-80 <sup>6</sup>								
870 <sup>6</sup> -875 <sup>6</sup>	Angydaledial intermediate volcanic 15% carbonate nodules to 1/8" diameter								
875-880	Intermediate volcanic Some what talcose. Schistosity 78-80 Trace fine grained disseminated pyrite No core 880-880, 87 <sup>5</sup>								
	880, 910-913, 915-919								

NORTHERN MINER FORM 905

Continental Diamond Drilling

DRILLED BY \_\_\_\_\_

SIGNED \_\_\_\_\_

E. Stary



SECTION 124 + 00 W

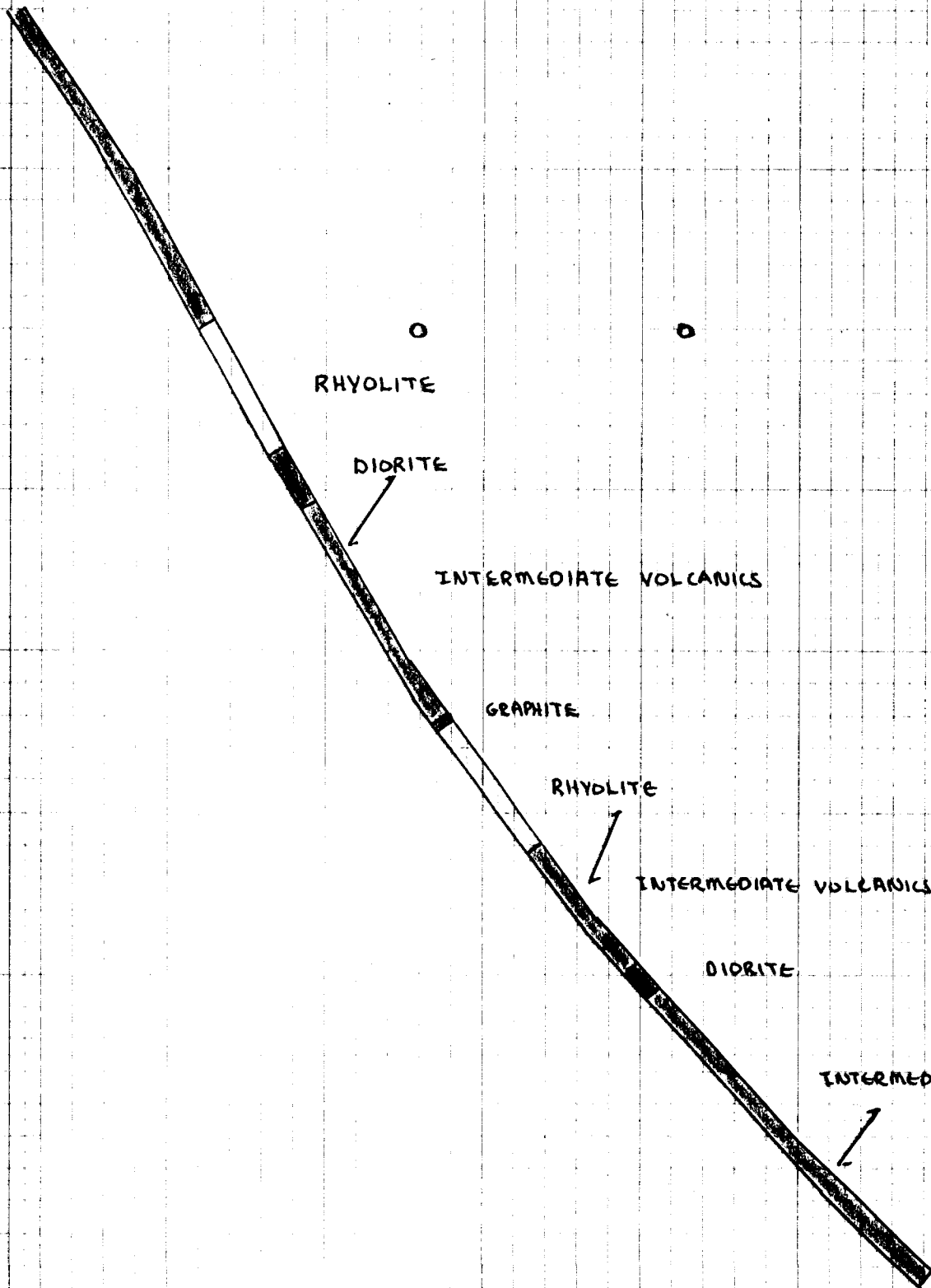
MAIN GRID  
SCALE 1" = 100'

8 + 00 S  
DDH # 30

6 + 00 S

4 + 00 S

2 + 00 S



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 31  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Jan. 15/65  
 LATITUDE 54°20'N DATUM Anomaly 7 Grid B COMPLETED Jan. 28/65  
 DEPARTURE 96400W BEARING N 12° W ULTIMATE DEPTH 703'  
 ELEVATION \_\_\_\_\_ DIP -55° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-340	Overburden - Sand								
340-400	Andesite - Fine grained, dark grey. Occasional faint banding 30-40°. Core badly broken. Recovery 99%								
			Corrected dip tests			200'	-62½°		
			340'	-65°		600'	-57½°		
400-460	Andesite - As above								
	410-417 - 7' core recovered								
	425-426 <sup>8</sup> - Graphite								
460-499 <sup>7</sup>	Intermediate volcanic - Medium to light grey, fine grained. Faint banding 40°								
499 <sup>3</sup> 540 <sup>3</sup>	Graphite - Schistosity 60° common thin carbonate veinlets								

NORTHERN MINER FORM 905 REV./54

DRILLED BY Continental Diamond Drilling SIGNED E. Story



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 31

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	<del>&lt;1/8" wide at 30-60° to axis</del>								
	<del>Pyrite 1-2% in fine veinlets</del>								
	<del>parallel to schistosity</del>								
<del>540-575</del> <sup>3</sup>	<del>Andesite - Fine grained, dark grey.</del>								
	<del>Occasional irregular fine carbonate veinlets.</del>								
	<del>Traces thin pyrite veinlets</del>								
<del>575-581</del> <sup>6</sup>	<del>Graphite - Schistosity 40°</del>								
	<del>Common hairline carbonate</del>								
	<del>veinlets parallel to schistosity</del>								
	<del>Pyrite 2-3% in very thin</del>								
	<del>veinlets along schistosity</del>								
<del>581-627</del> <sup>6</sup>	<del>Andesite - Schistosity 40°</del>								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling SIGNED I. Gary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 31

SHEET NUMBER 3 SECTION FROM ..... TO ..... STARTED .....

LATITUDE ..... DATUM ..... COMPLETED .....

DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....

ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
627 <sup>0</sup> -631 <sup>5</sup>	Graphite, Schistosity 40°  Pyrite 2-3% in thin bands parallel to schistosity								
631 <sup>5</sup> -680	Andesite, Well banded 30-40°								
680-783	Andesite, Somewhat lighter colored  than above and more massive. Traces fine grained disseminated pyrite crystals								
783	End of hole								

NORTHERN MINER FORM 505 REV./54

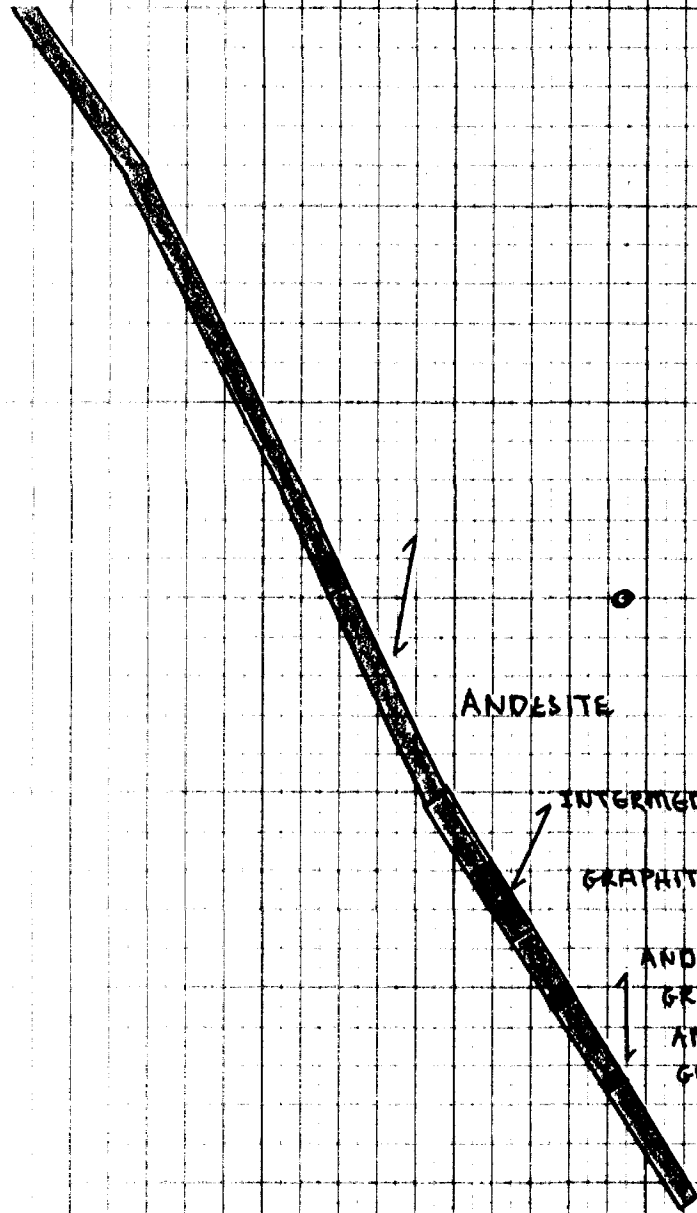
DRILLED BY Continental Diamond Drilling SIGNED E. Stary

SECTION 96+00W  
ANOMALY 7 GRID B  
SCALE 1"=100'

5+00N  
DDH  
#31

6+00N

8+00N



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 32  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Jan. 17/65  
 LATITUDE 1400 N DATUM Main Grid COMPLETED Feb. 5/65  
 DEPARTURE 96400W BEARING North ULTIMATE DEPTH 437'  
 ELEVATION \_\_\_\_\_ DIP -55 PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-320	Overburden - Sand, boulders		Corrected dip tests						
320-321 <sup>5</sup>	Basic to Intermediate volcanic		200'	-56 $\frac{1}{2}$ °	400'	54°			
	Med to dark grey, fine grained								
	Badly broken								
321-365 <sup>5</sup>	Intermediate Volcanic, Medium								
	grey, fine grained. Traces								
	fine grained disseminated								
	pyrite. Occasional banding 60°								
	320-365 - 50% core recovery								
365-413	Graphite. Well banded 70'								
	Pyrite 2-3% in thin bands								
	parallel to schistosity								
	Core recovery 30%								
413-425	Andesite. Schistosity 70°								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling SIGNED E. Stary



SECTION 96 + 00 W

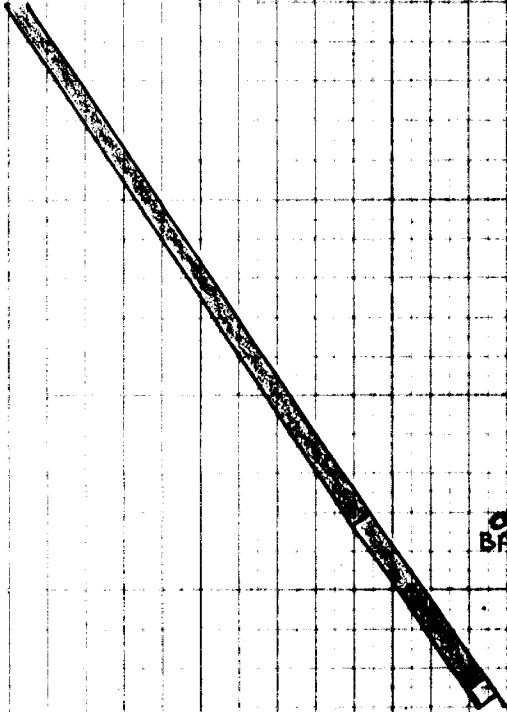
SCALE 1" = 100'

B.L.

DDH #32

2 + 00 N

4 + 00 N



BASIC TO INTERMEDIATE VOLCANICS

GRAPHITE  
ANDESITE  
RHYOLITE

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 33  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Feb. 9, 1965  
 LATITUDE 22°50 S DATUM Main Grid COMPLETED Feb. 28, 1965  
 DEPARTURE 168400 W BEARING NORTH ULTIMATE DEPTH 599  
 ELEVATION \_\_\_\_\_ DIP -60° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES				
0-245	Overburden - Sand, boulders									
			<b>Corrected Dip Tests</b>							
245-281	Andesite - Fine grained, dark grey. Faint lineation @ 45° to core axis		250'	61°	400'	57°				
			395'	50°						
281-313 <sup>3</sup>	Diorite - Medium grained, Medium grey, massive									
313 <sup>5</sup> -398	Andesite - As above. Moderately lineated @ 60°									
	420-426 - Brecciated and intruded with 60% quartz									
398-420 <sup>4</sup>	Basite - Medium grey, fine grained with occasional thin graphitic bands increasing in frequency with depth. Rare fine pyrite veinlets.									

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling SIGNED E. Stary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. \_\_\_\_\_

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
428 <sup>4</sup> -440	Graphite - Pyrite 2-4% in thin irregular veinlets and blebs parallel to banding @ 65°								
440-445	Bacite with 25% graphite stringers. Pyrite 1-2% disseminated, fine grained.								
442 <sup>5</sup> -443 <sup>6</sup>	Graphite with 10% pyrrhotite and minor pyrite in upper 4"								
445-500	Andesite - Medium to dark grey, fine grained. Occasional moderately fractured sections. Traces fine grained disseminated pyrite. Faint bedding 60-70°								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Conan SIGNED \_\_\_\_\_



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines HOLE No. 33  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
500-572	Andesite - As above. Occasional traces fine grained disseminated pyrite								
572-599	Diorite - Medium to fine grained, medium grey massive. Occasional traces very fine grained disseminated pyrrhotite and pyrite								
599	End of hole								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling SIGNED E. Stary

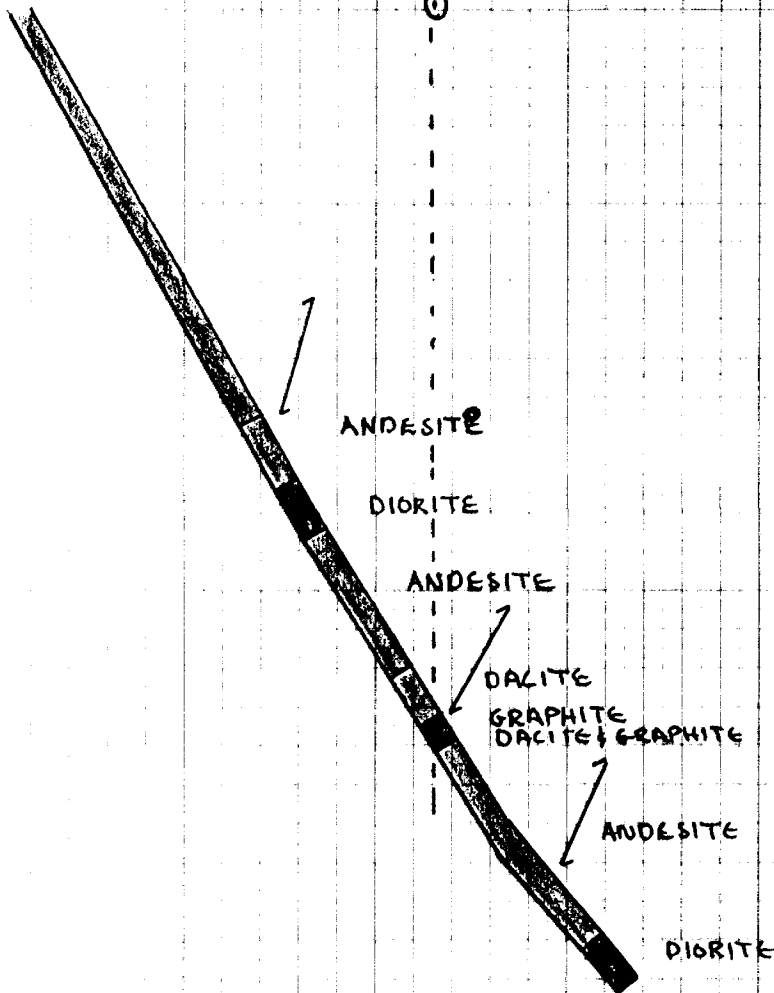
SECTION 168 + 00 W

SCALE 1" = 100'

DDH #33

20 + 00

18 + 00



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 34  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED March 9, 1965  
 LATITUDE 3400S DATUM Main Grid COMPLETED March 22, 1965  
 DEPARTURE 212400W BEARING North ULTIMATE DEPTH 593  
 ELEVATION \_\_\_\_\_ DIP -60 PROPOSED DEPTH 1000

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-192	Overburden								
192-227 <sup>3</sup>	Andesite - Fine grained, dark grey. Somewhat fractured common thin irregular carbonate veinlets. Rare hairline pyrite veinlets parallel to banding at 45-60°. Sharp lower contact at 50°		400'	63°		590'	61°		
227 <sup>3</sup> -295	Diorite Medium grey, medium grained, massive								
295-315	Diortite - Finer grained than above								
315-325	Gabbro. Med. to coarse grained massive. Pale greenish mottled grey.								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling

SIGNED \_\_\_\_\_

E. Stary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd HOLE No. 34  
 SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
325-340	Gabbro - Sheared with 10% quartz in thin bands parallel to shearing at 60-80°								
340-345	Basic Dyke, Dark gray, very fine grained, massive. Traces fine grained disseminated pyrite in upper 2 ft.								
345-360	Gabbro - Fine grained grading to medium grained. Traces fine grained disseminated pyrite and pyrrhotite								
360-450	Gabbro - Medium grained, massive traces fine grained disseminated pyrite.								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling SIGNED E. Stary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines - HOLE No 34  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
450-510	Gabbro - As above								
510-527	Biorite - Medium to fine grained. Dark gray, massive Traces fine grained disseminated. pyrite								
527-533	Siltstone - Somewhat sheared and silicified. Pyrite 3-5% fine grained disseminated and thin irregular veinlets and blebs.								
533-542	Graphitic Argillite with 5% pyrite in thin stringers parallel to schistosity 45°								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling SIGNED E. Stary

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 34  
 SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
542 <sup>8</sup> -558 <sup>2</sup>	Siltstone - Light grey, well banded at 40° Several irregular rusty seams 10-20° Pyrite 1-2% in thin platy layers parallel to schistosity								
558 <sup>2</sup> -577 <sup>6</sup>	Siltstone - More silicious than above and interbanded with graphitic argillite Pyrite 6-8% in irregular blebs and veinlets to 1/2" wide								
577 <sup>2</sup> - 585	Graphite - Soft, friable								
585-593	No core								
593	End of hole								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling SIGNED E. Stary

SECTION 212 + 00 W

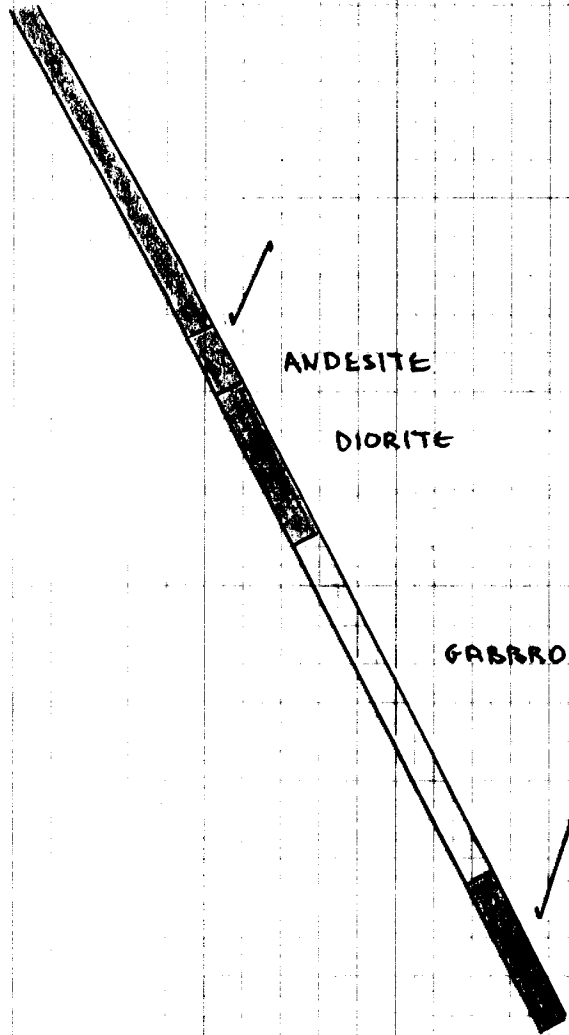
SCALE 1" = 100'

3 + 00 S  
DDH # 34

2 + 00 S

1 + 00 S

B.L.



ANDESITE

DIORITE

GABRO

DIORITE  
SILTSTONE  
GRAPHITIC  
SILTSTONE  
ARGILLITE  
GRAPHITE



42H025E0001 83.1-29 FOX

020

VOL. 2

REPORT ON  
A MAGNETOMETER SURVEY  
ANOMALY NO. 6  
MOODY-GALNA TOWNSHIPS, ONTARIO

for

MISTANGO RIVER MINES LIMITED

by

HUNTING SURVEY CORPORATION LIMITED

Toronto, Ontario

August, 1962.



## INTRODUCTION

A magnetometer traverse was carried out over the Aeromagnetic Anomaly No. 6 in Moody-Galna Townships in the vicinity of Iroquois Falls, Ontario. The survey was carried out by Hunting Survey Corporation Limited during the period July 24th. to 30th. , 1962.

The ground magnetometer survey was carried out with a Sharpe A-2 vertical component magnetometer having a sensitivity of 20.0 gammas per scale division. The traverse covered 13,200 feet and was orientated so as to cross the major peaks of Aeromagnetic Anomaly No. 6. The results are presented as a profile at a scale of 1 inch to 400 feet in the pocket of this report.

In addition to the magnetometer survey four seismic profiles were run over the magnetic highs using the FS-2 single channel equipment.

The traverse line was cut and picketed by a crew from Mistango River Mines Limited. The position of the line was established by cutting an east-west line from a known point on the north shore of Trail Lake and then turning the traverse line off from this line.

## INTERPRETATION

The traverse line was oriented so as to cut across the main magnetic 'highs' indicated on the Airborne Magnetometer Anomaly No. 6. The ground magnetometer survey carried out over this traverse line detected and localized two magnetic 'highs'.

The stronger of the two anomalies extends from 46+00S to 58+00S and reaches a high of 10,364 gammas at 56+00S. From the shape and appearance of the profile the anomaly appears to be caused by a banded formation. The bands are near vertical. Calculations carried out, neglecting the sharp peak at 56+00S, indicate that the body causing this anomaly is located at a depth of approximately 150 feet. The calculated magnetic susceptibility of the body is 0.012 c. g. s. units, corresponding to a magnetite content of about 5%. This susceptibility is the average for the causative body, whereas the individual bands may be two or three times this value. The average magnetite content of the whole banded formation is probably in the order of 5%.

The second anomaly located along the traverse line is similar in appearance but does not have as great an intensity as the other anomaly. This anomaly extends from 10+00S to 26+00S at a depth of approximately 140 feet and has a peak intensity of 7,908 gammas. The body causing the anomaly appears to be similar to that causing the other anomaly. The calculated magnetic susceptibility of this body is 0.01 c. g. s. units and the average magnetite content, approximately 4%. However, the average magnetite content may be much higher in the individual bands.

Four depth determinations were carried out along the traverse line. The depths to bedrock obtained varied between 110

feet and 140 feet.

In conclusion, on the basis of the limited information available the anomalies appear to be caused by a banded formation. If no remanent magnetism is assumed the calculated susceptibilities indicate an average of 4 to 5% magnetite by volume across the whole anomaly. As the formation is banded the percentage magnetite within the bands will, of course, be greater. Thus, these rocks are probably basic intrusives or very lean iron formations. The discovery of iron formation by the drilling of Anomaly No. 5 tends to add weight to these anomalies being caused by the same type of formation.

## RECOMMENDATIONS

Due to the lack of geological information in this area, the next step is to further investigate these anomalies, as only a limited amount of information can be obtained from one magnetic profile. No data is available of the size, shape and extent of the various anomalies. This further exploration can take place in the form of two types of investigation:

- (a) A magnetometer survey to cover the anomaly.
- (b) Drilling to find the cause of the anomaly.

The magnetometer survey would be used to locate and identify the various anomalies, and for obtaining a structural map of the area.

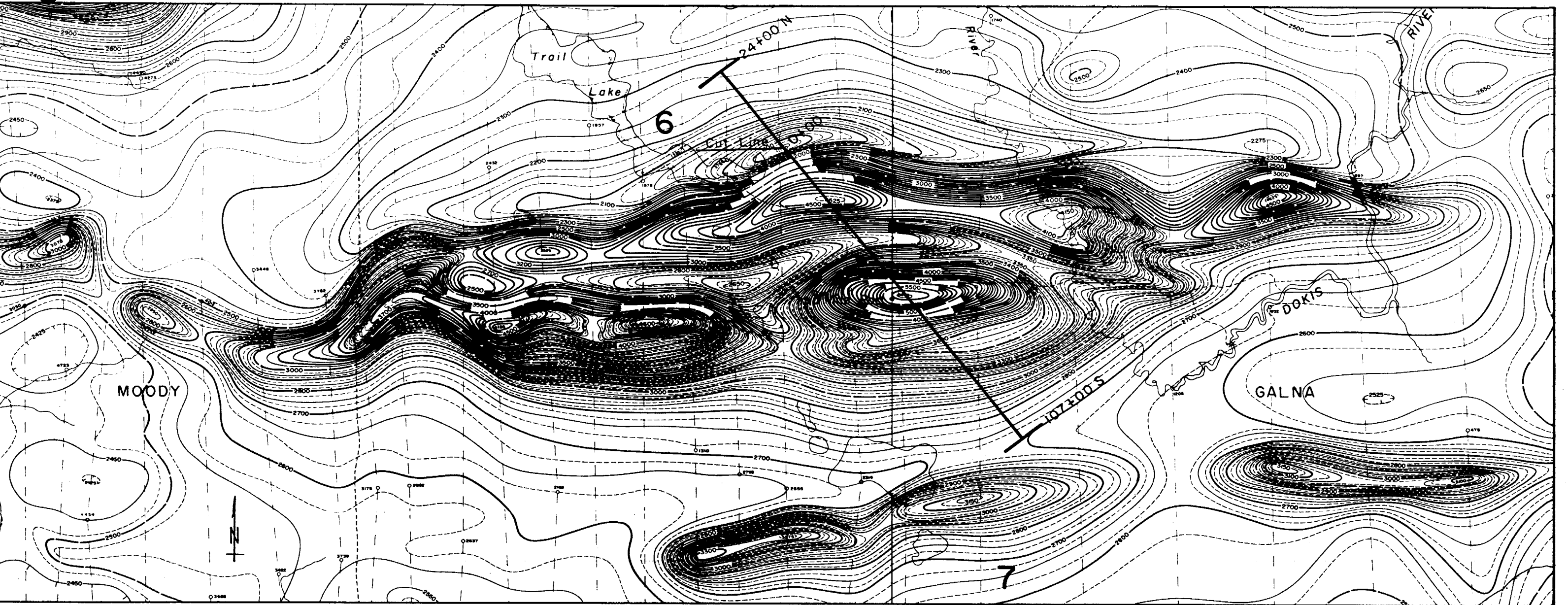
The drilling program is proposed to obtain information regarding the cause of the anomaly located on the transverse line. It is proposed that only one hole be drilled at this time to investigate one anomaly. If this drilling proves the formations to be favourable, then, of course, further drilling would be warranted. The proposed drill-hole is shown in cross-section on the accompanying map. Thus a total of 1,000 feet of drilling would

- (1) identify the cause of the anomaly
- (2) verify the nature of the bedrock between the bands
- (3) verify the nature of the country rock.

HUNTING SURVEY CORPORATION LIMITED

*E. B. Nicholls*

E. B. Nicholls,  
Geophysicist.



MISTANGO RIVER MINES LIMITED  
TRAIL LAKE, MOODY TOWNSHIP, ONTARIO  
LOCATION OF GROUND MAGNETOMETER PROFILE  
OVER  
ANOMALY No. 6

SCALE: 1 inch - 2640 feet

Hunting Survey Corporation Limited, Toronto, Canada - August, 1962.

*Prospecting G*



42H026E0001 83.1-29 FOX

030

*Geophysical & Geological Surveys*

HUNter 1-1539 Montreal  
Tel. VALley 4-3910 Val d'Or

3518 Vendome Ave.  
Montreal 28, Que.

REPORT ON

MAGNETOMETER SURVEY

ANOMALY NO. 6

MOODY-GALNA TOWNSHIPS, ONT.

FOR

MISTANGO RIVER MINES LTD.

Montreal, Que.

Jan. 11, 1963.



TABLE OF CONTENTS

	<u>Page</u>
Summary.....	1
Introduction.....	3
Property and Location.....	4
Geology.....	4
Magnetometer Survey Results and Interpretation.....	8
Anomaly "A".....	12
Anomalies "B" and "C".....	13
Anomaly "D".....	14
Anomalies "E" and "F".....	14
Anomaly "G".....	15
Anomaly "H".....	15
Anomaly "I".....	16
Anomaly "J".....	16
Anomaly "K".....	16
Survey Methods and Instrument Data.....	16
Conclusions and Recommendations.....	17

LIST OF MAPS

- Magnetometer Survey - East Half.....Pocket
- Magnetometer Survey - West Half.....Pocket

S U M M A R Y

A ground magnetometer survey was carried out along lines at 400 foot intervals over aeromagnetic anomaly No. 6 on the concession held by Mistango River Mines Ltd., west of Lake Abitibi in Ontario. The object of the survey was to outline in detail the anomalous area which appears to represent ultrabasic intrusives from two drill holes already put down on part of the anomaly.

No outcrops are available on the area surveyed and the geology is interpreted from the two drill holes, the regional geological data and the magnetic data from the survey. This indicates several discontinuous magnetic anomalies along a belt of over six miles in length and a width of approximately one mile. The anomalies are believed to be due to ultrabasic rocks which intrude the surrounding volcanic rocks. From the drill holes it is known that the ultrabasics contain some chrysotile asbestos fibre and also nickel-copper mineralization has been noted in the volcanics near the contact. Thus the belt of ultrabasic rocks provides a potential host for both asbestos and base metal deposits.

From the magnetic data there is evidence of considerable cross faulting in a general northerly direction and it is quite possible the various anomalies



are faulted sections of one main body of ultrabasic rocks. This shows a marked similarity to the geological environment found in the Munro-Beatty area where Canadian Johns-Manville Company have developed important asbestos deposits.

On the basis of the magnetic data there would appear to be a number of potential areas for asbestos fibre. The most significant is anomaly "A" as there appears to be considerable faulting and a zone of higher magnetic readings near the contact with the volcanics. All of this shows a marked similarity to conditions in the Munro area and several drill holes are recommended to investigate this zone. Drilling is also recommended for the other anomalies but actual location of holes will largely depend on information obtained from drilling "A" anomaly.

There would appear to be extensive areas along the contacts which are favorable for base metal mineralization. There is a lack of definite drill targets available in this regard and an electromagnetic survey using methods with maximum penetration is recommended for the contact zones. Such a survey should give a suitable response through the overburden of any economic sulphide body and thus provide targets for diamond drilling.

REPORT ON  
MAGNETOMETER SURVEY  
ANOMALY NO. 6  
MOODY-GALNA TOWNSHIPS, ONT.  
FOR  
MISTANGO RIVER MINES LTD.

INTRODUCTION

In July, 1962, a ground magnetometer traverse was carried out over the aeromagnetic anomaly No. 6 in Moody-Galna townships. The traverse was orientated to cross the major peaks of the aeromagnetic anomaly.

The ground traverse corroborated the airborne survey and, as a result, two exploratory drill holes, Nos. 5 and 6, were put down to determine the cause of the anomaly. The holes showed the anomaly to be caused by serpentinized ultra-basic rocks containing some asbestos fibre and also some sulphide mineralization near the contact with the volcanic rocks.

On the basis of this data, a complete ground magnetic survey was carried out over the aeromagnetic anomaly consisting of 134 miles of survey. The object of this survey was to outline the more favorable horizons for further drilling.

This magnetic survey was carried out during November and December and the following report describes the results obtained together with certain recommendations.

PROPERTY AND LOCATION

The ground is held under an exploratory license of occupation (No. 13,302) by Mistango River Mines Ltd. That portion of the ground covered by this survey lies in Galna and Moody townships of Ontario.

This is approximately 50 miles by air northeast of Timmins. A gravel road maintained by Abitibi Power and Paper Company connects Iroquois Falls to within 8 miles of the surveyed area and access can be made from here to the area by means of a tractor road.

GEOLOGY

The geology of the area is covered very well in a report by K.H. Cumming, dated November 13, 1962, and only the pertinent features concerning the area surveyed will be mentioned here.

There are very few outcrops in the area and apparently none visible on the ground surveyed so that the geology is largely interpreted from the magnetic surveys and the information from the diamond drill holes. Anomaly No. 6 has a definite east-west trend and the two

drill holes put down indicate that the anomaly is due to the presence of ultra-basic rocks. The holes showed the rocks to consist of coarse grained serpentized peridotite, greenish dunite, olivine pyroxenite and quartz diorite.

The holes do not give a complete cross-section but the most southerly hole (D.D.H. No. 5 - See map) passed through the volcanic-ultra basic intrusive contact. Hole No. 6 was collared some distance to the north to test another magnetic peak and it was in similar ultra-basic rocks throughout its entire length. There is a section of lower magnetic readings between these two ultra-basic sections suggesting that a possible band of volcanics exists here.

The serpentized peridotite contains both cross and slip fibre of good quality suggesting that it could be host to an economic deposit of asbestos. Magnetite occurs throughout as finely disseminated grains with the content being approximately 5% by volume.

The volcanic rocks encountered in drill hole No. 5 are light grey in color and contain large feldspar phenocrysts. Near the contact with the ultra-basic rocks the volcanics showed considerable alteration and a few short sections contained sulphides including pyrite,

pyrrhotite and minor chalcopyrite. Assaying showed the sulphides to contain nickel-copper values. This strongly suggests the possibility of base metal deposits near the contact as this is a favorable geological environment for nickel-copper deposition.

From the drill data it would appear that the ultra-basic rocks on the Mistango property are similar to those in the Munro-Beatty area to the south where deposits of chrysotile asbestos have been found. The deposits at the Munro Mine are almost entirely confined to serpentinized dunite. In their "A" and "B" orebodies, magnetite is abundant and is found in seams along the margins of the asbestos veins and in disseminated form within the limits of fibre mineralization.<sup>\*</sup> It should be pointed out, however, that relatively little magnetite accompanies some of the asbestos veins elsewhere.

It is difficult to outline the structure of the area without geological data but it is apparent that it is complex. The ultra-basic intrusives have an east-west trend while to the east the trend of the rocks is north-east and to the west aeromagnetic anomaly No. 5 indicates a northwest trend. This suggests a major folded structure

<sup>\*</sup>Ref.- Magnetic Prospecting Methods in Asbestos Exploration, by John H. Low, published in Methods and Case Histories in Mining Geophysics - C.I.M. & M. Congress Volume - 1957.

and there appear to be numerous faults within the surveyed area. The airborne survey showed one large anomaly but the ground survey indicates a number of separate anomalies which is probably due largely to faulting. This is typical of the intrusives in the Munro area where faults are found as strike faults and cross faults. It was found in geological mapping in conjunction with the magnetic survey in the vicinity of the Munro "A" orebody that irregularities in the magnetic contours almost invariably indicated the presence of cross faults trending from north to slightly east of north. Applying this observation to the present survey, it would appear that there are numerous cross faults on the property. The major faults are marked on the accompanying map and closer line spacing would no doubt show additional minor faults. Some of these faults indicate a horizontal displacement.

The strike faults are not so apparent from the magnetic data as they may more or less coincide with the contact of the intrusive. There does appear to be a possible major strike fault south of the intrusives in the volcanic rocks. This is marked by a slight magnetic high extending from line 84W at 32S to 104E at 4S. This may be accompanied by shearing or possibly a dyke follows a pre-existing fault, thus accounting for the slightly higher readings.

MAGNETOMETER SURVEY RESULTS AND INTERPRETATION

The magnetometer survey was carried out over the network of lines at 400 foot intervals that covered aeromagnetic anomaly No. 6. The results of the survey are shown on the accompanying maps on a scale of 400 feet to the inch. Due to the magnitude of the survey, the results are shown on two separate maps covering the east and west sections of the surveyed area.

A study of the maps shows a number of well defined magnetic anomalies trending in a general east-west direction. These anomalies cover a length of over six miles and have been lettered A, B, C, etc. for reference purposes.

From the data obtained from drill holes 5 and 6, it seems probable that the anomalies are all caused by ultra-basic rocks of a similar type to those of the Munro area. Magnetic surveys were found very useful in the exploration for the deposits in the Munro area and thus it seems only logical to apply data from their interpretation to the present survey. The following features were noted in their interpretation.<sup>x</sup>

<sup>x</sup>"Magnetic Prospecting Methods in Asbestos Exploration" - by John H. Low.

"Magnetic Prospecting for Asbestos Deposits" - by H.K. Conn. published in Case Histories - C.I.M. & M. Congress Volume, 1957.

(a) All rocks except the serpentine and younger diabase were relatively non-magnetic and thus the geological contacts between the ultra-basic bodies and surrounding formations could be detected.

(b) In some cases, location of geological contacts within the ultra-basic body between such rock types as serpentized peridotite, serpentized dunite, pyroxenite and acidic dykes could be determined.

(c) Location of cross-faulting by irregularities in the magnetic contours.

(d) Location of strike faults and shear zones within the ultrabasic. These structures may cause local lenslike magnetic anomalies.

(e) Generalized delineation of zones of talc-carbonate rock or carbonatized peridotite. Magnetite is scarce or absent in these altered zones and they are characterized by relatively low anomalies.

(f) Location of structurally favourable zones for the formation of asbestos deposits. In the case of the "A" orebody, the presence of the magnetite associated with the asbestos caused a high anomaly. However, other barren serpentine in the same area also gave high anomalies.

It was also observed that favourable areas for



asbestos were characterized by the presence of a major cross fault accompanied by minor faults.

An examination of the accompanying maps shows the following noticeable features based on the magnetic interpretation.

The contact of the ultrabasic sills with the volcanic rocks to the south can be determined with reasonable accuracy. There is not a sharp drop-off in the readings as there is always an effect for some distance past the actual cause of the anomaly. Drill hole No. 5 (See map) was collared in volcanics and the readings drop off gradationally as we get further away from the intrusive. On the basis of this hole, it would appear that the 3,000 gamma contour approximates the volcanic contact.

It will be noted that the readings generally south of the intrusive volcanic contact are in the vicinity of 700 to 800 gammas while those to the north are about 200 gammas. This could be due to the presence of different rock types on either side of the ultra-basic bodies or it may be due to the attitude of the intrusives which appear to generally dip to the south.

The magnetic data appears to indicate a number of cross-faults and the major ones are shown on the

accompanying maps. It is possible that the lower readings obtained between the anomalies such as those between "A" and "B" anomalies, may be due to extensive alteration in the ultrabasic body in which case there would be one continuous intrusive body. However, it seems more likely that the underlying rocks here are volcanics although there may be minor small bodies of ultrabasic rocks. A strong strike fault is also suggested to the south of the intrusives, as mentioned earlier in the report.

Drill hole 5 showed sulphide mineralization with nickel-copper values in the volcanic rocks near the contact with the ultrabasic rocks. This is a natural geological environment for nickel-copper deposits and thus the contact zones should be regarded as a favorable horizon for this sulphide mineralization. It can be seen that there is a distinct zone of lower readings between "C" and "D" anomalies extending from about line 40E to line 132W and this no doubt represents another rock type, probably volcanics. This would then be a very potential area for base metal mineralization which warrants some investigation.

The above is a generalized interpretation of the survey but the following paragraphs will give a more detailed description of the individual anomalies in an effort to outline zones of possible asbestos fibre or

sulphide mineralization based on the presence of faults and the magnetic anomalies.

ANOMALY "A"

Structurally and magnetically, this anomaly appears to be of the greatest interest as there appears to be some intense folding or faulting and accompanying alteration. It is situated towards the east end of the area surveyed and the main body has a length of about 2,600 feet and a maximum width of 1,000 feet. It appears to taper out and extend for another 1,500 feet to the east and west, giving a total strike length of over one mile. On the basis of the previous drilling, it seems likely that the anomaly is caused by ultra-basic rocks but with a much higher magnetite content.

The structure appears to be quite complex and there is probably extensive cross-faulting of a minor nature. There are zones of lower readings within the anomaly which probably denote zones of talc-carbonate alteration. The zone of high readings near the south contact with the volcanics is regarded important as there appears to be a marked similarity between this zone and an asbestos fibre zone outlined by Canadian Johns Manville Company in Garrison township and described in the paper by H.K. Conn. The zone in Garrison township is situated near

the contact roughly between two cross-faults and is characterized by relatively high magnetic readings. Another zone of high readings exists just to the north of the main zone and this also warrants investigation. The possibility of nickel-copper mineralization along the flanks and embayments of the intrusive should also be investigated.

ANOMALIES "B" AND "C"

These two anomalies are dealt with together as they may possibly be the same ultrabasic body with an irregular shape or possible block faulting. The readings are fairly uniform and the total length covered by the two anomalies is over two miles and the width ranges from 200 feet to 1,400 feet. It appears to be nearly vertical with a possible steep dip to the south.

There does not appear to be any doubt that the anomalous area is due to ultrabasic rocks as drill hole 6, shown on the map, was largely in serpentized peridotite with minor sections of dunite and pyroxenite. Some minor asbestos fibre was noted in several places in the hole. The more favorable areas for investigation would appear to be in the vicinity of irregularities in the anomalies, such as line 48E.

ANOMALY "D"

This anomaly is situated to the south of anomalies "B" and "C" and is separated by a band of probable volcanic rocks. It has a length slightly in excess of one mile and an average width of close to 900 feet. The dip appears to be to the south. The anomaly is fairly regular with not too much evidence of any major faulting although there is the possibility of several minor cross-faults.

There is a core of higher magnetic readings at the west end and drill hole No. 5 has shown this to be caused by ultra-basic rocks containing some asbestos fibre. The ultrabasics again include serpentized peridotite, dunite and pyroxenite but it does not appear possible to outline the contacts magnetically between the various rock types with the exception of the volcanics. Sulphide mineralization is found both in the volcanics and the ultrabasic rocks near the contact.

ANOMALIES "E" AND "F"

These anomalies appear to be the same body with a possible major cross-fault between them. They may also be a faulted section of anomaly "D" as another major cross-fault is indicated between these anomalies, as shown on the accompanying maps. They cover a strike length of

close to two miles with widths ranging from 100 feet to 1,000 feet.

This is likewise interpreted as being caused by ultrabasic rocks with a dip to the south. The presence of cross faulting suggests possibilities for asbestos deposits with "F" anomaly being regarded as the most favorable.

ANOMALY "G"

This anomaly is either a faulted section of "C" or it may be the tail end of the same intrusive with a lower magnetite content. Its importance as far as asbestos deposition will largely depend on information obtained by investigation of the other anomalies. It could represent a favorable area for base metal exploration.

ANOMALY "H"

This is a small anomaly located presumably in the volcanics to the south of "E" and "F". As such it could be important for base metal mineralization and may be due to pyrrhotite mineralization. However, its proximity to a cross fault at the juncture between "E" and "F" anomalies gives the suggestion that this may be a block faulted section of the ultrabasic intrusive. Thus, we have two possible interpretations of this anomaly.

ANOMALY "I"

This is a weak anomaly within the volcanics to the south of the ultrabasic rocks and extends roughly from line 104E westward to 76W, a distance of over three miles. Anomaly "H" discussed previously is situated at the westerly extremity of anomaly "I".

The anomaly is believed to represent either a strike fault and shear zone or possibly a diabase dyke. It could be a favorable locale for sulphide mineralization.

ANOMALY "J"

This anomaly is a small isolated anomaly at the eastern end of anomaly "D". This is somewhat similar to anomaly "H" and could be important for base metal deposition.

ANOMALY "K"

This is a weak anomaly at the extreme west end of the surveyed area and apparently is displaced by a cross fault. It may represent the tail end of the ultrabasic rocks although the readings are quite low. Its location and the faulting suggest a favorable environment for sulphide mineralization.

SURVEY METHODS AND INSTRUMENT DATA

The survey was carried out over a network of lines cut at 400 foot intervals in a north-south direction,

as shown on the accompanying maps. The lines were chained and stations marked at 100 foot intervals along the lines.

The magnetometer survey was carried out using a Sharpe A-2 magnetometer measuring the variations of the vertical component of the earth's magnetic field. Readings were taken at regular 100 foot stations with detail readings at 50 foot intervals over the anomalous areas. A total of 9,251 readings were taken in the survey.

Readings were taken at regular intervals at base stations to correct for the diurnal variation. The results were plotted as gammas on the accompanying maps after correcting for the diurnal variation. The areas of high magnetic readings were outlined by contours and coloured to aid in the interpretation.

#### CONCLUSIONS AND RECOMMENDATIONS

The ground magnetic survey over aeromagnetic anomaly No. 6 indicates that there are a number of discontinuous anomalies along a strike length of over six miles which may possibly be faulted sections of one main body. By correlating the magnetic data with the geological data available from drill holes 5 and 6, it seems likely that the major anomalies are caused by ultrabasic



intrusives which have intruded the surrounding volcanic rocks.

The contacts between the ultrabasics and the volcanics are fairly well defined by the magnetic survey. There is evidence of asbestos fibre in the ultrabasic rocks and sulphide mineralization in both the volcanics and ultrabasic rocks near the contact. Assaying indicates the presence of nickel-copper values and thus there are possibilities of both asbestos and base metal deposits in the area.

There is a certain similarity between the conditions in the area surveyed and those associated with the asbestos deposits in the Munro-Beatty area to the south. On the basis of the data available and the interpretation of magnetic data over the known asbestos deposits, further exploration for asbestos is definitely warranted. Since the area is completely covered with a fairly thick mantle of overburden, this exploration must take the form of diamond drilling and such a program is recommended.

The size of the program will largely depend on the results obtained but since there is a strike length of some six miles of favorable rocks, it would appear that a minimum of 10,000 feet would be required. Anomaly "A" should be investigated first as it appears the most

interesting and the information obtained here may be of vital assistance in laying out the balance of the program. Four proposed holes have been marked on the accompanying map for this anomaly. Additional drilling here will depend on the results obtained.

Only two other proposed holes have been marked on the west section as it was felt that further locations should be deferred until the geological information is available from anomaly "A". This data could then be closely correlated with the magnetic data and other holes spotted.


There would appear to be extensive areas favorable for base metal mineralization along the six mile strike length and some form of exploration is warranted. It is difficult to obtain definite targets for base metal mineralization from the magnetic survey as it is not possible to differentiate the magnetic anomalies that might be caused by pyrrhotite from those due to the presence of magnetite. An electromagnetic survey would differentiate but due to the depth of overburden, which appears to be close to 150 feet, the usefulness of ordinary electromagnetic equipment is somewhat questionable. However, it is the writer's opinion that a vertical loop survey with a maximum coil separation of

800 to 1,000 feet should give ample penetration to give a response from a sulphide orebody below the overburden. A horizontal loop survey using a 300 foot coil separation should also give a penetration of close to 200 feet.

Since the cost of an electromagnetic survey is small in comparison to diamond drilling, it appears warranted along the favorable contact zones. The total mileage involved would be approximately 50 miles and the estimated cost of the survey would be \$3,700.00. This should then be followed by diamond drilling of any targets obtained in the survey. Such a survey could be carried out while drilling is proceeding on Anomaly "A".

Respectfully submitted,

PROSPECTING GEOPHYSICS LTD.



H.J. Bergmann, P. Eng.

Montreal, Que.,  
Jan. 11, 1963.



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REPORT ON  
COMBINED GROUND GEOPHYSICAL CHECK SURVEYS  
OF THE AEROMAGNETIC ANOMALY NO. 5  
MARATHON-MOODY TOWNSHIPS  
IN THE VICINITY OF IROQUOIS FALLS, ONTARIO

for

MISTANGO RIVER MINES LIMITED

by

HUNTING SURVEY CORPORATION LIMITED

Toronto, Ontario

September, 1962.

## INTRODUCTION

Combined ground geophysical check surveys were carried out between June 25th. and July 18th., 1962 by Hunting Survey Corporation Limited for Mistango River Mines Limited. These surveys were carried out over discrete anomalies located during the ground magnetometer survey of the Aeromagnetic Anomaly No. 5 in Marathon-Moody Townships in the vicinity of Iroquois Falls, Ontario.

The combined geophysical surveys consisted of ground magnetometer, gravity and shallow refraction seismic. The ground magnetometer survey was carried out with a Sharpe A-2 vertical component magnetometer with a sensitivity of 20.0 gammas per scale division. The magnetometer survey covered 6,000 feet of line and was carried out over Lines 30+00S, 34+00S, 42+00S, 102+00S and 106+00S which were established by a crew of line-cutters from Mistango River Mines Limited.

The gravity survey was carried out using a Worden gravimeter having an instrument constant of 0.092 milligals per scale division. The gravity survey covered a total of 6,000 feet and was carried out over Lines 32+00S, 42+00S and 104+00S. The elevation of each gravity station was determined by transit. The gravity stations are 50 feet apart along each profile, and the profiles were not tied into each other. A Bouguer gravity profile at a scale of 1 inch to 200 feet was produced for each line. The corrections used are as follows:

(a) Drift correction.

(b) Combined Free Air and Bouguer correction.

The average density of the country rock was taken as 2.67 c. g. s. units and was used to obtain the combined Free Air and Bouguer correction.

The seismic work was carried out over the same lines as the gravity survey. The portable shallow seismic unit model FS-2 was used for this survey.

The results of these surveys are presented as profiles at a scale of 1 inch to 200 feet at the end of this report. Where the line was traversed by each of the three methods, the three profiles are shown on the same map.

## INTERPRETATION

### (a) Ground Magnetometer Survey

This survey was carried out to provide more magnetic details of the three discrete anomalies located at 11+00E on Line 32+00S, 10+00E on Line 40+00S and at the base line on Line 104+00S. The calculated magnetic susceptibility of these bodies is 0.01 c. g. s. units, suggesting that they are due to small basic intrusives or some of the country rock altered by the intrusives and thereby becoming relatively magnetic. The calculations indicate that the magnetic bodies causing these anomalies are approximately 125 feet in depth with horizontal widths from 150 to 250 feet. It is possible that the anomalies located on Lines 32+00S and 40+00S are zones of higher magnetic content within the same body.

### (b) Shallow Refraction Seismic Survey

Seismic profiles were carried out over Lines 32+00S, 42+00S and 104+00S to determine the depth of the bedrock. In most cases the seismic velocities obtained in the overburden was the same, indicating the area to be covered by an overburden of uniform density. The seismic data indicate a top layer of overburden with a velocity range of 2,200 to 3,500 ft/sec. overlying a material with a velocity range of 4,500 to 5,500 ft/sec. which extends to bedrock. Velocities obtained in the bedrock were in the range 11,000 to 18,000 ft/sec. The velocity of the top layer of the overburden indicates a fairly loose material, the second velocity is similar to that obtained from a compacted clay or sand.

The depths obtained to bedrock indicate an undulating bedrock surface, which varies from 90 to 130 feet below ground surface. In all cases there was a certain amount of scattering of the points and the estimated accuracy of the determinations would be  $\pm 20\%$ .

The results of the seismic survey are shown in tabular form giving depths to bedrock and intermediate layers, velocities of the various strata and quality of the determination.

(c) Gravity Survey

The gravity profiles were obtained over the discrete magnetic anomalies located on Lines 32+00S, 42+00S and 104+00S. The velocity of the quantitative interpretation of the gravity data depends:

- (a) on the closeness and precision of the data;
- (b) on the disturbing effects which may be shallow or deep, such as variations in the thickness and density of overburden and deep crustal effects;
- (c) on the amount of geologic control, either actual or assumed.

How these factors affect the present survey can be estimated:

(a) Closeness of the data along the profile is adequate. The combined Free Air and Bouguer correction is 0.06 mg/ft. and the uncertainty of each gravity value is about  $\pm 0.1$  mgal.

(b) The seismic survey carried out to determine the thickness of the overburden, indicated that the bedrock surface may be somewhat irregular. It may be that variations from this cause could be as large as the anomalies observed.

(c) The disturbing effects caused by deep basement density changes or structural variations have been removed by applying a



regional correction.

The three gravity profiles show no major anomaly. The small variations in the order of  $\pm 0.05$  milligals are probably due to instrumental limitations or by boulders in the overburden. Other variations in the gravity profiles are to be noted, particularly on Line 32+00S between 1+00E and 5+00E and on Line 42+00S between 2+00E and 6+00E where minor anomalies having peak values of 0.3 milligals are observed. These small anomalous conditions are probably due to irregularities in the bedrock surface. To be the cause of the anomalies these irregularities would be small and therefore not detectable by the seismic survey. The anomalies could also be caused by small changes within the bedrock which cause a density contrast with the neighbouring formations. These variations within the bedrock could be due to the presence of mineralization. However, careful study of the available data indicates that the mineralization, if present, required to produce the anomalies would be disseminated and probably in the order of 1 to 2% by volume. It is, therefore, concluded that the anomalies do not warrant further exploration at this time.

## SUMMARY AND RECOMMENDATIONS

Three geophysical methods were used over three discrete magnetic anomalies located previously by a ground magnetometer survey of Airborne Anomaly No. 5. The three methods used were magnetometer, gravity and seismic.

The detail magnetic work again indicated the presence of the previously located anomalies. Calculations carried out from the data obtained indicate that these anomalies are due to small basic intrusives or that some of the country rock has been altered by the main intrusive. The widths of the bodies causing the magnetic anomalies vary between 125 and 250 feet and approximately 125 feet below ground surface.

The seismic survey indicated that the bedrock was irregular, and that the depth varied between 90 and 150 feet. The velocities obtained through the overburden indicated it to be of fairly uniform density throughout the general area.

The gravity profiles obtained over the three lines surveyed show that no significant gravity anomalies were located. However Lines 32+00S and 42+00S show a small anomaly to the west of the magnetic anomaly. These small anomalies have a maximum peak value of 0.3 milligals. It is possible that they are caused by (a) variations in the bedrock surface and/or variation in the overburden, or (b) variations within the bedrock, such as a weakly mineralized zone, which has a small density contrast with the neighbouring formations.

Calculations carried out show the causative body to be small, and if mineralized, probably containing less than 2% sulphides by

volume. However, it must be noted that the information available is limited to two widely separated profiles. If the anomalies were due to a mineralized zone it is doubtful if it would be of economic value. Therefore further investigation of the anomalies by drilling is not recommended at this time.

HUNTING SURVEY CORPORATION LIMITED

*EB Nicholls*

E. B. Nicholls,  
Geophysicist.

## APPENDIX

### Summary of Depth to Bedrock Determinations

Symbols used are as follows:

- $V_1$  = Velocity of first layer
- $d_1$  = Thickness of first layer
- $V_2$  = Velocity of second layer
- $d_2$  = Thickness of second layer
- $V_3$  = Velocity of third layer
- $D$  = Depth to bedrock surface

Quality of Record:

- "A" indicates velocities are clearly defined on record.  
Estimated accuracy of determination  $\pm 10\%$ .
- "B" indicates velocities well defined, but scattering of points. Estimated accuracy of determination  $\pm 15\%$ .
- "C" indicates velocities are not clearly defined due to increase in scattering of points or noise level.  
Estimated accuracy of determination  $\pm 20-25\%$ .
- "?" indicates uncertainty of velocities, therefore in depth calculation, due to high noise level, inhomogeneity of overburden or irregular bedrock.

LINE 32S

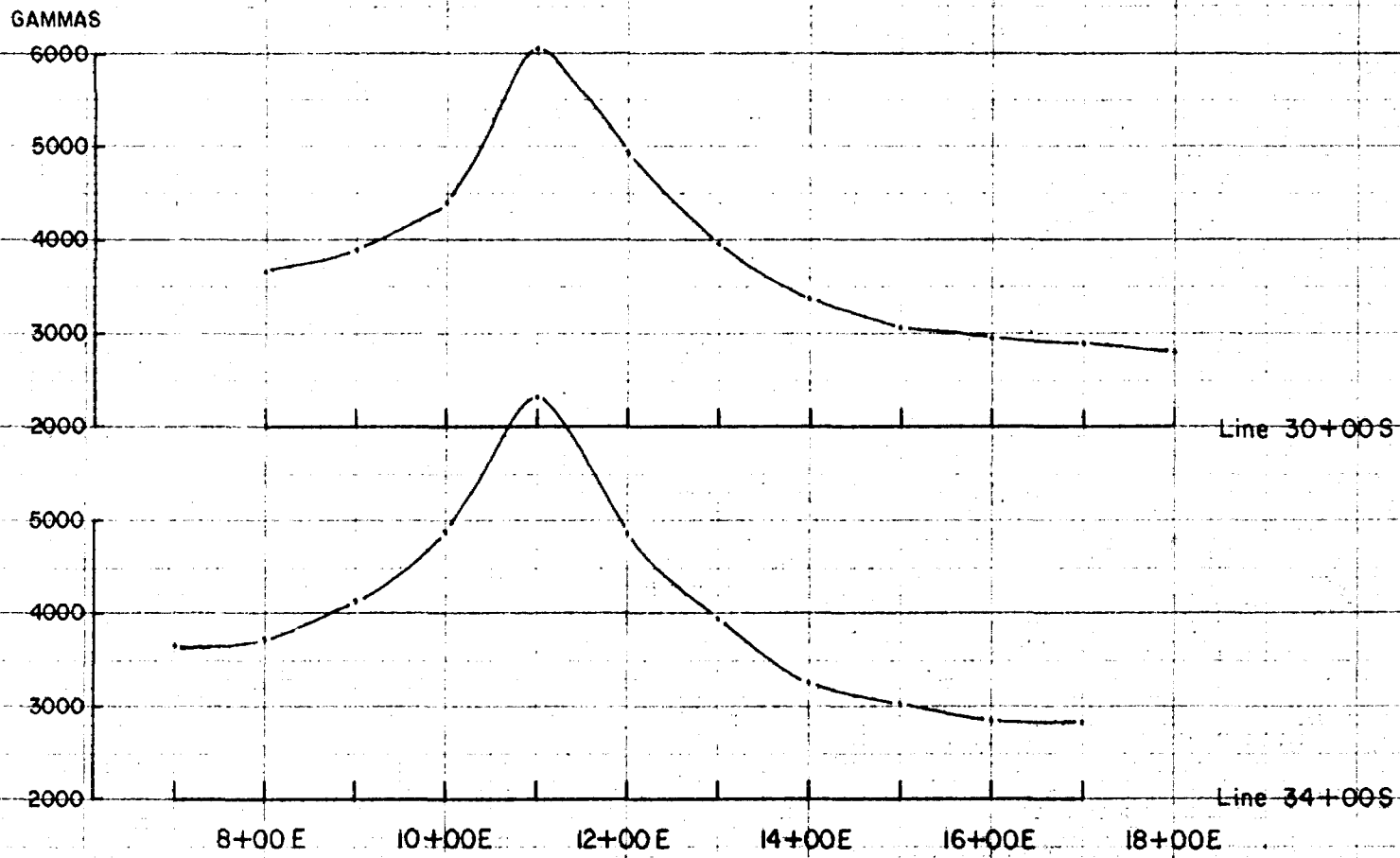
Station	Record Quality	V <sub>1</sub>	d <sub>1</sub>	V <sub>2</sub>	d <sub>2</sub>	V <sub>3</sub>	D
1+00E	C	3,200	5.5	4,700	112.5	14,000	118.0
5+00E - W	C	2,600	5.5	4,800	117	13,500	122.5
5+00E - E	C	3,400	5.00	4,700	123	13,500	128.0
9+00E - W	?	2,500	4.5	3,600	104	20,000	108.5
9+00E - E	?	2,100	5.8	4,300	98	16,000	104
13+00E - W	?	1,900	5.9	4,000	100	18,000	105.9
13+00E - E	?	2,200	4.2	4,200	100.8	13,000	105.0
17+00E - W	?	2,500	5.5	4,400	161	12,800	106.5
17+00E - E		2,500	5.5	4,600	112.5	12,500	118
21+00E - W	C	3,000	4.8	4,800	119	12,500	123.8

LINE 42S

Station	Record Quality	V <sub>1</sub>	d <sub>1</sub>	V <sub>2</sub>	d <sub>2</sub>	V <sub>3</sub>	D
20+00E - W	C	3,400	3.7	4,500	104	14,000	107.7
16+00E - E	B	4,700	120			13,000	120.0
16+00E - W	C	2,800	5	4,800	112	14,000	117.0
12+00E - E	C	2,800	4.8	4,500	103.5	12,500	108.3
12+00E - W	C	2,200	6.0	4,900	94.0	12,500	100.0
8+00E - E	?						?
8+00E - W	?	2,700	5	4,500	101	16,000	106
4+00E - E	C	4,800	105			14,000	105
4+00E - W	B	4,700	112			13,400	112
0+00E - E	B	4,800	105			14,000	105

LINE 104+00S

Station	Record Quality	V <sub>1</sub>	d <sub>1</sub>	V <sub>2</sub>	d <sub>2</sub>	V <sub>3</sub>	D
7+00W - E	C	3,100	5	5,400	90	12,000	95
3+00W - W	C	3,400	5	5,500	89	14,000	94
3+00W - E	C	3,000	5	5,500	90	13,800	95
1+00E - W	C	3,500	5	5,500	105	14,000	110
1+00E - E	C	5,000	112			14,000	112
5+00E - W	C	2,400	6	5,500	100	13,500	106
5+00E - E	B	3,700	4	5,100	119	14,000	123
9+00E - W	C	3,000	48	4,500	127	13,800	131
9+00E - E	C	3,000	5	5,000	126	14,000	131
13+00E - W	C	5,000	125			14,500	125



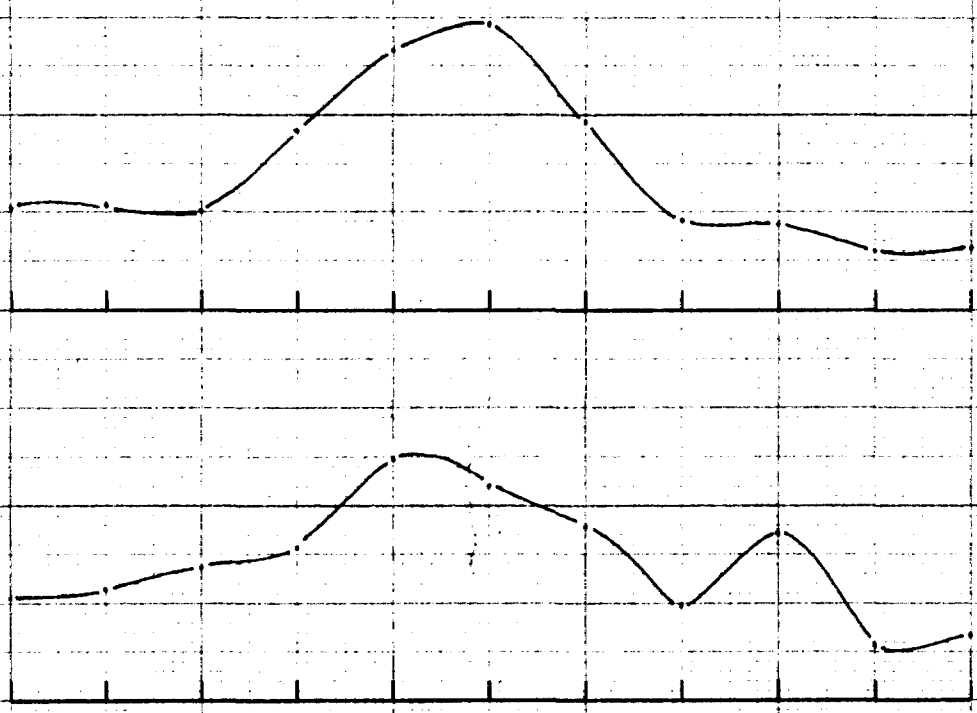
MISTANGO RIVER MINES LIMITED  
 MARATHON - MOODY TOWNSHIPS, ONTARIO  
 MAGNETIC PROFILES

SCALE : 1 inch = 200 feet

Hunting Survey Corporation Limited, Toronto, Canada - September, 1962

GAMMAS

5000  
4000  
3000  
2000  
5000  
4000  
3000  
2000



Line 102+00S

Line 106+00S

MISTANGO RIVER MINES LIMITED  
MARATHON-MOODY TOWNSHIPS, ONTARIO  
MAGNETIC PROFILES

SCALE : 1 inch = 200 feet

Hunting Survey Corporation Limited, Toronto, Canada - September, 1962





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REPORT ON  
GROUND GEOPHYSICAL SURVEYS  
ANOMALY NO. 5  
MARATHON-MOODY TOWNSHIPS, ONTARIO

for

NORTH AMERICAN RARE METALS LIMITED

by

HUNTING SURVEY CORPORATION LIMITED

Toronto, Ontario

March, 1962



42H02SE0001 83.1-29 FOX

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TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
INTERPRETATION	3
(a) Ground Electromagnetic Survey	3
(b) Shallow Refraction Seismic Survey	3
(c) Ground Magnetometer Survey	3
SUMMARY AND CONCLUSIONS	6
RECOMMENDATIONS	8
Figure 1 : Proposed Drilling Program	
POCKET: Maps	
1. Ground Magnetometer Survey - 1" = 400'	
2. Ground Electromagnetic Survey - 1" = 400'	
3. Interpretation - 1" = 400'	

## INTRODUCTION

Combined ground geophysical surveys were carried out between January 12th. and February 6th. , 1962 by Hunting Survey Corporation Limited for North American Rare Metals Limited. These surveys were carried out over the Aeromagnetic Anomaly No. 5 in Marathon-Moody Townships in the vicinity of Iroquois Falls , Ontario.

The combined geophysical surveys consisted of ground magnetometric , ground electromagnetic and shallow refraction seismic surveys. The ground magnetometer survey was carried out with a Sharpe A-2 vertical component magnetometer with a sensitivity of approximately 20.0 gammas per scale division. The ground magnetometer survey covered 249,400 feet of roughly northeasterly lines and 18,600 feet of southeasterly base line for a total of 50.76 line miles of survey. The results are presented as a contoured map at a scale of 1 inch to 400 feet in the pocket of this report. The isomagnetic contour intervals are 100 gammas up to 4,000 gammas , and 1,000 gammas over 4,000 gammas , over an arbitrary background of roughly 2,500 gammas.

The ground electromagnetic survey was carried out with Ronka Horizontal Loop Mark 4 equipment with coil separations of 200 and 300 feet. The 200 foot coil separation survey covered Lines 0+00 to 48+00S of the magnetometer survey or 65,700 feet of lines. The 300 foot coil separation resurveyed 3,750 feet of Lines 28+00S and 32+00S. Thus , the ground electromagnetic survey covered a total of 13.17 line-miles of survey. The results of this survey are presented as a map at a scale of 1 inch to 400 feet in the pocket at the end of this report. The in-phase

(full line) and out-of-phase (dashed line) readings are shown as profiles at a scale (perpendicular to the lines) of one inch to 20% of the primary field.

The shallow refraction seismic survey was carried out using the FS-2 single channel equipment. This survey had to be cut short due to the extreme cold weather encountered despite the fact that this equipment is tested and remains operational to 30° below zero.

The interpretation of these surveys are presented as a map at a scale of 1 inch to 400 feet in the pocket at the end of this report, with the isomagnetic contour lines as background.

## INTERPRETATION

### (a) Ground Electromagnetic Survey

This survey indicated no anomaly of significance. One deviation from normal background is observed to the east of the Base Line from Line 20+00S to Line 40+00S. However, its shape and polarity clearly indicate that this anomaly is due to conductivity of the overburden and therefore of no economic significance.

### (b) Shallow Refraction Seismic Survey

Due to the extreme cold, only one dependable depth to bedrock could be obtained. This is located at 4+00W on Line 20+00S. The seismic data indicate a layer of dry overburden (2,800 feet per second) overlying the water table at a depth of 21 feet. The wet overburden (5,600 feet per second) extends from the water table to the bedrock surface at a depth of 143 feet. The bedrock is clearly recognized with a velocity of 16,000 feet per second.

A questionable depth to bedrock of 133 feet was obtained at 40+00S on Base Line 0+00. Unfortunately, the bedrock velocity of 15,000 feet per second is poorly indicated and it is possible that the bedrock could be at a much larger depth (200 feet or more).

### (c) Ground Magnetometer Survey

The ground magnetometer survey detected and localized the Airborne Magnetometer Anomaly No. 5. However, the ground survey, as indicated on the accompanying interpretation map, broke the single airborne anomaly into a series of parallel to sub-parallel anomalies of

varying intensities.

The main or strongest of the anomalies starts at approximately Line 8+00S and extends southeasterly to Line 160+00S with a slightly curved trend. At Line 40+00S, the anomaly breaks into two branches which separate by as much as 1,200 feet from peak to peak to join again into a single anomaly on Line 124+00S. Calculations carried out indicate that the magnetic body or bodies causing these anomalous conditions vary in depth from approximately 100 to 250 feet, with horizontal widths from 175 to 400 feet. The bodies are dike-like in that they extend for large distances along their strike and downward, and in that they dip approximately vertically. The calculated magnetic susceptibility of these bodies varies from 0.03 to 0.08 c. g. s. units, suggesting the presence of ultrabasic intrusive rocks or weak iron formations. However, the regularity of the magnetic characteristics of these rocks strongly points towards the presence of ultrabasic intrusives. The magnetic bodies as outlined on the accompanying map may indicate the actual intrusive, or it may merely indicate the segregated magnetite within the intrusive. Thus, in the area where the main anomaly branches, the intervening rock could be part of the basic intrusive.

A number of parallel to sub-parallel magnetic bodies are outlined. These are believed to be some of the country rocks, probably altered by the intrusive and thereby becoming weakly magnetic. There is the possibility also that these magnetic bodies represent small outliers of the same basic intrusive. There is no way of determining the nature of the country rock on the basis of the available

data. However, if the weakly magnetic bodies are part of the country rock, then the ultrabasic rocks must have intruded layered formations, either volcanic or sedimentary in origin.

Finally, a number of small, weakly magnetic basic dikes trending almost north-south are interpreted. Their magnetic anomalies are too weak to properly determine their widths. But their straightness and the consistency of their trend clearly indicate their nature.

Two directions of faulting are observed. The more frequent and the more effective as to apparent displacements is clearly the north to north-northeasterly fault system. It produces major right-hand horizontal displacements although in a few cases it may also cause weak left-hand movements. The second fault system trends in a north-easterly to east-northeasterly direction and appears to favour right-hand displacements. Although not detected, it is quite possible that both fault systems may also cause vertical displacements.

## SUMMARY AND CONCLUSIONS

The ground magnetometer survey has shown that the airborne Anomaly No. 5 is caused by two bands of magnetic rocks, each with a maximum width of 400 feet. These rocks appear to join into a single band to the north and to the south. The calculated susceptibilities vary from 0.03 to 0.08 c.g.s. units. If no remanent magnetism is assumed, these susceptibilities indicate the presence of 12 to 30 percent magnetite by volume. Thus, these rocks are basic to ultrabasic intrusives or weak iron formation. The latter appears improbable on the basis of the observed continuity and relative simplicity of the profiles. The presence of ultrabasic rocks offers two possibilities: first, the presence of two narrow intrusives or a single intrusive but tightly folded at both ends; secondly, the presence of a larger intrusive in which the magnetite has been segregated to the edges. The first possibility indicates a maximum width of 400 feet for any one band, whereas in the second possibility, the width of the intrusive may reach 1,500 feet.

The conditions across this ultrabasic intrusive or intrusives appear very similar to those encountered in the vicinity of the chrysotile asbestos deposits in Munro and Beatty Townships. Thus, several fault systems are detected and appear to be more effective in the immediate vicinity of intrusive than in the country rock. The presence of dikes of diabase or similar material is also indicated, showing that tension fractures did occur at some time in this area.



In conclusion, on the basis of the available information, the area of the interpreted intrusive appears favourable for asbestos exploration. Although asbestos is usually associated with magnetite, this association does not necessarily occur at the highest magnetite concentration and therefore it is not possible at this time to predict where, within the intrusive, the asbestos, if any, may be found.

## RECOMMENDATIONS

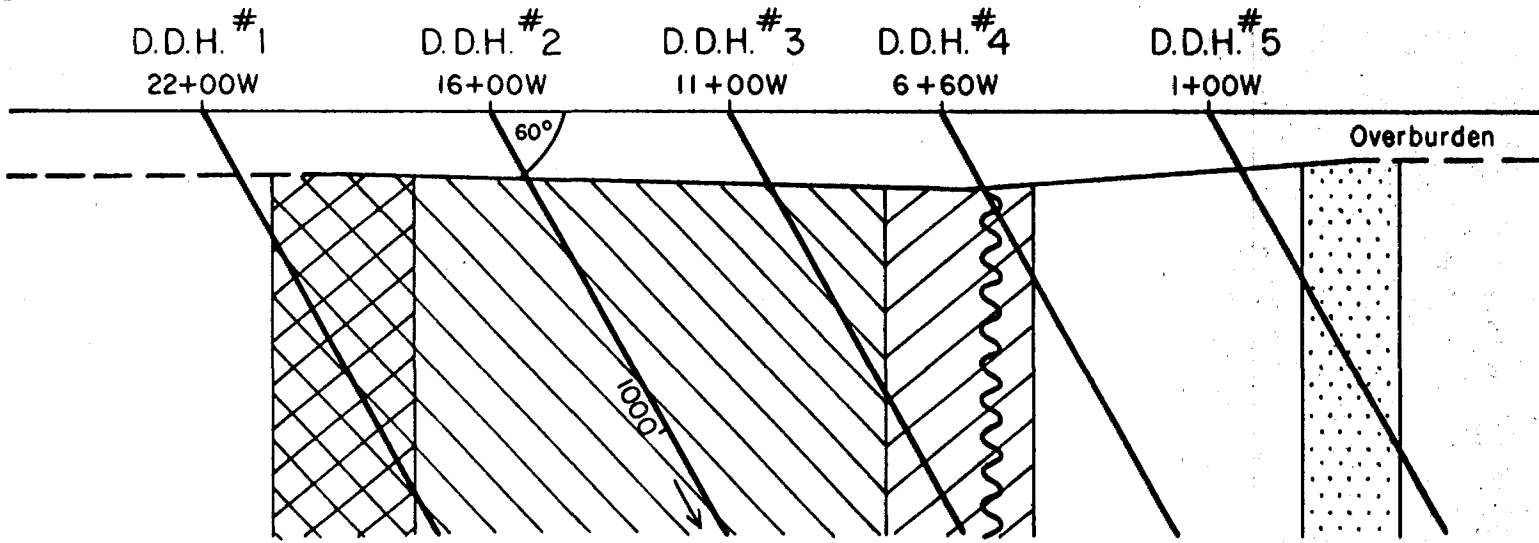
Due to the total lack of direct geological information in this area, the next step in the exploration program should be to obtain such information. Thus, a drilling program is proposed to obtain a complete geological section extending from 22+00W to 4+00E on Line 84+00S. The proposed drill holes are shown in plan on the accompanying interpretation map, and in cross-section in Figure 1. Five drill holes are required, all drilled at an inclination of 60° along the picket line in a northeasterly direction, each with down-hole lengths of 1,000 feet. Drill holes Nos. 1 to 5 are collared at 22+00W, 16+00W, 11+00W, 6+60W and 1+00W, respectively. Thus a total of 5,000 feet of drilling would be required.

This drilling program has the following purposes:

- (1) verify the interpretation of the ultrabasic intrusive or intrusives;
- (2) verify the nature of the bedrock between the two magnetic bands;
- (3) verify the nature of the interpreted country rock;
- (4) test the strongest and one of the weaker magnetite concentrations, the intervening rocks, and the effect of faulting on asbestos possibilities;
- (5) test the various contacts for base metal mineralization.

The proposed drilling program may not find mineralization of any kind. The program cannot be planned to do so due to the lack of geological information. It is hoped that it will verify the interpreted

LINE 84 + 00 S



Scale: 1" = 400'

LEGEND




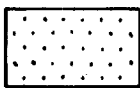
<u>Calculated Susceptibilities</u>		<u>Interpretation</u>
over 0.05 cgs .....		} ..... Basic intrusive
0.025 - 0.05 cgs ..		
		..... Non-magnetic portion of basic intrusive or country rock.
less than 0.025 cgs -		..... Country rock or outlyers of basic intrusive

Figure I: Proposed Drilling Program

favourable conditions for mineralization and at the same time provide a maximum of geological data for a minimum of drilling. Further exploration work on Anomaly No. 5, in the form of systematic drilling or additional geophysical surveys, will depend on the results of the proposed drilling program. Furthermore, this program may provide information regarding the future of the other, similar aeromagnetic anomalies within the client's concession.

HUNTING SURVEY CORPORATION LIMITED



C. W. Faessler,  
Senior Geophysicist.



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REPORT ON THE EXPLORATORY LICENCE  
OF OCCUPATION NO. 13,302  
FOR  
MISTANGO RIVER MINES LIMITED

Toronto, Ontario  
November 21, 1962

K. H. Cumming



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	<u>Page Number</u>
Summary -----	1
Conclusions -----	2
Introduction -----	3
Location and Access -----	5
Work Performed -----	6
1. Drilling -----	6
2. Geophysical Surveying -----	7
Geology -----	8
Assay Results -----	12

Maps in Pocket:

1. Diamond Drill Hole Locations  
Scale 1" = 1/2 Mile
2. Vertical Drill Hole Sections  
Scale 1" = 100'
3. Drill logs for holes 1 to 6.

K.H. Cumming

FORM NO. LAZ-811-P REPORT PAPER GRAND & TOY LIMITED

SUMMARY

Mistango River Mines Limited have acquired an exploration concession comprising approximately 45,000 acres, from the Ontario Department of Mines, and known as the Exploratory Licence of Occupation No. 13,302. This Licence is valid for a term of three years commencing November 16, 1961, and gives sole right to explore within the boundary for mineral deposits.

An airborne magnetometer survey has outlined an anomalous belt within the Licence over a length of about 28 miles. Within this belt, seven large airborne magnetometer anomalies are found, and one of these, No. 5 anomaly, has already been investigated by 3,864 feet of drilling in four holes, and found to be low grade iron formation. No further work is warranted on No. 5 anomaly, other than some geophysical traverses along a small anomaly under the Mistango River just off to the side of the iron formation. It is possible this anomaly might represent a sulphide body containing base-metal mineralization.

Serpentinized ultrabasic rocks accompanied by chrysotile asbestos mineralization have been intersected in two holes on anomaly No. 6, a few miles southeast of No. 5 anomaly. This No. 6 anomaly has a similar general appearance to the anomaly found at the Canadian Johns Manville asbestos mine, at Matheson, approximately 20 miles to the south.

The asbestos mineralization intersected so far is not of economic grade, but other areas with this large anomalous zone should be

investigated for possible high grade concentrations. Base-metal deposition, such as nickel-copper mineralization associated with ultrabasic intrusives, must not be overlooked.

A ground magnetometer survey is now in progress on anomaly No. 6, and it is hoped that structural breaks within the anomaly will become more evident after the survey is completed, and choice drill hole locations can be spotted to help in the search for high grade asbestos. Also, any magnetic anomalies around the margin of the intrusive will stand out in the ground survey and not be masked by the overall effect recorded by the airborne instrument.

#### CONCLUSIONS

The work performed on No. 5 anomaly has shown that low grade iron formation is responsible for the recorded airborne magnetometer anomaly. No further work is warranted on the anomaly with the exception of check geophysical work on the small anomaly lying under the Mistango River. It is possible this anomaly might be caused by economic sulphides including magnetite and /or pyrrhotite.

The two drill holes put down on No. 6 anomaly have confirmed the presence of an ultrabasic intrusive of considerable dimensions, mineralized with some chrysotile asbestos. Although the asbestos encountered so far is not of economical grade, it does indicate the possibility of finding somewhere within the large anomaly, areas of good grade mineralization.



This large airborne magnetometer anomaly has many similar characteristics to that found at the Canadian Johns Manville asbestos mine. The data suggest there are many faults through the anomaly, and the presence of these structural breaks appear to be necessary for good grade asbestos mineralization to exist.

A ground, magnetometer survey is being completed at present, and this survey will be invaluable in sorting out the structure of the anomaly, and help in the selection of better areas where high grade asbestos mineralization might occur.

The possibility of nickel-copper occurrences around the intrusive-volcanic contact should not be overlooked, and any recorded magnetic anomalies should be carefully evaluated with a view to finding an economic sulphide deposit.

#### INTRODUCTION:

The Exploratory Licence of Occupation No. 13,302 was granted to North American Rare Metals on November 29, 1961, for a term of three years commencing November 16, 1961. This Licence comprises approximately 45,000 acres located about 25 miles north of Matheson, Ontario.

North American Rare Metals performed line cutting and a ground magnetometer survey in the northwest quarter of Moody Township during the period December, 1961, to March, 1962.

Under an agreement dated March 12, 1962, North American Rare Metals transferred the Exploratory Licence to Mistango River Mines Limited,

INTRODUCTION - contd.

and all subsequent work was performed by this latter Company.

During the period June 15 to October 24, 1962, Heath and Sherwood Diamond Drilling Co. drilled a total of 5,822 feet of core in 6 holes, under contract to Mistango River Mines, in Moody and Galna townships.

Four of the drill holes are located on airborne magnetometer anomaly No. 5 and the other two are located near Trail Lake on anomaly No. 6 (see accompanying map for drill hole locations.)

While the drilling was in progress on anomaly No. 5, some check magnetometer, seismic, and gravity traverses were performed along the margins of anomaly No. 5, and a single cut and picketed line, 13,200 feet long, was put over anomaly No. 6 near Trail Lake, and surveyed by a magnetometer and a few seismic readings.

The drilling on anomaly No. 5 confirmed the presence of sedimentary iron formation, while the two holes on No. 6 anomaly intersected serpentized ultrabasic rocks with some asbestos mineralization.

Drilling operations were stopped on October 30 because of the imminent freeze-up, and recommendations were made to put a grid of approximately 135 miles over anomaly No. 6, and conduct a ground magnetometer survey. It was recommended this work be started before freeze-up in order to take advantage of the period when drilling operations would be halted, and thus be an aid in selecting future

INTRODUCTION - contd.

drill holes before the drilling recommences. This ground magnetometer survey is now in progress and should be completed sometime in December.

LOCATION AND ACCESS:

The Exploratory Licence of Occupation, No. 13,302, granted to North American Rare Metals Ltd., and later obtained by Mistango River Mines Ltd., is located approximately 50 airmiles northeast of Timmins, Ontario, and traverses several townships immediately west of Abitibi Lake, on the Ontario-Quebec Interprovincial boundary. The centre of this concession lies 25 miles due north of Matheson, a small town on the O.N.R. railway.

Four of the six holes drilled are located on airborne magnetometer anomaly No. 5, and the last two on anomaly No. 6. The four holes on No. 5 anomaly are located in the northwest quarter of Moody township, between Marathon Lake and the Mistango River, and the last two holes on No. 6 anomaly are located near the centre of the Moody-Galna township line, near Trail Lake.

Access to this region is available by several means of travel. The easiest access is afforded by float - or ski - equipped bush planes. A good gravel road, maintained by Abitibi Power and Paper Co., connects Iroquois Falls to a tractor road five miles north of Marathon Lake. This same tractor road continues to Trail Lake but is in very bad repair.

In the winter it is possible to drive to the Mistango River within two miles of the drill holes put down on anomaly No. 5.

The C.N.R. line crosses the northern portion of the Licence, and it is possible to enter the area in this manner. It is also possible to canoe up the Mistango River from Iroquois Falls, a distance of approximately 25 miles.

WORK PERFORMED:

1. Drilling

During the period June to October, 1962, a total of 5,822 feet of drill core was obtained in six holes drilled in Moody and Galna townships.

The move into the property by the drilling company took considerable time due to the poor condition of the tractor road because of heavy rainfall. Under winter conditions, this move would have been completed much more quickly.

The overburden presented some problems because of the depth to bedrock, which varied from 100 to 198 feet, and because of the presence of large boulders in a clay-sand mixture. Sanding together of the BX and AX casing frequently caused delays, but the greatest problem resulted from pulling the casing to replace worn out casing shoes. The diamond loss was high because of the abrasive action of the sand and shifting boulders, and it was often difficult to get the casing back down the hole.

DRILLING WORK - contd.

Core drilling itself presented no special problems and recovery was normal. The greatest losses occurred in the soft, easily ground, talcose rocks.

Because of the difficulty in setting the casing into the bedrock in hole No. 5, it was necessary to drive EX casing down and drill from 192 feet to the bottom with EX equipment. With the exception of the above and a few feet of BX core, all the core recovered is AX size.

All the pertinent data regarding the drilling performed is summarized in Table No. I at the end of this report.

2. GEOPHYSICAL SURVEYING:

While drilling was in progress on anomaly No. 5, Hunting Survey Corp. performed some check traverses around the margin of the anomaly to better outline some minor magnetic anomalies that did not appear to be directly related to the main airborne anomaly. This work was conducted in view of the possible occurrences of base metal mineralization accompanied by magnetite and/or pyrrhotite, near the iron formation found in the first holes.

The geophysical work consisted of traversing with magnetometer, gravity, and seismic equipment, and it did not disclose any significant features, and only helped to better define and confirm the continuity of the banded iron formation found in the drilling.

GEOPHYSICAL SURVEYING - contd.

One small, separate, anomaly under the Mistango River will be checked this winter, and detail traverses will be planned and drilling contemplated, if it is confirmed and proves interesting.

After completing the work on No. 5 anomaly, the Hunting crew moved to Trail Lake, and traversed a line over two miles long (Line A) over the peaks of airborne anomaly No. 6, with a Sharpe A-2 magnetometer and took some seismic soundings.

The survey results indicated either banded iron formation or ultrabasic intrusives were the causative body, and drill hole No. 5 proved the latter interpretation to be correct.

After completing one more hole (No. 6) it was recommended a complete grid be cut over the airborne anomaly to be followed by a ground magnetic survey. This work is now in progress and will be completed prior to recommencing future contemplated drill holes.

GEOLOGY:

The Exploratory Licence of Occupation lies within the "clay belt" of Northern Ontario and Northwestern Quebec, and because of the paucity of outcrops in this region, very little geological information is available. The thickness of overburden is considerable and only inferences to the possible bedrock geology are made possible by a few widely scattered outcrops outside the Licence, and results of airborne geophysical surveys, notably the magnetometer. Other than the core seen from the six drill holes put down on the two

GEOLOGY - contd.

airborne magnetometer anomalies and a few granite outcroppings just within the boundary near the Stimson - Sweatman township line, no other rock is visible within the concession area.

The four holes drilled on the No. 5 anomaly near Marathon Lake, all intersected sedimentary rocks, for the large part, altered greywackes with interbedded iron formation.

The sediments are largely altered to a streaky, chloritic, greenish-coloured rock with prominent iron-rich amphibole streaks, and in places they are extensively carbonatized and sericitized, suggesting they are not too far from the volcanic contact.

The greywackes are grey in colour and occasionally show graded bedding, but top determinations are doubtful due to metamorphism, which sometimes produces a reversal in the apparent bedding. Determinations that were made with the above reservation in mind, suggest the tops face southwest. The greywackes consist of fragments of quartz, pink feldspar, jasper, carbonate, and pyrite cubes, in a chlorite-sericite matrix.

The altered sediments are carbonaceous in places, and lightly banded argillaceous beds are seen as well. As the iron formation is approached, these sediments become more chloritic - and streaky-appearing with many narrow bands of magnetite up to  $\frac{1}{2}$ " in width.

GEOLOGY - contd.

The iron formation consists of magnetite bands separated by short sections of interbedded sediments. Some bands are composed of nearly solid magnetite, while others are separated by narrow carbonate sections. Most of the iron formation sections would assay from 10 to 15% Fe, and only occasionally are short, better grade sections seen, up to 25% Fe. Some of the bands are frequently brecciated and strongly deformed and contorted.

This iron formation occurs in two bands, approximately 1200 feet apart at the middle of the anomaly, and coming together at the southeastern end. The northwestern end appears to be faulted with northerly displacement on the west side, and then continuing in the same northwest direction.

It is difficult to define the extent of these sediments from the limited amount of drilling that was done, but it is felt that these rocks do not lie too far from the volcanic contact, because of the extensive carbonatization and sericitization seen in the core.

The last two holes drilled are located near Trail Lake on No. 6 anomaly. This anomaly lies 3 - 4 miles southeast of anomaly No. 5, and unlike No. 5, it trends in an east - west direction, and is outlined for a length of 7 - 8 miles, and a width varying from  $\frac{1}{2}$  -  $1\frac{1}{2}$  miles.



GEOLOGY - contd.

Here, serpentized ultrabasic rocks were intersected with some chrysotile asbestos mineralization. The rocks consist of coarse-grained serpentized peridotite, greenish-translucent dunite, olivine pyroxenite, quartz diorite, and streaky greenish coloured volcanics (greenstones).

The volcanics are grey-coloured with large feldspar phenocrysts and a few narrow quartz-carbonate veins. As the phenocrysts decrease, the rock becomes streaky and greenish-coloured and are typical looking greenstones.

The serpentized peridotite contains from 10 to 15% pyroxene in the form of bastite, and is very coarse-grained. Picrolite veinlets occur near the chrysotile, and approximately 5% magnetite is present throughout the rock as finely disseminated grains. The magnetite content increases from 5 to 10-15% in places and accounts for the peaks found in the traverse along Line A.

The asbestos mineralization occurs as both cross-and slip-fibre, of good quality and free from carbonaceous or deleterious material. Most of the slips are narrow (1/16") to hairline in width, with an occasional wider one.

None of the asbestos mineralization so far encountered is of economic grade, but it lends encouragement to the possibility of

GEOLOGY - contd.

finding areas within the large aeromagnetic anomaly where economic grades of asbestos might be found.

ASSAY RESULTS:

A total of thirty-five samples of drill core from hole No. 1 were sent for their soluble iron content. Individual assay returns for the samples are shown on the drill log and the vertical section for hole No. 1. No other samples of the iron formation were sent for assay because of the disappointing results obtained from the first hole, and because nothing of better grade was seen in the following three holes.

The best assay obtained is from 361' - 376' and runs 23.91% Fe for the 15 - foot section. The entire 270 - foot assayed section, i.e., 319'-589', averages 15.07% Fe.

One short grab sample of core showing nearly massive pyrrhotite from hole No. 5, assayed 0.35% Ni and 0.57% Cu. This sample was taken in the volcanics near the ultrabasic contact, and consisted of a talcose rock mineralized with pyrrhotite, pyrite, and minor chalcopyrite.

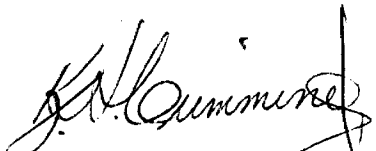
  
K. H. Cumming P. Eng.

TABLE NO. 1DIAMOND DRILL HOLE SUMMARYDRILL HOLES ON ANOMALY NO. 5

DDH No.	LOCATION		AZIMUTH OF HOLE	DIP AT SURFACE	FINAL DEPTH	DIP TESTS TAKEN AT					COMMENCED 1962	COMPLETED 1962
	Line	Sta.				200'	400'	600'	800'	(FOOTAGE)		
1	84 S	22400W	50°	60°	997'	60°	46°	40°	39°	(970') 39°	June 15	June 29
2	84 S	11400W	50°	60°	999'	47°	45°	41°	40°	(975') 37°	July 1	July 24
3	104 S	2400W	50°	60°	900'	55°	48°	40°	38°	No Test	July 27	Aug. 14
4	84 S	19400W	230°	60°	968'	59°	57°	52°	Lost	(940') 42°	Aug. 18	Aug. 26

DRILL HOLES ON ANOMALY NO. 6

5	A	60400S	322°	60°	1001'	55°	54°	50°	51°	50°	Sept. 9	Sept. 28
6	A	14400S	142°	60°	957'	65°	62°	42°	61°	No Test	Oct. 4	Oct. 24

Total Footage Drilled

5,822'

83.1-29

VOL. 3

APPENDIXADDITIONAL GEOPHYSICAL SURVEYSANOMALY NO. 6MOODY AND GALNA TOWNSHIPS, ONT.

Some additional geophysical surveys, including magnetic and electromagnetic surveys, have been carried out on your airborne Anomaly No. 6. A brief description of the work follows and included with this memo are revised maps showing the additional results.

MAGNETOMETER SURVEY

Two intermediate lines were surveyed on the east half lines 54E and 58E while the west half had the following intermediate lines surveyed: Lines 8W, 6W, 10W, 82W and 86W. From these intermediate lines there is an indication of a north-south striking fault on line 8W but otherwise the readings do not appear to change the original magnetic picture.

Some additional lines were out and surveyed north-west of the main anomaly. These include lines 204W to 236W and the results are shown on the West Half Map - Anomaly No. 6 and a separate map tying onto the West Half.

The results show another magnetic anomaly approximately 2,000 feet in length and about 800 feet wide. This would appear to be about the same type as Anomaly "K" but offset to the north. It would appear that these intrusive bodies are all related and maybe faulted sections of one major body.

#### ELECTROMAGNETIC SURVEY

An electromagnetic survey was carried out over Anomaly "A" using a Ronka Mark IV horizontal loop electromagnetic unit with a 300 foot coil interval. The results of this survey are shown on a separate map with the outline of the magnetic anomaly (over 3,000 gammas).

There is a major conductive zone extending from line 116E to 136E which is quite conductive in its central portion. The axis of this conductor runs along the flank of the magnetic anomaly and would appear to follow the contact between the intrusive and the volcanics to the south. The dip appears to be to the north. This in all probability represents graphite and/or sulphide mineralization along the contact. It is quite possible diamond drilling has already shown the cause of the conductor but if not, it warrants drilling as this is the locale for the nickel-bearing sulphides indicated in earlier drilling.

The conductor is faulted at the west end and this

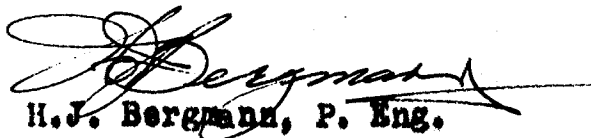
fault corresponds to the indicated fault on the magnetic survey. It appears to also be faulted at the east end where it dies out. The conductor is strongest where the magnetic readings are the highest and it no doubt is related to the amount of alteration along the contact.

There is also a weak conductor indicated north of the magnetic anomaly but this has a different trend but follows the north contact of the magnetic anomaly. It would seem likely that the cause of this conductor is similar to the main one but it is much weaker unless the overburden is greater.

Lines 124E and 128E were also surveyed using the 200 foot coil interval for depth determination. The readings indicate the conductor is at a fairly shallow depth on these lines but no accurate determination can be made for shallow depths.

Respectfully submitted,

PROSPECTING GEOPHYSICS LTD.

  
H.J. Bergmann, P. Eng.

Montreal, Que.,  
April 25, 1963.



83.1-29

APPENDIX ITEM E

**HUNTING SURVEY CORPORATION LIMITED**

1450 O'Connor Drive Toronto 16 Canada • Plymouth 5-1141 Cables: Canhunt

successor to: The Photographic Survey Corporation Limited • Hunting Airborne Geophysics Limited • Hunting Technical & Exploration Services Limited

Q. 2479

November 30th. , 1961.

North American Rare Metals ,  
100 Adelaide Street West ,  
TORONTO, Ontario.

Attention: Mr. W. A. Carter

Dear Sirs;

With reference to your recent discussions with our Mr. G. S. Willson, we are pleased to submit, as requested, our proposal for carrying out a ground geophysical follow-up survey over the anomalies outlined by the aeromagnetic survey.

We have studied the airborne magnetic results and recommend the following programme for investigating the anomalies:

- (1) The establishing of a line grid over the anomalous area, this to consist of a base line along the axis of the anomaly and traverse lines 400 feet apart at right angles to the base line.
- (2) The carrying out of a magnetometer survey over the established line grid, with stations at 100 foot intervals.
- (3) A seismic survey, to check possible drilling locations for least overburden coverage.
- (4) An electromagnetic survey over the established line grid, with stations at 100 foot intervals to prospect for possible sulphide occurrences.

The seismic and E.M. surveys are offered as optional extras, as they are not absolutely necessary, however, they will be of great assistance in the investigation of the anomaly and defining its cause. On completion of the geophysical survey a diamond drilling programme could then be undertaken.

.... /p.2

⊕ Toronto • Montreal • Ottawa • Calgary • Vancouver

⊕ Associate companies in: United States • Argentina • Brazil • Chile • Venezuela

It is our understanding that you wish to survey Anomaly No. 5 at the present time and to cover the other anomalies at a later date. We are prepared to carry out the above-mentioned geophysical programme this winter, as soon as possible. We would provide the line cutting crew, geophysical parties and instruments for the following unit prices:

Line cutting .....	\$ 55.00 per line mile
Magnetometer survey .....	\$ 60.00 per line mile
Seismic survey.....	\$1,100.00 per week
E.M. survey .....	\$ 55.00 per mile

The prices include travelling and living expenses of the crews, location of line grid over anomaly, interpretation of the results and report. However, the prices for the seismic and E.M. surveys are contingent upon their being done at the same time as the magnetometer survey.

To provide coverage of Anomaly No. 5, 50 miles of lines will be necessary, the layout of which is shown on the accompanying sketch. Following the line cutting a magnetometer and E.M. survey will be carried out over Lines 0 to 48 inclusive. The magnetometer survey would then be extended over the whole grid system and an evaluation made of the E.M. data before proceeding with more E.M. Our quotation for the survey of this anomaly is as follows:

(a) Line cutting .....	\$2,750.00
(b) Magnetometer survey .....	3,000.00
(c) E.M. survey - Lines 0-48 (13 miles) .....	<u>715.00</u>
Sub-Total	\$6,465.00
(d) Seismic survey (1 week) .....	<u>1,100.00</u>
Sub-Total	\$7,565.00
(e) E.M. survey (to cover remaining lines, if required) .....	<u>2,035.00</u>
Grand Total	\$9,600.00
(f) Allowance for contingencies	\$2,000.00



It is our understanding that items (a), (b), (c) and (d) will be carried out and that item (e) will only be required if the data obtained during the test E.M. survey on Lines 0-48 is satisfactory.

In order to provide adequate coverage it may be found necessary to put in some detail lines or stations, to cover this contingency North American Rare Metals should make an allowance for a further \$2,000.00 expenditure. Hence for a total cost of \$11,600.00 a complete and detailed investigation of Anomaly No. 5 will be undertaken.

If you require any further information please do not hesitate to contact us. We are enclosing two copies of this letter, so that should you wish to proceed with the survey you can so indicate by signing one copy and returning it to this office. As we are presently preparing our winter schedule, we would appreciate learning of your decision as soon as possible so that we can reserve the crew and equipment for the survey.

We hope that this proposal meets with your approval.

Yours very truly,

HUNTING SURVEY CORPORATION LIMITED



E. B. Nicholls.

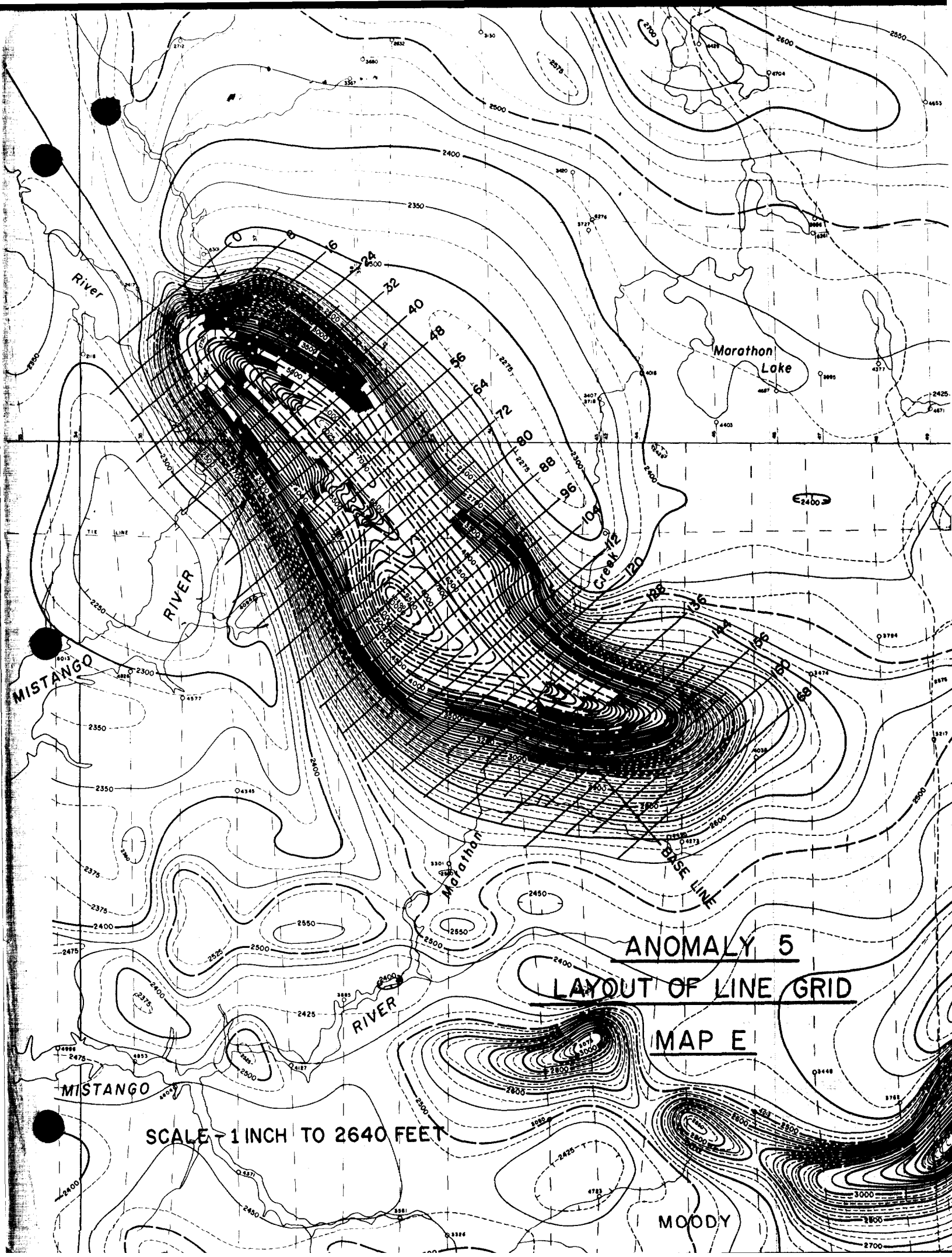
EBN/ko

Line cutting, Magnetometer, Seismic and E.M. surveys, with approved 25% contingency coverage.

(Approved):



North American Rare Metals.



Marathon Lake

MISTANGO

ANOMALY 5  
LAYOUT OF LINE GRID  
MAP E

SCALE - 1 INCH TO 2640 FEET

MOODY



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1.....

SHEET NUMBER 2..... SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	Rock is fairly heavily carbonated in places as individual grains, as narrow vein fillings, and as coatings on the margins of epidote stringers. Some sections are fine-grained.								
206 $\frac{1}{2}$ -214	bands of magnetite appear up to 2 $\frac{1}{2}$ " wide with the average around $\frac{1}{2}$ ", at 45-60° to the core axis.								
214-229	similar to 192-202								
229-236	GREYWACKE - fine-grained, grey colour, carbonated rock, with feldspar-quartz-biotite fragments in a fine-grained chloritic matrix. No grain gradation visible.								
236-319.5	ALTERED SEDIMENTS - very streaky in places with strong chloritization. Minor bands of Iron Formation (I.F.), and occasionally a heavy spot								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1  
 SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
						% Fe		
	up to 2½" wide, are seen.	4601	319	329	10	11.87		
	Portions of this section	4602	329	339	10	5.13		
	were probably originally	4603	339	349.5	10.5	9.00		
	greywackes.							
	242-243 banded iron formation							
	264.7-265.7 heavy magnetite							
	a lot of magnetite							
	as seams of varying							
	widths with one 2½" at							
	324.5							
	320-349.5 very chloritic and							
	greenish coloured.							
349.5-353	CONTACT ZONE - a lot of magnetite is seen. Rock is streaky and							

NORTHERN MINER FORM 505 REV./54

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SIGNED.....

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1.....

SHEET NUMBER 4..... SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
						% Fe		
	banded with some carbonate seen, especially near upper contact. Very likely an altered greywacke which starts at 236.	4604	349.5	353.0	3.5	16.28		
353-355	GREYWACKE - grey colour, showing graded bedding. Good contacts at both ends at 45° to core axis. Fragments consist of quartz, jasper, pink feldspar, carbonate, pyrite cubes, in a chlorite-sericite matrix. Top determination is doubtful - suggests top face S.W. Appears to be at least two beds.							
355-358	MASSIVE MAGNETITE - almost continuously with minor pyrite cubes at upper contact. Core recovery = 85%	4605	355	358	3.0	22.07		

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1  
 SHEET NUMBER 5 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
							% Fe		
358-361	ALTERED SEDIMENT - with some banded iron formation. Rock is streaky and a few pyrite cubes present.	4606	358	361	3.0		11.70		
361-376	BANDED IROM FORMATION - with almost continuous magnetite and very fine bands of carbonate. 90% core recovery.	4607	361	366	5.0		25.00		
		4608	366	371	5.0		21.94		
		4609	371	376	5.0		24.80		
376-380	ALTERED SEDIMENT - light grey green colour with abundant bluish coloured quartz eyes, and iron-rich amphiboles.	4610	376	380	4.0		4.16		

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1

SHEET NUMBER 6 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
						% Fe		
380-395.5	BANDED IRON FORMATION - bands	4611	380	385	5.0	11.62		
	separated by sediment sections	4612	385	390	5.0	17.39		
	(2" to 24" wide).	4613	390	395.5	5.5	17.08		
	Core recovery 95% plus.							
395.5-414	MASSIVE MAGNETITE - like 361-376	4614	395.5	399	3.5	23.42		
	with perhaps less magnetite, and short	4615	399	404	5.0	22.18		
	sections of interbedded sediments.	4616	404	409	5.0	21.18		
	Average width of sediments is 6".	4617	409	414	5.0	19.28		
	Core recovery over 95%.							
414-997	ALTERED SEDIMENTS AND MINOR BANDED IRON FORMATION -							
	typical banded I.F. with short sections of massive magnetite separated							



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1.....

SHEET NUMBER 7..... SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
						% Fe		
	by sediments. Some bands are	4618	414	424	10	12.24		
	composed of nearly solid magnetite	4619	424	434	10	9.20		
	while others are carbonate filled.	4620	434	444	10	16.80		
	Magnetite becomes very minor from	4621	444	454	10	24.17		
	576 to bottom. In places the	4622	454	464	10	18.95		
	sediments are very fine grained and	4623	464	474	10	18.12		
	have black carbonaceous material and	4624	474	484	10	13.29		
	silty portions,. Banding varies from	4625	484	494	10	14.63		
	30-65° as hole deepens due to	4626	494	504	10	15.73		
	flattening of drill hole.	4627	504	514	10	12.10		
	490 onward - rock becomes	4628	514	524	10	5.83		
	more chloritic.	4629	524	534	10	17.31		
	576 onward - I.F. becomes	4630	534	539	5.0	26.56		
		4631	539	549	10	14.72		



# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LTD. - Moody twp., Ontario HOLE No. 2

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED July 1/62

LATITUDE Line 8 1/2 S DATUM \_\_\_\_\_ COMPLETED July 24/62

DEPARTURE 11400 W. BEARING N. 50° E. ULTIMATE DEPTH 999'

ELEVATION \_\_\_\_\_ At collar = 60°; 200' = 47°  
 DIP 400' = 45°; 600' = 41°  
 800' = 40°; 975' = 37° PROPOSED DEPTH 1000'

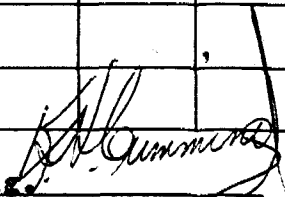
DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-198	OVERBURDEN - considerable difficulty with boulders and sand.								
198-472	ALTERED SEDIMENTS - grey rock with black-coloured sections where carbonaceous material present. In places lightly banded argillaceous, and silicified. Cherty layers between spotted (amphibole) sediments. Grey-wacke sections are pyritic and usually short up to 6" long. Black carbonaceous sections are								

NORTHERN MINER FORM 505 REV./54

DRILLED BY HEATH & SHERWOOD - Kirkland Lake

SIGNED \_\_\_\_\_

K. H. Cumming P. Eng.



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 2.....

SHEET NUMBER 2..... SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	very narrow - up to $\frac{1}{4}$ ".								
	257-259: likely a tuffaceous rock								
	with abundant feldspar fragments								
	(angular) and minor carbonate								
	fragments, quartz and pyrite								
	with some pyrrhotite.								
	303-315: sericitic - like a schist with elongated								
	quartz and feldspar fragments. Maybe								
	originally a tuff.								
472-493	SEDIMENTS - but now rock becomes a								
	greenish colour up to the I.F.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 2

SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
493-550	BANDED IRON FORMATION - lower grade than found in hole No. 1. Very Narrow sections with quartz and carbonate. Often shows slump structure (?) in bands of I.F. Rock has a faint greenish colour to it.								
550-596	ALTERED SEDIMENTS - I.F. peters out around here (550), and rock loses greenish-colour and reverts to grey colour as seen from 198-472. 556-567: 1 foot of I.F.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 2.....

SHEET NUMBER 4..... SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
596-614	BANDED IRON FORMATION - narrow sections with a lot of waste rock ROCK is very fine grained where argillaceous. Some greywacke and *spotted* (amphibole) rock present.								
614-678	SEDIMENTS - similar to 550-596 with minor sections of I.F. other than noted below. 621-633: iron formation 658-660: * * 673-678: Rock becomes greener in colour like from 472-493								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 2.....

SHEET NUMBER 5 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
678-699	IRON FORMATION - weak in grade and not as good-looking as found in hole No. 1.								
699-913	SEDIMENTS - greenish-colour with a few minor short sections of I.F. 670-673 greywacke 812-825 weak I.F.								
913-919	GREYWACKE - 2 feet of lost core								
919-999	SEDIMENTS								
999	BOTTOM OF HOLE								

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# DIAMOND DRILL RECORD

PROPERTY MISTANCO RIVER MINES LTD. - Moody twp., Ontario HOLE No. 3

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED July 27/62

LATITUDE Line 10 1/4 South DATUM \_\_\_\_\_ COMPLETED August 11/62

DEPARTURE 2400 West BEARING N. 50° E. ULTIMATE DEPTH 900'

ELEVATION \_\_\_\_\_ DIP At collar = 60°; 200' = 55°  
400' = 48°; 600' = 40°;  
800' = 38° PROPOSED DEPTH 1000'

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-139	OVERBURDEN - a lot of trouble getting casing down due to boulders, quicksand, etc.								
136-440	SEDIMENTS - predominantly hornblende streaked rock similar to holes No. 1 and 2, with some sections almost a sericite-schist. Originally, most of the rock was probably a greywacke. Quartz carbonate stringers and narrow stringers of pyrite and minor pyrrhotite are seen occasionally. Some sections are darkly coloured and talcose.								
440-485	ALTERED SEDIMENTS - around 440 rock becomes greenish-coloured with prominent hornblende (or iron-rich amphiboles) streaks. Similar to chloritic sections found above the iron formation in the first two holes. Small bands of I.F. occur at 459.5, 469.5, and 485								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Heath & Sherwood - Kirland Lake

SIGNED K.H. Cumming P. Eng. *K.H. Cumming*



# DIAMOND DRILL RECORD

PROPERTY \_\_\_\_\_ HOLE No. 3

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES				
485-501	IRON FORMATION - a few sections of "spotted rock" (hornblende or iron-rich amphiboles). A few stringers of carbonate are seen in the I.F. which is estimated to contain 15-20% Fe.									
501-553	SEDIMENTS - "spotted rock" with I.F. at following places: 509.5 -513 15% Fe estimated 515 -523 less than 15% 523 -553 minor I.F. sections would assay about 5% Fe in five foot sections									
553-577	IRON FORMATION - with abundant sections of amphibole "spotted rock" over short lengths. Would assay less than 15% Fe.									

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 3

SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
577-641	SEDIMENTS - look like altered greywacke, greenish-coloured, banded and streaky, with brecciation seen in some sections. A few quartz-carbonate bands are seen, and short sections of greywacke at: 634, 635, 636 and 638.								
641-648	GREYWACKE - VERY streaky and banded on both contacts. Mineralized with fine pyrite cubes. No definite grain gradation seen. to determine tops.								
648-656	ALTERED SEDIMENTS - probably originally greywacke. 648 -651 greenish and well banded 651 - 656 streaky								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 3  
 SHEET NUMBER 4 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
656-710	SEDIMENTS - "Spotted rock (amphiboles) with a few streaky chloritic sections. Banding is evident in places								
710-751	RECRYSTALLIZED GREYWACKE (?) - Rock is mottled and corroded-looking. Grey, green colour with a lot of quartz seen. Less mottled from 738 - 748								
751-798	IMPURE QUARTZITE - Hairline stringers of altered feldspars and carbonate are seen. Section mineralized with narrow pyrite stringers. A few bands of $\frac{1}{4}$ " wide bands of quartz cutting the core.								
798-900	SEDIMENTS - altered greywacke mostly. Almost a sericite schist through most of section. Grey colour with banding well displayed. Lost core from 816-825, 827-833, 834-846, 884-887, and 893-895.								

NORTHERN MINER FORM 503 REV./54

DRILLED BY.....

SIGNED.....



# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LTD., Moody Twp., Ontario HOLE No. 4

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED August 18/62

LATITUDE Line 84 South DATUM \_\_\_\_\_ COMPLETED August 26/62

DEPARTURE 19400 West BEARING S. 50° W. ULTIMATE DEPTH 968'

ELEVATION \_\_\_\_\_ DIP 400' = 57°; 600' = 52° PROPOSED DEPTH 1000'

800' = lost T.T.; 940' = 42°

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-100	OVERBURDEN - no difficulty in reaching bedrock.								
100-121	SEDIMENTS - altered greywacke likely. Spotted amphibole rock with minor short sections of Iron Formation at 100, 104-105.5, 113, and 118-119.								
121-137	BANDED IRON FORMATION - almost continuous magnetite which would assay about 20-25% Fe.								
137-146	SEDIMENTS - "spotted amphibole rock" - grey colour except from 139-146 where rock is bluish-coloured with some I.E. Estimate 139-146 would assay 5-8% Fe.								
146-151	IRON FORMATION - similar to 121-137, but not quite as much magnetite.								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Heath & Sherwood - Kirkland Lake

SIGNED \_\_\_\_\_

K.H. Cumming P. Eng.

*K.H. Cumming*

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 4  
 SHEET NUMBER 2 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	would assay $\pm 20\%$ Fe								
151-180	IRON FORMATION - with spotted sediments								
	151-159 estimate 10% Fe								
	159-180 estimate 15% Fe								
180-198	ALTERED SEDIMENTS - amphibole spotted rock with a few short I.F. bands, less than 10% Fe.								
198-209	IRON FORMATION - some short high grade sections and remainder poor grade Estimate Fe content at 15%								
209-212	GREYWACKE - some reddish coloured feldspars and minor pyrite mineralization.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 4  
 SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
212-230	IRON FORMATION-becomes chloritic and greenish coloured toward 230'. approximately 15% Fe								
230-346	ALTERED SEDIMENTS - (probably originally a greywacke). Some short sections of "spotted rock" and minor I.F. are seen. Rock displays banding and is greenish-coloured, and streaky-appearing in places.								
346-526	GREYWACKE - slightly altered, fine grained, bluish colour. Faint banding visible in places. 434-445) Abundant blue quartz eyes, diminishing 457-472) in size and frequency from 438-445 476-494 - normal greywacke, grey colour								
526-623	ALTERED SEDIMENTS - greywacke originally, brecciation of fragments								

NORTHERN MINER FORM 505 REV./54

DRILLED BY..... SIGNED.....

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 4

SHEET NUMBER 4 SECTION FROM ..... TO ..... STARTED .....

LATITUDE ..... DATUM ..... COMPLETED .....

DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....

ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	seen in places. Frequently amphibole spotted rock is seen. Bedding still visible, and a few narrow bands of I.F. are seen.								
623-626	GREYWACKE - quartz-feldspar-biotite fragments in a fine grained matrix.								
626-630	ALTERED SEDIMENT - greenish (chloritic), and very streaky at top contact								
630-632.5	GREYWACKE - similar to 623-626								
632.5-651	ALTERED SEDIMENTS - greenish, chloritic, streaky, with visible banding near start of section.								
651-924	GREYWACKE - greyish-colour, slightly altered, and schistose from 774-784 and 786-834.								



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 4.....

SHEET NUMBER 5..... SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	774-784 talcose and heavily brecciated								
	786-797 sericitic								
	797-834 badly brecciated and streaky, sericitic								
	834-839 mixture (narrow bands) of sediments -almost like varves, with grain gradation								
	849-854) streaky and brecciated with								
	865-878) quartz-carbonate stringers.								
924-968	CHLORITIZED SEDIMENTS - dark green sediments with abundant chlorite.								
968	BOTTOM OF HOLE								

# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LTD., Galna Twp., Ontario HOLE No. 5

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Sept. 9, 1962.

LATITUDE Line A DATUM \_\_\_\_\_ COMPLETED Sept. 28, 1962.

DEPARTURE 60°00 S. BEARING Azimuth = 321° T. ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP 400' = 54°; 600' = 50°; PROPOSED DEPTH \_\_\_\_\_  
800' = 51°; 1000' = 50°;

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-167	Overburden								
	167 - 192 is AX core								
	192 - 1001 is EX core								
167-204	Light grey volcanic with large feldspar phenocrysts with a few narrow quartz-carbonate veins. Around 204' the rock becomes greenish coloured and streaky, and phenocrysts occur less frequently.								
204-274	GREENSTONE - (Altered flow) with some quartz eyes. A few short talcy sections with sulphides - pyrite, pyrrhotite and minor chalcopyrite. 266-274 similar to 204-266 but not as badly altered.								
274-282	QUARTZ DIORITE - sharp contact at 274'								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 5

SHEET NUMBER 2 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
282-285	Greenish-grey volcanic with quartz-feldspar fragments.								
285-320	PERIDOTITE with minor serpentine fractures or slips - mottled looking. 301.5-302 fault (?), badly broken up core. 303-318 minor veins of pyrrhotite - no reaction from dimethyl								
320-354	SERPENTINIZED PERIDOTITE _ very streaky at start with some serpentine slips. Rock becomes darker coloured around 320' than previously.								
354-400	Similar to 285-320								
400-414	SERPENTINIZED ULTRABASIC (pyroxenite?) - streaky and badly broken up, likely a fault. A few cross fibre slips noticed (narrow 1/16" to hairline in width).								

# DIAMOND DRILL RECORD

PROPERTY \_\_\_\_\_ HOLE No. 5

SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
414-620	Similar to 285-320 and 354-400, with many picrolite veinlets and some chrysotile asbestos as slip fibre and minor cross fibre. Magnetite is present throughout section, with more present from 500-590. Very coarse grained rock and serpentized.								
	489-490 lost core - fault zone?								
	548- 1/8" chrysotile slip fibre								
	550 1/16" chrysotile cross fibre.								
	586-588 lost core - fault zone?								
	595-601 rock is darker and more massive looking with 5-10% magnetite.								
620-730	Sugary, greenish-coloured ultrabasic rock with a lot of olivine- DUNITE or olivine pyroxenite. Some very narrow chrysotile slips (cross fibre) present. Magnetite content from 2-5%. Picrolite veins seen rimmed with magnetite. Around 730, magnetite increases and rock								

# DIAMOND DRILL RECORD

PROPERTY \_\_\_\_\_ HOLE No. 5

SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	becomes darker coloured. This section is better looking host rock for asbestos mineralization than previous sections.								
730-825	OLIVINE PYROXENITE (or Dunite) - darker coloured than previously with approximately 5% magnetite. Some narrow picrolite slips and chrysotile slip fibre and cross fibre, but very narrow.								
825-862	PERIDOTITE - ("spotted rock") No asbestos fibre and minor magnetite.								
862-884	Similar to 730-825 with approximately 5% magnetite.								
884-897	Mixture of peridotite (spotted rock) and olivine pyroxenite (like 730-825)								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 5.....

SHEET NUMBER 5..... SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
897-968	OLIVINE PYROXENITE - with very narrow asbestos fibre slips. Dark colour with approx. 2-5% magnetite.								
968-1001	PERIDOTITE with brownish coloured pyroxene (bronzite ?) Magnetite present in minor amount, and rock becomes lighter coloured toward bottom of hole.								
1001	BOTTOM OF HOLE								



# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 6

SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED .....

LATITUDE ..... DATUM ..... COMPLETED .....

DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....

ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	503 - 504 ) No core recovered - possibly ground core with								
	510 - 516 ) some asbestos present, although rocks on either side								
	520 -521.5) do not show any evidence of this.								
536-557	DUNITE.- very coarse-grained, greenish translucent colour, tight rock with no asbestos except for -								
	540 - 541 ) a few thread veins in ser. peridotite.								
	546 -546.5)								
557-575.5	SERPENTINIZED PERIDOTITE - with short pyroxenitic sections.								
575.5-580.5	OLIVINE PYROXENITE OR DUNITE								
580.5-588	SERPENTINIZED PERIDOTITE - a few minor asbestos thread veins.								

NORTHERN MINER FORM 505 REV./54

DRILLED BY \_\_\_\_\_ SIGNED \_\_\_\_\_



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 6.....

SHEET NUMBER 3..... SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
588-595.5	DUNITE OR OLIVINE PYROXENITE.								
595.5-599.5	SERPENTINIZED PERIDOTITE.								
595.5-603	OLIVINE PYROXENITE								
	602 - A dozen or so cross-fibre slips at 60° to core axis.								
603-957	SERPENTINIZED PERIDOTITE - with 10-15% pyroxene								
	(bastite)								
	651-652 some very narrow thread veins-asbestos.								
	833 a few 1/16" cross-fibre slips								
	877.5-890 no core.								
	880-881 a few 1/32" cross-fibre slips								
	882.5-883.5 core missing.								





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REPORT ON A  
MAGNETIC & ELECTROMAGNETIC SURVEY  
IN STIMSON TOWNSHIP, ONTARIO  
ON BEHALF OF  
MISTANGO RIVER MINES, LIMITED

by

Robbert A. Bosschart, Ph.D., P.Eng.

Toronto, Ontario.

March 11, 1965.

## SUMMARY

The present magnetic and electromagnetic surveys have located two major conductive zones and several smaller ones.

One of the large conductors has magnetic correlation and has been shown by diamond drilling to be caused by sulphide mineralization. No further work has been recommended before completion of the geophysical survey.

HAROLD O. SEIGEL & ASSOCIATES, LIMITED  
GEOPHYSICAL CONTRACTORS AND CONSULTANTS

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"SEIGEO", TORONTO

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REPORT ON A  
MAGNETIC AND ELECTROMAGNETIC SURVEY  
IN STIMSON TOWNSHIP, ONTARIO  
ON BEHALF OF  
MISTANGO RIVER MINES, LIMITED

INTRODUCTION

During November and December 1964 a combined magnetic and electromagnetic survey was carried out on a property in Stimson and Mortimer Townships, Larder Lake Mining Division, Ontario, on behalf of Mistango River Mines, Limited.

The property consists of a number of small grids tied on to two larger grids (#2 and #3) which cover a number of strong airborne magnetic anomalies and were surveyed in 1963. More recently a series of airborne electromagnetic anomalies were found in the vicinity of the magnetic highs and the present survey covered some of these conductive zones.

The present report concerns the geophysical surveys as far as they have been completed to date. Some additional work is scheduled on grids 2A and 2F.

Traverse lines for the geophysical work were cut oriented approximately  $N67^{\circ}E$ , at 400' centres. Magnetometer and electromagnetic observations were taken at 100' intervals and at intermediate stations in disturbed areas.

Measurements of the vertical component of the earth's magnetic field were made with a Sharpe MF-1 fluxgate magnetometer. Appropriate corrections for diurnal variations were made by checking back periodically to base stations previously established.

The electromagnetic survey was carried out with the Turam method, using inductive energization. In this procedure the primary field is created by means of closed rectangular loops, and two receiving

coils connected to a compensator bridge are used to measure the field strength ratios and phase differences between consecutive stations. Sub-surface conductors give rise to secondary electromagnetic fields, causing abnormal field strength ratios and phase differences. The relative amplitudes of field strength and phase distortions are a measure of the conductivity of the conducting bodies, i. e. good conductors are characterized by field strength distortion combined with relatively little phase shifting, whereas poor conductors affect the phase, rather than the strength of the resultant field.

For an accurate grading the resistivity/thickness ( $r/d$ ) ratio of the individual conductors can be derived from the calculated in-phase and out-of-phase components. These values are marked on the upper right side of the anomalies. The depth to the current axis can be determined from the shape of the distortion and is marked on the lower left side. This depth should be regarded as the maximum depth to the upper surface of the conductor.

An operating frequency of 400 c. p. s. was used throughout the survey.

To date, 33.6 miles of profile were cut, 12.3 miles brushed out, 23.3 miles measured with the magnetometer, and 27.6 miles investigated with the Turam.

## GEOLOGY AND TOPOGRAPHY

The area is covered by Quaternary deposits and the bedrock geology is unknown. Topographic relief is moderate.

## DISCUSSION OF RESULTS

### A--Magnetometer Survey

Plate 1 presents the magnetic observations of grids 2B, C, D and E, - Plates 3 and 4 the observations on grids 2F and 3A, in the form of contour maps on a 1" = 400' scale. Plate 1 shows a number of relatively narrow N-S directed zones of moderate magnetic intensity, which are probably mostly due to basic intrusive formations. Some of the smaller anomalies, which correlate with electromagnetic anomalies, are caused, as recent diamond drilling has shown, by pyrrhotite.

On grid 3A magnetic observations were carried out on three traverses only, to supplement previous (Moreau, Woodard 1963) coverage.

The results indicate a continuation of the deep seated (probably ultrabasic) magnetic body.

#### B--Electromagnetic Survey

The results of the Turam survey are shown on plates 2 and 3 in the form of field strength ratio and phase difference profiles on vertical scales of 1" = 400'. The observations have been plotted at the midpoint between coil positions, for a 100' coil separation.

Two major N-S trending conductive zones occur in the area. The stronger and deeper conductor, east of the base line (grid 2E), represents the continuation of a previously located (Moreau, Woodard 1963) conductor which drilling (L95S) had shown to be a zone of graphitic schists, with minor amounts of sulphide mineralization.

The long conductive zone west of the base line shows comparably high conductivity ( $1 < r/d < 5$ ) and is also banded over most of its strike length. The overburden depth is appreciably smaller, around 100'. In some places a relatively weak magnetic expression (200-800 gammas) can be observed.

This conductor has been examined by diamond drilling on lines 67S, 79S, 83S, 87S, 91S, 99S and 111S, and sulphide (pyrite - pyrrhotite) mineralization encountered in all sections.

In the north part of the grid, near the base line, a weaker conductor of somewhat lower conductivity occurs. It is open to the south, where it approaches a zone of weak magnetic relief and some additional southward coverage is therefore scheduled.

The results of grid 3A show a N-S trending zone of deep conductors west of the magnetic body. The indicated conductivity is high ( $r/d \approx 2-2.5$ ). The conductors have no magnetic expression.

#### CONCLUSIONS AND RECOMMENDATIONS

Both major conductive zones in the area have been drilled. The single intersection in the eastern zone shows graphitic sediments with minor amounts of sulphide. The uniform character of the electromagnetic response and the absence of magnetic response over its considerable strike length render material differences of constitution in other parts of this zone unlikely. The western zone shows pyrite pyrrhotite mineralization in all sections. The pyrrhotite content appears to be directly

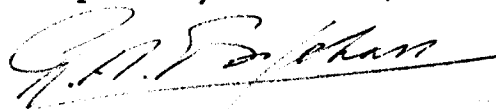
reflected in the magnetic expression. The electromagnetic response is not materially different from the eastern zone, except perhaps for the pattern, which suggests less continuity along the strike, or more variation of the thickness or the conductivity of the body.

The conductor near the base line does not appear of particular interest so far, but could become so if its southward extension would show magnetic correlation.

The conductive zone in grid 3A shows characteristics which strongly resemble the long graphitic conductor in grid 2.

No further drilling is recommended before the geophysical work is completed.

Respectfully submitted,



Robert A. Bosschart, Ph.D., P.Eng.

Toronto, Ontario.  
March 11, 1965.





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080

DD Report - Stimson Twp

DDH 1-9

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines - Stimson Twp. HOLE No. S # 1  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Nov. 1, 1964.  
 LATITUDE 87+00 S DATUM \_\_\_\_\_ COMPLETED Nov. 4, 1964.  
 DEPARTURE 9+00 W BEARING 580° W ULTIMATE DEPTH 142'  
 ELEVATION \_\_\_\_\_ DIP -55° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-100	Overburden								
100-127	Biotite Gneiss								
	Dark-grey, m.g., black lineated biotite								
	xls in a gray feldspathic matrix, gneissosity								
	0-5° to core axis.								
	102-103 qtz. stgr. along core with								
	hornblende xls up to ½" elongated								
	parallel to gneissosity lining stgr.								
	110½-112 ¼" qtz. stgr. along core (minor py & pyrr)								
	112½-113½ " " " " " (barren)								
	117½-119½ " " " " " (py & epidote)								
	126-126½ " " " " " (barren)								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros. SIGNED J. D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines - Stimson Twp HOLE No. S # 1  
 SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
127-134	Andesite								
	Light green inter. volc. f.g., massive								
	slightly metamorphosed, chloritic,								
	schistosity parallel core axis								
	131-134 white qtz. - carb stgrs. along core.								
134-142	Biotite Gneiss								
	same as 100-127, grey-black, m.g.								
	gneissosity parallel to core axis								
	137 $\frac{1}{2}$ -141 $\frac{1}{2}$ $\frac{1}{2}$ " qtz.-stgrs. with greenish - white								
	carbonate and minor py. along core								
	minor dragging of above stgr. at 139.								
142	End of Hole								

NORTHERN MINER FORM 505

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# DIAMOND DRILL RECORD

**PROPERTY** Mistango River Mines - Stimson Twp **HOLE No.** S # 2  
**SHEET NUMBER** 1 **SECTION FROM** \_\_\_\_\_ **TO** \_\_\_\_\_ **STARTED** Nov. 7, 1964.  
**LATITUDE** 87+00 S **DATUM** \_\_\_\_\_ **COMPLETED** Nov. 18, 1964.  
**DEPARTURE** 15+00 W **BEARING** N 70° E **ULTIMATE DEPTH** 605°  
**ELEVATION** \_\_\_\_\_ **DIP** - 55° **PROPOSED DEPTH** \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-115	Overburden					<u>Dip Tests 1 1/8" X 1 1/16" Dia.</u>			
						<u>Footage</u>	<u>Actual</u>	<u>True</u>	
115-124	Andesite			200'			61°00'	57°30'	
	dark green, f.g., inter. volc.			400'			52°30'	49°00'	
	white feldspathic banding at 60°			600'			47°30'	44°00'	
	schistosity slightly developed parallel banding								
124-253 1/2	Gabbro								
	Dark green, c.g., intrusive, basic								
	sharp chilled contact parallel banding								
	of above at 124'								
	124-135 f.g., chilled margin of gabbro.								
	249-253 1/2 massive dark grey chilled margin								
	of gabbro grading into below								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros. **SIGNED** J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Tango River Mines Ltd. - Stimson Twp HOLE No. S # 2  
 SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
253½-268	Garnetiferous ANDESITE								
	light green, inter. volc. flow,								
	white feldspathic banding 60-70°								
	small 1/8" pink garnet remnants								
	occas. calcite amygdules throughout								
	barren qtz. strgs. at 255-256, 257, 258								
268-274	Banded Andesitic Tuff								
	alternating dark green bands chloritic								
	material and characteristic reddish-brown								
	pyroclastic material, banding at 70°								
	occas. small 1/8" garnet remnants and								
	white feldspathic pyroclastic debris								

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines - Stinson Twp HOLE No. S. # 2  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
274-281	Garnetiferous Andesite								
	dark green, massive, f.g.								
	inter. chloritic volc. small 1/8"								
	garnet remnants, slight banding at 75°								
	1" qtz-carb stgr. at 275,								
281-314	Agglomeritic (Lapilli) Tuff								
	dark green f.g., volcanic ash matrix with								
	up to 1 inch elongated white qtz. and feldspar								
	lapilli parallel to schistosity, alternating bands								
	of chloritic and feldspathic material at 75°								
	much biotite developed along schistose planes								
	parallel banding, barren qtz. stgr. at								
	284, 289, 290 $\frac{1}{2}$ , 291, 296 $\frac{1}{2}$								

NORTHERN MINER FORM 505

DRILLED BY

Boyles Bros.

SIGNED

J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. - Stinson Twp HOLE No. S # 2

SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	299-301 amygdaloidal andesite, up to $\frac{1}{2}$ " calcite amygdules								
	313-313 $\frac{1}{2}$ diorite dyke, m.g., dark green sharp contacts at 75° parallel banding								
314-376	Banded Andesite								
	alternating bands or layers of dark green chloritized andesite, and black biotite, occas. white feldspathic banding at 75°, schistosity parallel banding at 75°								
	barren qtz. stgrs. at 317, 338, 345 $\frac{1}{2}$ , 346, 370 $\frac{1}{2}$ , 374								
	317 $\frac{1}{2}$ -318 $\frac{1}{2}$ light grey qtz.-carb stgrs. wth hornblende								
	353 $\frac{1}{2}$ -354 pink qtz. vein with minor pyrite, reddish-brown garnets								
376-378	Garnetiferous Andesite								
	same as 274-281								

NORTHERN MINER FORM 508

DRILLED BY

Boyles Bros.

SIGNED

J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines - Stimson Twp HOLE No. 8 # 2  
 SHEET NUMBER 5 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
378-455	Biotite Gneiss								
	biotite well developed throughout, occasional								
	unaltered dark green andesite sections,								
	gneissosity at 75°, white feldspathic banding								
	parallel gneissosity,								
	390½-391 pink pegmatite dyke, a.g. xls, minor py								
	395 2" barren qtz, stgr.								
	445-455, light green, silicified gneiss								
455-460½	Feldspar Porphyry								
	light grey-pink, white 1/8" feldspar								
	sharp contact parallel core at 455'								
	gradational into below at 460½								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros. SIGNED J.D. Harvey



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines - Stinson Twp HOLE No. 8 # 2  
 SHEET NUMBER 6 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
						Cu	Ni		
	porphyry intrusive diss. py, blue mineral								
	" " " "	#2901	455.0	457.5	2.5	Nil	Nil		
	" " " "	#2902	457.5	460.6	3.1	Nil	Nil		
460 1/2 - 474 1/2	Massive sulphides								
	very siliceous, acid host rock								
	interlocking quartz, mainly pyrr.								
	Some blue mineral and minor py.								
	massive pyrr. blue mineral	#2903	460.6	463.2	2.6	Tr.	Tr.		
	silc., acid host rock, diss pyrr	#2904	463.2	466.5	3.3	Tr.	Nil		
	massive pyrr, blue mineral, highly silc	2905	466.5	468.5	2.0	.01	Tr.		
	" " " " " "	2906	468.5	470.0	1.5	Tr.	Nil		
	" " " " " "	2907	470.0	473.0	3.0	.01	Nil		
	" " " " " "	2908	473.0	474.5	1.5	.01	Nil		
	1" qtz.-carb strg. @ 473.2								

NORTHERN MINER FORM 808

DRILLED BY Boyles Bros. SIGNED L.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines - Stinson Twp HOLE No. S. # 2  
 SHEET NUMBER 7 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
						CU	NI		
474½-500	Garnetiferous Peridotite black, c.g., ultrabasic intrusive much hornblende, some biotite large pink garnet xls up to ¼" elongated parallel schistosity at 70° massive pyrr	#2909	474.5	476.0	1.5	Tr.	Nil		
	493½-495) inclusions banded andesite								
	496½-498½) light green, some 1/4" garnet remnants								
500-605	Banded Andesite Same as 314-376, banding at 75° barren qtz. stgrs. at 520½, 542, 543½, 590-596½, 582½ above peridotite tongues at 541-541½, 551-552, 554-555½								
605	End of Hole								

NORTHERN MINER FORM 808

DRILLED BY \_\_\_\_\_

Boyles Bros.

SIGNED \_\_\_\_\_

J. D. Harvey



# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 3  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Nov. 22, 1964.  
 LATITUDE 831003 DATUM \_\_\_\_\_ COMPLETED Nov. 25, 1964.  
 DEPARTURE 14150 W BEARING N 70° E ULTIMATE DEPTH 501'  
 ELEVATION \_\_\_\_\_ DIP 55° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
0-90	Overburden					Dip Tests (1 1/8" X 1 1/16" Dia.)		
						<u>Footage</u>	<u>Actual</u>	<u>True</u>
90-202 1/2	Gabbro			200'		60° 00'	56° 30'	
	dark green, c.g., basic intrusive			400'		51° 30'	47° 30'	
	slightly magnetic, unaltered							
	90-99 m.g., hanging wall chilled margin of above							
	193-202 1/2 m.g., dark grey chilled festwall contact of gabbro grading into below.							
202 1/2-226	Agglomeritic (Lapilli) Tuff							
	dark green, f.g. inter. volc. ash matrix with white elongated quartz and feldspar pyroclastic fragments (lapilli) up to 1/4".							

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros

SIGNED \_\_\_\_\_

J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY MISTAGO RIVER-STINSON Twp. HOLE No. 273

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	<p><b>Occas. Banded sections of reddish-brown (214'-220')</b>  <b>tuffaceous material and also occas. white felds pathic</b>  <b>banding all at 75° to core contact at 226 marked by large</b>  <b>elongated 1" white qtz. lapilli (matrix comprises only 10%)</b></p>								
<b>226-227</b>	<p><b>ASBESTITE</b>  <b>DARK GREEN, F.G. AFTER VOLC. OCCAS. WHITE</b>  <b>PATHIC BANDING AT 75° DEVELOPED ALONG SCHISTOSITY BANDING</b>  <b>QTZ. STONS. AT 228, 230, 241-241½, 242-243 pink, C.G.</b>  <b>PERMITTIC, QTZ.-FELDSPAR VEINS WITH REDDISH-BROWN GARNETS</b></p>								

# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER-STINSON Twp. HOLE No. 873

SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
<b>287-356</b>	<b>BANDED ANDESITE</b>  dark green-brown, f.g., inter volc. well  banded with alternating reddish-brown and white feldspathic material at 75° some biotite developed along schistosity barren qtz strgs at 296, 299½, 300, 301, 304½ 351½, 350, 356 small white pyroclastic qtz. fragments elongated parallel to schistosity 356½  2" green-white qtz-epidote strg. with minor py & reddish-brown garnets								
<b>356-375½</b>	<b>ANDESITE</b>  DARK GREEN, F.G., INTER VOLC. ONLY OCCAS.  BANDING OF WHITE FELDSPATHIC MATERIAL AT 75°								

NORTHERN MINER FORM 505

DRILLED BY Raylan Brown

SIGNED \_\_\_\_\_

**J.D. Harvey**

# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER-STIBSON Twp. HOLE No. 373

SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	barren qtz. strgs. at 365½, 372½								
375½-380	<b>FELDSPAR PORPHYRY</b> dark grey feldspar, n.g. intrusive dike with white 1/8" feldspar phenocrysts, much biotite scattered throughout 375 barren qtz. str.								
375½-400	<b>MASSIVE ANKERITE</b> Same as 387-388, 375½-378½ small 1/16" white calcite amygdalae 400' 3" barren qtz vein								

NORTHERN MINER FORM 505

DRILLED BY

**Boyles Bros.**

SIGNED

**J.D. Harvey**

# DIAMOND DRILL RECORD

PROPERTY MISTAGO RIVER - STINECK Twp. HOLE No. 843  
 SHEET NUMBER 5 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
<b>406-426</b>	<b>BIOTITE GNEISS</b>								
	dark green-black, f.g., biotitic gneiss								
	gneissosity 75° to core 414-414½, 424-424½								
	black, n.g. garnet ferrous peridotite								
	(reddish-brown garnets) 415-415½ barren white								
	qtz. vein with reddish brown garnets & hornblende xls lining walls								
<b>426-429</b>	<b>MASSIVE SULPHIDES</b>								
	light grey, f.g. silc. host rock mainly								
	pyrr. but some py along contacts 426.0-427.5 massive py & pyrr.								
	#2910 426.0 427.5				1.5'		.02	nil	
	some graphite, much qtz.								
	427.5-429.0 massive pyrr. barren qtz.								
	429-429.5	#2911	427.5	429.0	1.5'		.02	nil	

NORTHERN MINER FORM 505

DRILLED BY Boyles & Bros. SIGNED J.D. Harvey



# DIAMOND DRILL RECORD

PROPERTY MISTAWIC RIVER-STENSON HOLE No. S23

SHEET NUMBER 6 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
429-437	<b>GABBRO</b>								
	dark green, f.g. inter volc. with small								
	1/8" pink garnet remnants occur. white feldspathic								
	banding at 75° 431-432½, 433-437½, 438-439½								
	<b>GABBRO</b> large 1/4" pink								
	granite in black ultra basic, e.g. intrusive								
437	<b>GABBRO</b>								
	dark green, f.g. inter volc. occur banding at								
	75° barren qtz strgs at 473, 474 occur, sections where								
	biotite well developed along schistosity								

NORTHERN MINER FORM 505

DRILLED BY Daylan Bros. SIGNED J.D. Harvey

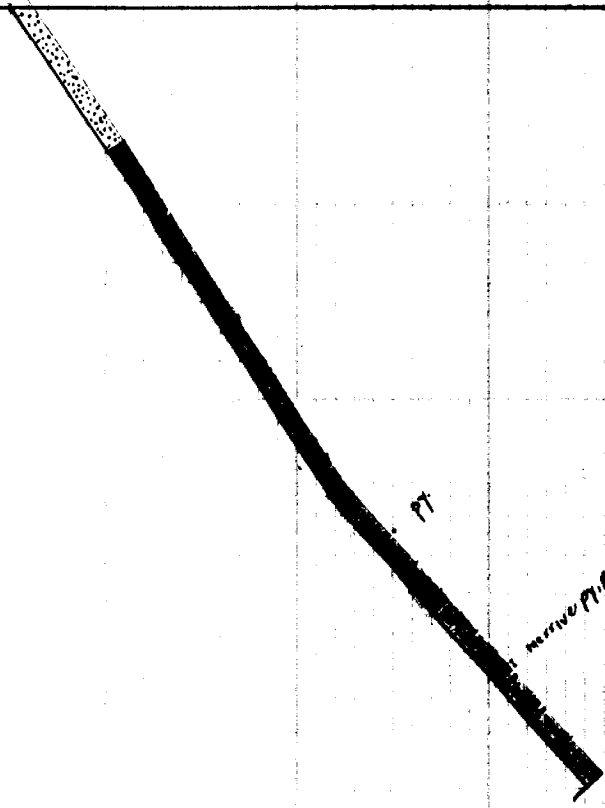


MISTANGO RIVER MINES  
STIMSON TWP.

DDH 5 #3  
SECTION 83+005

15700W  
14400W  
13100W  
12200W  
11700W

SURFACE



SCALE: 1" = 100'

Dec. 2/64 J. D. Hawley

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines - Scinson Twp HOLE No. S # 5  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Dec. 4, 1964.  
 LATITUDE 91+00 S DATUM \_\_\_\_\_ COMPLETED Dec. 10, 1964.  
 DEPARTURE 14+50 W BEARING N 70° E. ULTIMATE DEPTH 606'  
 ELEVATION \_\_\_\_\_ DIP -55° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-150	Overburden					Dip Tests (1 1/8" X 1 1/16") d			
					<u>Footage</u>	<u>Actual</u>	<u>True</u>		
150-233	Gabbro			200'		61° 00'	57° 30'		
	dark green, c.g., basic intrusive			400'		55° 00'	51° 30'		
	slightly magnetic, slips parallel core axis			600'		47° 30'	44° 00'		
	225-233 f.g., green-black, massive								
	chilled marginal phase, gradational								
	contact into below								
233-285	Agglomeritic (Lapilli) Tuff								
	dark green, f.g., inter volc ash matrix								
	with white elongated quartz & feldspar								
	pyroclastic fragments (lapilli) up to 1"								
	pecc. white feldspathic banding 95°-80°								
	barren Qtz. strgs. at 234, 234½, 266, 267								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros.

SIGNED

J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines - Stinson Twp HOLE No. S # 4  
 SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	243-252 altered section, reddish-brown feldspathic material, much hornblende 40% white qtz.-carb stgrs.								
285-324	Andesite dark green, f.g., massive, well sheared inter volc. much biotite developed along schistose planes, occas. white feldspathic banding at 75°, barren qtz. stgrs. at 286 289½-290, 291-py., 296, 296½, 306½, 313, 320½								
324-341	Biotite Gneiss brown-black, mg. gneissosity 75-80°, occas. well dragged white feldspathic banding parallel gneissosity								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros. SIGNED J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Top HOLE No. S # 4  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
341-353	Agglomeritic (lapilli) Tuff								
	Same as 233-285 only more sheared with								
	much biotite developed parallel schistosity at 75°								
	5% white feldspathic banding at 75°								
	barren qtz. strg 30° to core at 351'								
353-392½	Banded Tuffaceous Andesite								
	dark green, f.g., tuffaceous inter volc.,								
	occas. white elongated qtz lapilli as above								
	flow top contact at 353								
	white feldspathic and brown biotitic banding at 75°								
	353-361 heavy biotite, n.g., developed along schistose planes								
	barren qtz. strgs. at 358, 359½, 366½, 369½								
	383-389½, 391½, 390½								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros. SIGNED J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Nistango River - Stinson Top HOLE No. S # 4  
 SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
353-408.2	Biotite Gneiss								
	same as 324-341, gneissosity at 75°								
	353½-354½ black f.g., peridotite dyke								
	with 1/16" pink garnet remnants, some								
	pyrite (5%) in light grey siliceous matrix								
	398½ 1" etz.-carb. str. with pyrr.								
408.2-428.2	Massive Sulphides								
	30% py. & pyrr., with minor zr. and cpy.								
	host rock is black, n.g., ultrabasic (peridotite)								
	with abundant pink garnet remnants up to 1/8"								
	silicification around sulphides throughout, occas. chloritization								
	around peridotite, sulphides banded parallel schistosity								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros.

SIGNED

J.B. Harvey

# DIAMOND DRILL RECORD

PROPERTY Nistango River - Stinson Top HOLE No. S # 4  
 SHEET NUMBER 5 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
						CU. ZN	PG. NI	AG. AS	C
	massive f.g. py&pyrr, some silicification								
		2913	408.0	411.0	3.0				
	mainly banded py. n.g., in black peridotite								
	matrix, some f.g. pyrr. around py.	2914	411.0	413.3	2.3				
	50% massive f.g. pyrr. 10% banded py	2915	413.3	415.3	2.0				
	minor zn & cpy, light grey silc. matrix								
	10% sulphides, mostly py. in peridotite	2916	415.3	418.0	2.7				
	mainly 20% n.g. banded pyrite,	2917	418.0	422.2	4.2				
	some pyrr., in peridotite matrix								
	40% sulphides, massive pyrr and	2918	422.2	424.5	2.3				
	py in light grey siliceous matrix								
	30% sulphides, massive f.g. pyrr	# 2919	424.5	428.3	3.8				
	and banded n.g. py in peridotite #								
	matrix								

NORTHERN MINER FORM 505

DRILLED BY

Boyles Bros

SIGNED

J.D. Harvey



# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Tap HOLE No. S # 4  
 SHEET NUMBER 6 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
428.2-606	Banded Tuffaceous Andesite								
	Same as 353-392½, dark green, brown sections where much biotite developed along schistose planes, feldspathic & biotitic banding at 75°								
	428.2-450 garnetiferous andesite, small 1/8" garnet (pink) remnants								
	443-449½ black, m.g., peridotite with 1/8" garnets some py & minor pyrr.								
	449½-445 garnetiferous peridotite with 5% py. & minor pyrr.								
	466-466½ garnetiferous peridotite, no sulphides								
	428.2-456 diss. py developed throughout barren etc. sters. at 458, 464, 549, 570½, 585½, 588½								
	490-512 brown biotite rich, gneissic section								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros. SIGNED J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Scinson Tap HOLE No. S # 4  
 SHEET NUMBER 7 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	522 2" green-white qtz. stgr. py & hornblende								
	526-534 same as 490-512								
	barren qtz.-carb. stgrs. with muscovite								
	533, 537, 537½, 538, 543								
	555-565 biotite & hornblende gneiss, quartzite matrix								
	597-599 pink pegmatitic qtz.-carb va, biotite & muscovite								
	xls, pink felds., hornblende, minor pyrite, contacts								
	host rock well dragged about core axis around vein								
	3% sulphides, mainly py, biotitic andalusite								
		2920	428.3	433.0	4.7				
	" " " " " "	2921	439.0	438.0	5.0				
	" " " " " "	2922	438.0	443.0	5.0				
	" " " " " " peridotite matrix	2923	443.0	446.0	3.0				
	" " " " " " biotitic andalusite	2924	446.0	450.0	4.0				

NORTHERN MINER FORM 505

DRILLED BY \_\_\_\_\_

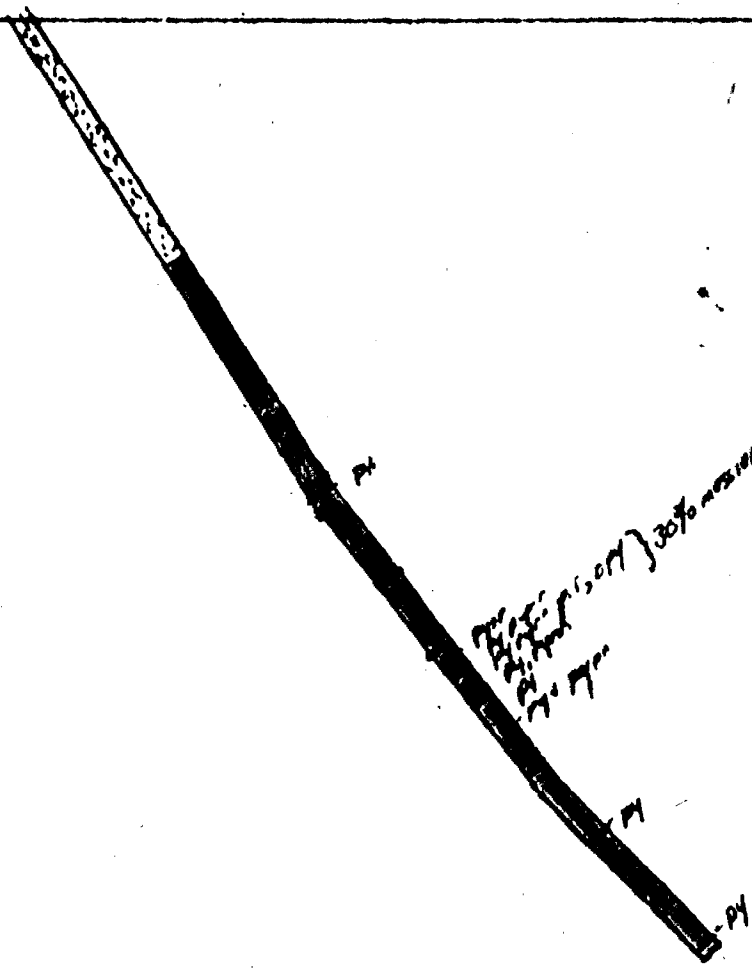
SIGNED \_\_\_\_\_

MISTANGO RIVER MINES  
STIMSON TWR

DDH S#4  
SECTION 91005

15400W  
14400W  
13400W  
12400W  
11400W

SURFACE



SCALE: 1"=100'  
Dec 15/04 J. H. King

# DIAMOND DRILL RECORD

PROPERTY Nistango River - Stinson Trp HOLE No. S # 6  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Dec. 14, 1964  
 LATITUDE 99+00 S DATUM \_\_\_\_\_ COMPLETED Dec. 20, 1964.  
 DEPARTURE 14+00 W BEARING N 70° E ULTIMATE DEPTH 600'  
 ELEVATION \_\_\_\_\_ DIP - 55° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
0-110	Overburden					Dip Tests (1 1/16" x 1 1/8")		
					<u>Feet</u>	<u>Actual</u>	<u>True</u>	
110-154½	Gabbro			200'	59° 30'	56° 00'		
	dark green, a.g., intrusive basic			400'	51° 30'	47° 30'		
	145-154½ green, black, f.g., chilled margin			600'	48° 30'	45° 00'		
	sharp contact at 154½							
154½-163½	Rhyolite							
	light green, f.g., acid volc. flow white							
	feldspathic banding 45° to core							
163½-219	Banded Tuffaceous Andesite							
	dark green, f.g., inter. volc. flow							
	stream biotitic banding 45° to 175', then 60°							

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros

SIGNED A. D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango - Stinson Top HOLE No. \_\_\_\_\_

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	176-178 Light grey, f.g., silic. volc.								
	181½-183 barren white qtz. vein								
	213-214 grey feldspar porphyry dike								
	196-202) biotite well developed along								
	210-216) schistose planes - gneissic								
	barren qtz-epidote strgs. at 188, 189½, 191, 192								
219-230	Agglomeritic (lapilli) Tuff								
	dark green, f.g., inter- <del>mic.</del> ash matrix								
	white elongated qtz. & feld. pyroclastic fragments up to ¼"								
	white feldspathic & brown biotitic banding at 75°								
230-244	Banded Tuffaceous Andesite								
	same as 163½-219, banding at 75°, much biotite.								

NORTHERN MINER FORM 505

DRILLED BY Bayles Bros.

SIGNED J. D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Nistango River- Stinson Top HOLE No. S # 6  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
244-302½	<b>Agglomeritic (Lapilli) Tuff</b> same as 219-230, almost a biotite gneiss but lapilli remnants preserved throughout 303-304 granitic porphyry dike barren Qtz. strgs at 275½, 281½, 290½								
302½-351	<b>Biotite Gneiss</b> mainly brown-black biotite, gneissosity at 75° barren Qtz. strg. at 342.								
351-363	<b>Agglomeritic (Lapilli) Tuff</b> same as 219-230, well sheared with much biotite along schistose planes at 75° barren Qtz. strg. at 363.								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros. SIGNED J. D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 6  
 SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES						
						AU	AG	CU	NI	PG	ZN	C
363-431	Banded Tuffaceous Andesite											
	Same as 163½-219, occas, elongated up to 1" white pyroclastic lapilli remnants											
	brun biotite & white feldspathic banding at 70°											
	387-390½ pink, f.g., granite porphyry dike											
	396-396½ barren qtz-muscovite vein											
	barren qtz. strgs. at 402, 420½, 426											
	biotite throughout along schistose planes											
	slips along core at 377, 382											
431-445.9	Qtz.-Feldspar Porphyry											
	f.g., porphyritic, qtz. & feld. phenocrysts											
	also muscovite, hornblende, pink garnets											
	minor py	#2925	440.0	445.9	5.9							

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros

SIGNED J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Tap HOLE No. S # 6  
 SHEET NUMBER 5 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES						
						AU	AG	CU	NI	PG	ZN	CI
445.9-520.0	Sulphide Zone											
	light grey, f.g., well silicified											
	volc. host rock, sulphides mainly py & pyr.											
	as below, garnetiferous peridotite dikes											
	throughout apparently introducing sulphides											
	disseminated py. some pyr	#2926	445.9	449.4	3.5							
	75% sulphides, mainly pyr, peridotite	2927	449.4	452.6	3.2							
	matrix											
	30% sulphides, mainly py, black silc.	#2928	452.6	455.0	2.4							
	perid.											
	barren host rock, minor py	#2929	455.0	458.9	3.9							
	5% sulphides, mainly py, grey, silc. volc	2930	458.9	462.9	4.0							
	banded py in dark grey silc. volc.	2931	462.9	467.2	4.3							
	same as #2931	#2932	467.2	473.0	5.8							
	barren host rock, diss minor py	#2933	473.0	477.0	4.0							
	same as #2933	#2934	477.0	481.1	4.1							

NORTHERN MINER FORM 505

DRILLED BY

Boyles Bros.

SIGNED

J. B. Harvey



# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 6

SHEET NUMBER 6 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES						
						AU	AG	CU	NI	PG	ZN	C
	70% sulphides, mainly pyrr. gray host bolc.	#2935	481.1	484.3	3.2							
	diss py in grey silic. volc.	#2936	484.3	485.7	1.4							
	Same as #2935	#2937	485.7	487.7	2.0							
	Same as #2935	#2938	487.7	489.8	2.1							
	diss. py. & pyrr in grey silic. volc.	#2939	489.8	493.1	3.3							
	70% sulphides, mainly pyrr. in black porid.	#2940	493.1	494.5	1.4							.12
	banded py & qtz stringers in silic volc	#2941	494.5	500.0	5.5							
	barren host rock	#2942	500.0	504.0	4.0							
	same as #2942	#2943	504.0	508.2	4.2							
	same as #2935	#2944	508.2	512.5	4.3							.10
	same as #2935	#2945	512.5	516.6	4.1							.16
	same as #2939	#2946	516.6	520.0	3.4							.20
	diss py in grey garnetiferous andesite	#2947	520.0	523.0	3.0							

NORTHERN MINER FORM 505

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# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 6  
 SHEET NUMBER 7 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
520-546	<b>Banded Garnetiferous Andesite</b>  dark green, f.g., inter volc. with 5-10% pink up to 1/8" garnet remnants throughout brown biotitic banding at 35° barren Qtz. strgs. 529 533-540 core all broken, many slips & shears								
546-600	<b>Banded Andesite</b>  as 520-546 but no garnets present brown biotitic & white feldspathic banding at 45° 567-572 light grey silic. bands with white feld. pyroclastic x/lis (crystals Tuff Horizon) 577-579 black, mg. ultrabasic (peridotite) with pink garnets. 587-588 up to 1" sporadically distributed, garnets also in andesite adjacent 594-600 To contacts which are sharp parallel banding								

NORTHERN MINER FORM 505

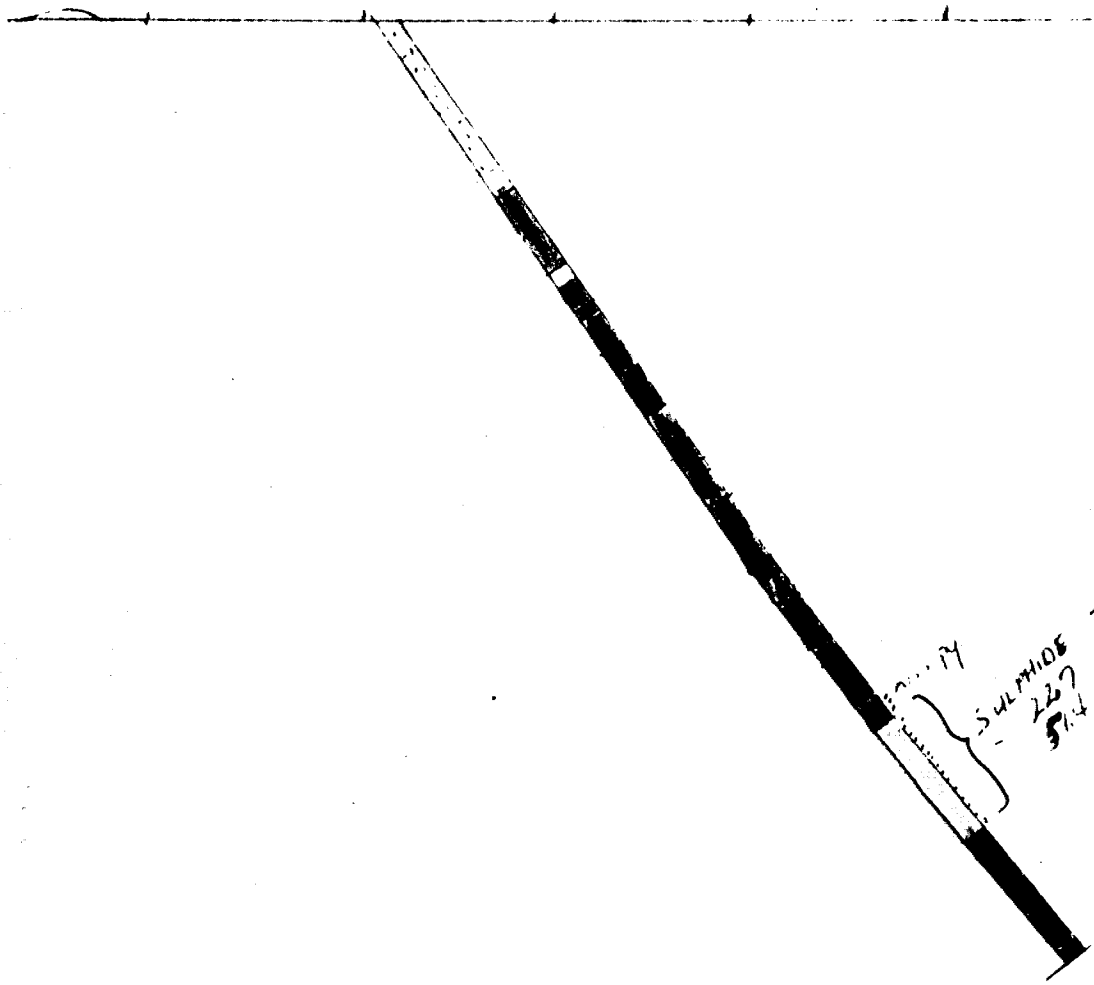
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STIMSON T-11

SECTION 11400 S

15100W  
14100W  
13100W  
12100W  
11100W

SURFACE



SULPHIDE ZONE  
 MASSIVE PYR SPY 70%  
 DISS PY 41400W

SCALE 1" = 100'

Dec 28/64 J.L. Henney

# DIAMOND DRILL RECORD

PROPERTY **MISTANGO RIVER - Stinson Twp.** HOLE No. **807**

SHEET NUMBER **1** SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED **Jan. 5, 1963**

LATITUDE **111-00 S** DATUM \_\_\_\_\_ COMPLETED **Jan. 15, 1963**

DEPARTURE **15-50 W** BEARING **N 70° E** ULTIMATE DEPTH **696**

ELEVATION \_\_\_\_\_ DIP **-50°** PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
0-137	Overburden		Dip tests ( 1 1/8" x 1 1/8" x 1 1/16" dia)					
						<u>Footage</u>	<u>Actual</u>	<u>True</u>
137-253	Agglomeritic (Lappilli) tuff dark green			200'		54° 00'	56° 30'	
	inter volcanic tuff, up to 1/2" elongated			400'		44° 00'	40° 30'	
	white qtz-fold, pyroclastic fragments brown			600'		40° 30'	37° 00'	
	biotitic banding at 70° 153- 3" barren qtz.							
	str. 150 1/2 - 1/2" qtz-fold lappilli with minor py.							
	barren: qtz strgs at 165, 176 1/2, 177 1/2,							
	180 1/2, 184 231 1/2 232 1/2 occasional light							
	green, f.g. well banded narrow, cherty							
	sections full throughout 190 - 215 105							
	white fold apathic banding at 60° 219-220							
	light green, silicified tuff.							

NORTHERN MINER FORM 505

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SIGNED

**J.D. Harvey**

# DIAMOND DRILL RECORD

PROPERTY MISTAKO RIVER- Stinson Twp. HOLE No. 807

SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
153-295	<b>Banded Tuffaceous Andesite</b>								
	dark green, f.g. inter volcanic flow a								
	few white elongated, lappilli, white feldspathic and brown biotitic								
	banding at 80° to 200', 70° there after								
	250-280 garnet; ferrous peridotite, small								
	1/8" pink garnet remnants 284- barren qtz								
	str. 270-270 1/2- barren qtz. vn.								
295-324	<b>BIOTITE GNEISS</b>								
	mainly brown-black biotite, orientated								
	parallel gneissosity at 70° concs.								
	vn-altered sections inter volc. with								
	much biotite along schistose planes								
	2 1/2-4" pink qtz-fold perthry dike, sharp contacts parallel								
	gneissosity which is well dragged about dike on footwall side								

NORTHERN MINER FORM 505

DRILLED BY Boyles Bros. SIGNED J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY MISTANOQ RIVER- Stinson Twp. HOLE No. S # 7

SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
324-354	Banded tuffaceous andesite same as 253-295, much brown biotitic banding at 70°								
	335-359 - 10% white feldspathic banding at 70 barren qtz strgs at 343, 344½, 349½								
359-376	Agglomeritic (lapilli) tuff same as 137-253, brown biotitic banding at 70 lapilli smaller up to 1/8" and more numerous than previously and lined parallel schistosity								
376-430	Banded tuffaceous andesite same as 253-295, much white feldspathic banding at 70° only occurs, sections brown biotitic banding occurs elongated white lapilli, barren white qtz strgs at 391, 393½, 403, 424½								

NORTHERN MINER FORM 505

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# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER-Stinson Twp. HOLE No. 8 # 7

SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
430-500	Agglomeritic (lapilli) tuff same as 137-253, white feldspathic banding at 70° barren white qtz. str. at 437.								
454-485	DACITE light green, f.g. acid-inter volc. flow much white feldspathic banding at 70° slightly chloritic with biotitic developed along schistose planes barren qtz str. at 459, 478, 479								
486-493	Sulphidic zone in rhyolite light gray, f.g. siliceous volc. matrix, 30% sulphides mainly pyrr. mainly diss. pyrr. some py. 2942, 492.8, 490.0, 4.5 narrow bands massive pyrr. in sil. volc. 2949, 490.0, 493.0, 3.0								

NORTHERN MINER FORM 505

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# DIAMOND DRILL RECORD

PROPERTY MISTANDO RIVER-Stinson Twp. HOLE No. 807

SHEET NUMBER 5 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
483-500½	<b>DACITE</b>								
	<b>SAME AS 484-485½, slightly more siliceous</b>								
	<b>massive with 10% qtz stingslets in all directions throughout</b>								
	<b>primary banding at 70° 485-487½ ¼" qtz strgs. 10°</b>								
	<b>to core axis with minor py. &amp; pyr. some muscovite</b>								
500½-540	<b>SULPHIDE ZONE IN METOLITE</b>								
	<b>light grey, f.g., silicified volc. host rock, same as</b>								
	<b>488½-493, 40% massive pyr. &amp; py., some qtz. 2000, 500.0, 503.5, 3.0</b>								
	<b>fine pyr. &amp; py. in acid volc. 2001, 503.5, 505.0, 4.5</b>								
	<b>same as 2001, 2002, 505.0, 513.7, 5.7</b>								
	<b>30% massive pyr. some qtz. 2003, 513.7, 515.7, 3.0</b>								
	<b>70% massive f.g. pyr. 30% qtz. fragments 2004, 515.7, 515.1, 2.4</b>								

NORTHERN MINER FORM 505

DRILLED BY \_\_\_\_\_

**Boyles Bros.**

SIGNED \_\_\_\_\_

**J.D. Harvey**



# DIAMOND DRILL RECORD

PROPERTY NISTANGO RIVER-Stinson Twp. HOLE No. 8 # 7

SHEET NUMBER 6 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	diss. pyrr & py, 518.4-518.7 graphite	2955	518.1	520.0	1.9				
	pink qtz-feld. porphyry dike, diss. py & pyrr.	2956	520.0	522.6	2.5				
	30% pyrr in acid volc.	2957	522.5	525.7	3.2				
	30% pyrr. , minor py & qtz.	2958	525.7	528.5	2.8				
	same as #2958 mainly qtz, pink feld, diss py	2959	528.5	530.5	2.3				
	& pyrr. 70% f.g. pyrr. minor py & qtz.	2960	530.5	534.6	3.2				
	banded py & pyrr. in grey-black acid volc.	2961	534.6	538.1	3.5				
		2962	538.1	540.0	1.9				
<b>540-545</b>	<b>SULPHIDE ZONE IN PERIDOTITE</b>								
	70% pyrr, blue-black peridotite	2963	540.0	542.5	2.5				
	same as # 2963	2964	542.5	545.0	2.5				

NORTHERN MINER FORM 505

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# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S #7

SHEET NUMBER 7 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
5450554	<b>Biotite Gneiss</b>								
	gneissosity at 70°, brown-black, gr. biotite orientated parallel gneissosity;								
	545-546 light grey silc. section adjacent to sulphide zone, some disc. py.								
	555½-559 increasing amount towards contact of small								
	1/16" white calcite amygdules - possible flow top.								
557-	559-up to 1" large white elongated qtz. feld. pyroclastic								
	fragments about which gneissosity wrapped.								
559-588	<b>Banded Tuffaceous Andesite.</b>								
	dark green, f.g., inter. volc. tuff, almost a crystal tuff due to								
	numerous narrow sections 1/16" small white pyroclastic fragments								
	between brown biotitic banding at 70°								
	banding flattens to 0° at 574 where slips occur along core to 575'								
	banding steepens thereafter again to 70° at 580'								

NORTHERN MINER FORM 505 REV./54

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# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 7  
 SHEET NUMBER 8 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	occas. siliceous volc. sections with diss. pyrr.								
	massive sulphide strgs. mainly pyrr. at 565.2, 564.0-564.3, 573.0, 573.5.								
	571'-1" barren qtz. strg. also at 587'								
	586-588 small 1/8" pink garnets from below								
	gradational contact at 588'								
588-624	Garnetiferous Peridotite								
	black, n.g., ultrabasic intrusive, large elongated								
	up to 1/2" pink garnet remnants								
	596-599, 6-4-607 biotitic gneiss sections								
	biotite orientated parallel gneissosity at 75°								
629 1/2-646	Biotite Gneiss								
	Same as 545-559, gneissosity at 75°								

NORTHERN MINER FORM 505 REV./54

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# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S 4 7

SHEET NUMBER 9 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	gradational contacts into above & below								
	643-644½ light grey, silic. volc., c.g. biotite throughout								
646-696	Peridotite								
	646-658 garnetiferous same as 588-629½								
	much biotite in places, almost gneissic eg. 660-665, 675-687½								
	647½-648 pink qtz.-feld porphyry dike, barren								
	658-687½ green-black peridotite, garnets not visible to naked eye								
	687½-696 very siliceous, f.g., mostly qtz.-feld, & black hornblende segregat								
	into layers or bands, gneissic structure, at 85° to core								
	large up to ½" oval, elongated parallel layering, pink garnets								
	barren qtz.-stgr. at 670½, 673, - 1" massive pyrr. stgr. at 671"								
696	End of Hole								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Boyles Bros.

SIGNED \_\_\_\_\_

J.D. Harvey

MISTANGO RIVER MINES  
STIMSON TWP

DP 4 S 17  
SECTION 11400

16400W

15700W

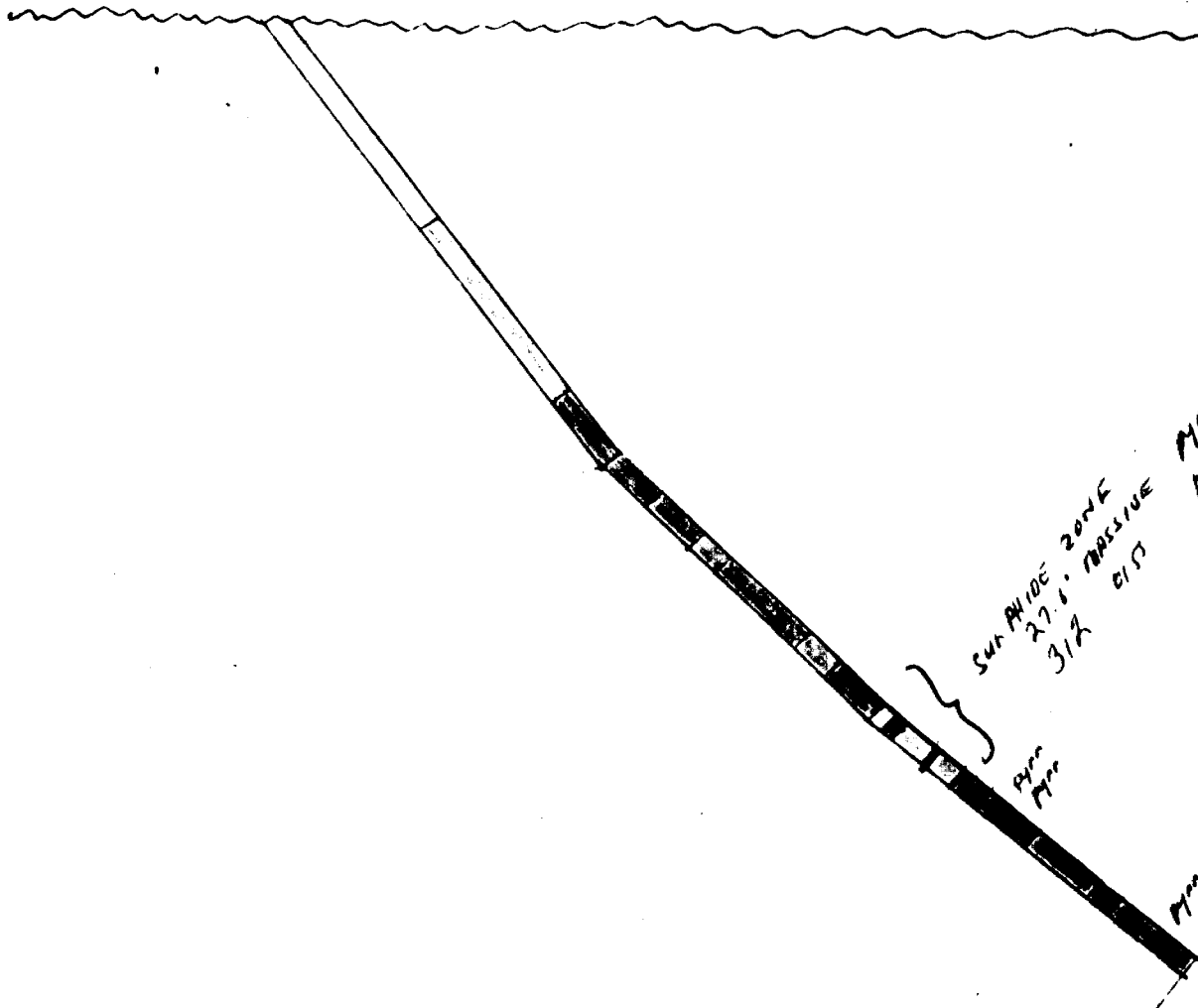
14400W

13400W

12400W

11400W

SURFACE



SUNNIDE ZONE  
27.5' MASSIVE  
312 017  
MMP 17  
M 17  
12-1-09

SCALE: 1"=100'

Jan 24/05 *J. L. ...*

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stimson Twp HOLE No. S # 8  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Jan. 20/65  
 LATITUDE 67°00S DATUM \_\_\_\_\_ COMPLETED Jan. 24/65  
 DEPARTURE 18°00W BEARING N 70° E ULTIMATE DEPTH 533'  
 ELEVATION \_\_\_\_\_ DIP -55° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
0-121	Overburden							
121-141	Biotite Gneiss				200'	57°00'	53°	X
	brown-black, mostly m.g., biotite				400'	51°30'	47°30'	
	xls orientated parallel gneissosity at 70°							
	occas. unaltered sections dark green inter volc.							
	e.g. 122-124, 135-137							
230-230½	Biotite - Qtz-Feld sheared porphyry							
	large up to ½" Qtz.-feld phenocrysts elongated parallel							
	schistosity in matrix of black biotite xls orientated parallel schistosity							
	135 barren 4" Qtz. wa.							
141-149	Agglomeritic (lapilli) Tuff							
	dark green f.g., inter volc. tuff							

NORTHERN MINER FORM 505 REV./54

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# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson HOLE No. S #8  
 SHEET NUMBER 2 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	large up to 1" elongated qtz-feld pyroclastic fragments much brown biotite and occas. white feldspathic banding at 70°								
	148-149 white qtz.-feld porphyry dike								
149-161	Andesite dark green-brown, f.g., inter volc. much along schistose planes 154-155) white qtz.-feld. porphyry dikes 159-161) with yellow muscovite & black biotite 154, 158 barren qtz. strgs.								
161-201	Agglomeritic (lapilli) Tuff same as 141-149, much brown biotitic banding at 70° eg. 167-175 occas. white feldspathic banding at 70°.								

NORTHERN MINER FORM 505 REV./54

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# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. 3 # 8

SHEET NUMBER 3 SECTION FROM ..... TO ..... STARTED .....

LATITUDE ..... DATUM ..... COMPLETED .....

DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....

ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	171 2" white qtz. strg. with pink garnets								
	175 $\frac{1}{2}$ -176 $\frac{1}{2}$ ) white, massive, qtz.-fold porphyry dike with								
	195-199 $\frac{1}{2}$ ) pink garnets, biotite, muscovite, sharp contacts parallel band!								
	186 large 3" white qtz.-fold pyroclastic band								
201 $\frac{1}{2}$ -223	Biotite Gneiss								
	Same as 121-141, gneissosity at 70° throughout								
	occass. sections unaltered inter valc. e.g. 216-217								
	barren qtz. strgs at 208, 215 $\frac{1}{2}$ , 222 $\frac{1}{2}$								
	209 $\frac{1}{2}$ -210) white qtz-fold-biotite sheared porphyry								
	210 $\frac{1}{2}$ -211 $\frac{1}{2}$ ) up to $\frac{1}{2}$ " qtz. fold elongated phenocrysts in black equi-orient								
	212-212 $\frac{1}{2}$ ) contacts sharp parallel banding, some pyrite mineralization or								
	contacts 213-214 white massive, qtz.-fold, porphyry dike some f.g.,								
	biotite, contacts sharp parallel banding.								



# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. 3 # 8  
 SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
223-238	Garnetiferous "Gneissic" Peridotite green-black, n.g., ultrabasic intrusive, much heavy black biotite along shear planes giving gneissic structure at 70° to core small 1/8" pink garnet remnants elongated parallel gneissosity gradational contacts, diss. py & pyrr. mineralization throughout 225-225½ white qtz.-fold porphyry dike with 10% pyrr. & py. 228½-230½) qtz.-fold.-Biotite sheared porphyry dikes 234-234½) (same as 210½-211½)								
238-263½	Sulphide Zone 238-243½ black, f.g., ultrabasic intrusive (peridotite) host rock small conspicuous 1/8" garnet remnants throughout 243½-259 light gray f.g. acid v. calc. host rock 259-263½ Same host rock as 238-243½.								

NORTHERN MINER FORM 905 REV./54

DRILLED BY Rayles Bros. SIGNED J.B. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S 4 0  
 SHEET NUMBER 5 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
						CU	NI	Pb	ZI
	<u>Samples</u>								
	30% sulphides, mainly pyrr, some py qtz.	2965	238.0	241.2	3.2				
	70% " " " minor	2966	241.2	243.5	2.3				
	same as #2966	2967	243.5	245.0	1.5				
	diss. pyrr. in silc. volc.	2968	245.0	249.0	4.0				
	same as #2968	2969	249.0	252.3	3.3				
	40% sulphides, mainly pyrr, much qtz.	2970	252.3	255.0	2.7				
	" " " silc. volc	2971	255.0	259.0	4.0				
	diss. pyrr in peridotite	2972	259.0	263.5	4.5				
<u>263 1/2 - 273</u>	<u>Basite</u>								
	Dark green-brown, f.g., acid inter volc. gneissic due to much brown biotitic banding at 45° garnetiferous throughout, diss py & pyrr. barren qtz. strgs. at 265, 270 1/2, 271 1/2								

NORTHERN MINER FORM 505 REV/54

DRILLED BY Boyles Bros. SIGNED J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 8  
 SHEET NUMBER 6 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	266-267) black, f.g., garnetiferous peridotite dikes								
	271-272) gradational contacts.								
273-281	Andesite								
	dark green, inter volc., primary banding at 60°								
	much biotite developed along schistose planes								
281-288	Biotite Gneiss								
	mostly black biotite orientated parallel gneissosity at 50°								
	same as 121-141								
288-296	Pink Qtz.-Feld. Porphyry								
	large equigranular qtz.-feld xls in siliceous matrix								
	minor pyrite, pink garnets.								

NORTHERN MINER FORM 505 REV./54

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# DIAMOND DRILL RECORD

PROPERTY Nistango River - Stinson Twp HOLE No. S # 8

SHEET NUMBER 7 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
296-298½	Qts.-fold-Biotite sheared porphyry same as 210½-211½, qts.-fold phenocrysts up to ½"								
298½-311	Banded Tuffaceous Andesite dark green brown inter volc. tuff, inter banded with characteristic reddish-brown biotitic banding at 60° barren qts. strgs. at 299, 306½, 310								
311-322	Qts.-Fold. Porphyry white equigranular qts.-fold phenocrysts in f.g. siliceous matrix some biotite and muscovite, similar to 288-296, diss. py. & pyrr, throughout contacts sharp parallel banding 312½-314½ same as 210½-211½ both porphyries genetically related.								

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# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. 3 / 8

SHEET NUMBER 8 SECTION FROM ..... TO ..... STARTED .....

LATITUDE ..... DATUM ..... COMPLETED .....

DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....

ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
322-381½	Qtz.-Feld-Biotite Sheared Porphyry same as 210½-211½, volcanic inclusion at 377 ½ qtz.-feld porphyry sections same as 311-322 present at 323, 324-324½, 325½-326, 329, 335½-336, 341-343, 346-349½, 353-353½								
381½-458	Banded Trifascies Amphibole Same as 298½-311, banding at 70°, 392-393 40% white feldspathic banding at barren white qtz. strgs. at 392, 393, 445½, 428½ 382, 384, 387 narrow qtz.-feld-biotite sheared porphyry dikes 457-458 white qtz. vein, some chlorite in contacts								
458-533	Gabbro dark green, a.g. basic intrusive, slightly magnetic, sharp contact 458' 458-465 dark green-black, f.g., dioritic chilled marginal phase.								

MISTANGO RIVER MINES

STIMSON TWP.

SCALE 1" = 100'

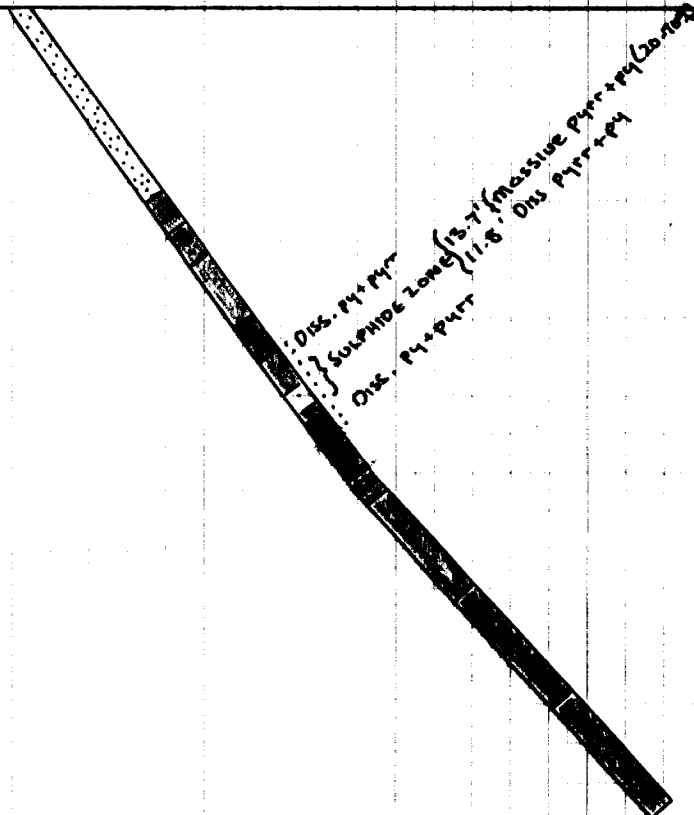
D.D.H. 5<sup>#</sup> 8

18 + 00W

17 + 00W

16 + 00W

15 + 00W



# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 9  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Jan. 28/65  
 LATITUDE 71°00' S DATUM \_\_\_\_\_ COMPLETED Feb. 2/65  
 DEPARTURE 2470 W BEARING N 70° E ULTIMATE DEPTH 498'  
 ELEVATION \_\_\_\_\_ DIP -60° PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
0-61	Overburden				Dip Tests (1 1/8" X 1 1/16") dia.			
					Footage	Actual	True	
61-104	Andesitic Tuff				200'	56°30'	53°	6
	dark green, f.g., inter volc. tuff occas. fine				400'	54°00'	50°	!
	white, feldspathic banding at 60°, much secondary biotite orientated parallel schistosity at 60°, barren							
	white qtz. strgs. at 73, 87, 94, 98 1/2							
	79 - 2" qtz. - filled fault, comb structure, vugs, contacts at 45°							
	91 1/2 - 92 1/2 pink qtz. - fold porphyry dike, sharp contacts at 45°							
	100-102 acid-inter volc. tuff band, garnetiferous to 104'							
104-166 1/2	Garnetiferous Amphibolite							
	dark green-black, ultrabasic, n.g. dike, gradational contacts obscured							
	with pink garnets, brown biotitic (gneissic structure) banding at 60°							

NORTHERN MINER FORM 905 REV./54

DRILLED BY Boyles Bros

SIGNED \_\_\_\_\_

J.B. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 9  
 SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
106½	Rhyolitic Tuff								
	light grey-white, acid volc. tuff, fine primary white feldspathic banding at 60° and occas. bands creamy cherty tuff								
	129-133 many large up to ½" pink oval garnets lined parallel banding								
	118-121, 124½-125½) white, aphanitic biotite-granite dikes								
	126½-127½, 128½-129) mostly f.g. qtz. & feld. with 5% black biotite xls.								
	all contacts sharp parallel banding								
	110½, 123½, 124½, 131 - narrow up to 1" garnetiferous peridotite dikes								
133-139	Garnetiferous Peridotite								
	Same as 104-106½, minor diss. py & pyrr. throughout								
	up to ½" oval pink garnets, biotitic (gneissic) banding at 60°								
	garnets linsatci parallel gneissosity of biotite								
	136½ - 2" Biotite Granite dike, contacts sharp parallel banding.								

NORTHERN MINER FORM 505 REV./54

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# DIAMOND DRILL RECORD

PROPERTY Mistango River -Stinson Twp HOLE No. S # 9  
 SHEET NUMBER 3 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
139-186	Andesitic Tuff								
	Same as 61-104, primary white feldspathic banding at 60°								
	barren white qtz. str at 153								
	narrow garnetiferous peridotite dikes at 160½, 162-163½, 164-166,								
	171, 172, 173, 173½-174, 177, 178, 179 all parallel banding								
186-242½	Garnetiferous Peridotite Gneiss								
	Same as 133-139, only much more brown biotitic (gneissic) banding at 60°								
	occas. narrow sections comprised wholly of pink garnets in bunches e.g.								
	196-198½, 192-196 mainly a biotite gneiss, peridotite completely								
	altered 190-190½, 194½-195, Biotite Granite dikes, same as 112-127,								
	sharp contacts parallel banding								
	198½-210 Grey-pink granite dike, sporadic mainly f.g. qtz-fold,								
	minor biotite, diss py. throughout, contacts sharp 90° to core, blocky								

NORTHERN MINER FORM 505 REV./54

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# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 9

SHEET NUMBER 4 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	210-231 Several narrow unaltered bands andesitic tuff but peridotite predominates core, garnets smaller up to only 1/4" all elongated parallel gneissic structure at 60°								
	226 1/2 - 228 1/2 same as 198 1/2 - 210, contacts similar								
	231-242 1/2 peridotite more c.g. and serpentinized light green, contorted alivine veinlets throughout many large dark brown garnets present, no biotitic (gneissic) banding present								
	242 1/2 - 264 Andesitic Tuff Same as 61-104, very minor primary banding at 60° barren white qtz. strgs at 246, 257, 257 1/2 biotite granite dikes similar to 198 1/2 - 210 at 248 1/2 - 251 1/2, 252 - 256 1/2 262-264 garnetiferous peridotite same as 133-139								

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S # 9  
 SHEET NUMBER 5 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
264-292	Rhyolitic Tuff								
	Same as 100 $\frac{1}{2}$ -133, more siliceous, lighter in color, much fine, white cherty banding at 60° which locally falttens adjacent to granite dikes, diss. py & pyrr. with occas. cpy. spec.								
	massive sulphide stgrs. (mainly Pyrr, some py) at 264 $\frac{1}{2}$ , 266 $\frac{1}{2}$ , 268, 270 $\frac{1}{2}$ -273 $\frac{1}{2}$								
	266-268 narrow graphitic tuff band, dark grey-black, some massive black graphite in acid volc. matrix, some py, pyrr. cpy.								
	light grey cherty banding contorted throughout								
	273 $\frac{1}{2}$ -277 $\frac{1}{2}$ , 282-292) grey-pink garnite dikes								
	same as 198 $\frac{1}{2}$ -210 contacts sharp at all angles to banding.								

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SIGNED

J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. 5 # 9

SHEET NUMBER 6 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
292-332	<b>Rhyolitic Crystal Tuff</b>  light grey-white acid volc. tuff interbanded with crystal tuff bands of mainly small, white, up to 1/8" feldspar pyroclastic fragments some minor diss. py & pyrr, massive pyrr strgs at 292½, 297, 298, 325½, 327-328½, 299½-301½, 306-310½) grey-pink granite dikes 303½-304 ) sharp contacts								
332-341	<b>Graphitic Tuff</b>  Same as 256-258, diss. py. & pyrr, minor specs cry.								
341-381	<b>Rhyolitic crystal Tuff</b>  same as 292-332, minor diss. py & pyrr, massive pyrr strgs at 357, 358 pink granite dikes at 341½-342, 353-353½, 350-361½								

# DIAMOND DRILL RECORD

PROPERTY Mistango River - Stinson Twp HOLE No. S 49

SHEET NUMBER 7 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_

LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
381-383	Diorite dark green, n.g., basic intrusive dike, massive sharp contacts parallel banding								
383-390	Graphitic Tuff Same as 266-268, qtz.-carb filled shears throughout some diss. py & pyrr. f.g. black silc, host rock								
390-402	Rhyolitic Crystal Tuff Same as 292-332, 341-381, banding 60° to core 390-402 light gray, f.g., rhyolitic tuff, massive a few white fragmental xls only 395-396; same as 381-383, contacts similar								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Rayles Bros. SIGNED J.D. Harvey

# DIAMOND DRILL RECORD

PROPERTY Mistango River- Stinson Twp HOLE No. S # 9  
 SHEET NUMBER 8 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
402-407	Contact Zone								
	402-402½ graphitic qts.- carb filled shears heavy graphite, minor py & pyrr								
	402½ 4" pink granite porphyry dike								
	402½-405½ F.G., dark green, silicified, diorite intrusive								
	405½-407 same as 402-402½								
407-498	Gabbro								
	dark green, c.g., basic intrusive								
	407-416 f.g., green-black, chilled marginal phase sharp contact at 407'								
	414-416 sltgs along core								
	498 End of Hole								

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MISTANGO RIVER MINES  
STIMSON TWP.  
SCALE 1"=100'

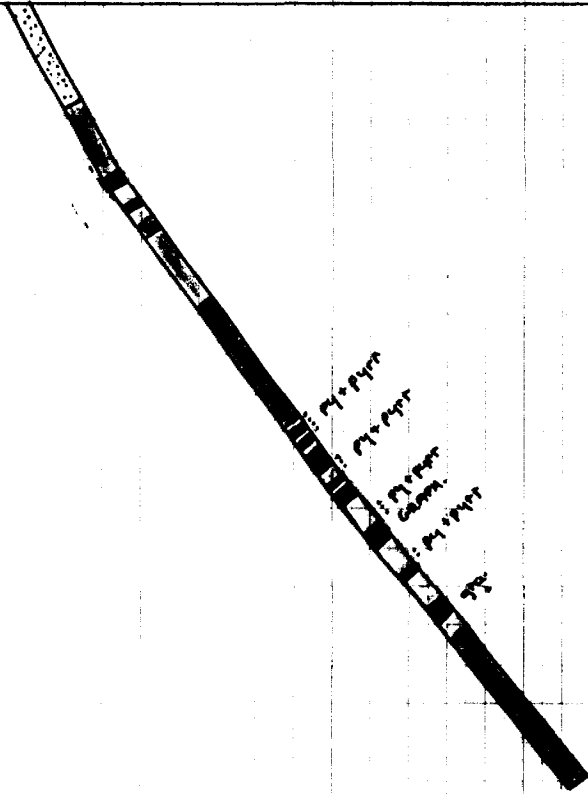
D.D.H. S<sup>#</sup> 9  
SECTION 71+00S

3+00W

2+00W

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REPORT TO  
MISTANGO RIVER MINES LIMITED  
ON  
PROPERTY COVERED BY EXPLORATORY LICENCE NO. 13,302  
ISSUED BY  
ONTARIO DEPARTMENT OF MINES, NOVEMBER 16, 1961.

JULY 2, 1963





INDEX

	<u>Page</u>
SUMMARY .....	1
ASSIGNMENT .....	1
CONCLUSIONS .....	1 and 2
RECOMMENDATIONS .....	1 and 2
LOCATION .....	3
ACCESS AND SERVICES .....	3
HISTORY .....	4
SUMMARY OF REPORTS .....	6
DRILLING PROGRAM ANOMALY NO. 5 .....	8
CONCLUSIONS ANOMALY NO. 5 .....	9
RECOMMENDATIONS ANOMALY NO. 5 .....	9
DRILLING PROGRAM ANOMALY NO. 6 .....	9
CONCLUSIONS ANOMALY NO. 6 .....	10
RECOMMENDATIONS ANOMALY NO. 6 .....	11.
LIST OF REFERENCES .....	12
LIST OF MAPS .....	13
LIST OF DRILL LOGS AND SECTIONS .....	13
LETTER OF CERTIFICATION.....	14

APPENDIX	Sec. I	-	Drill Logs
APPENDIX	Sec. II	-	Drill Sections
APPENDIX	Maps A to C	-	In pocket.

GRAY S. WILLSON, P. ENG.

*Geologist*

TELEPHONES - GRIMSBY  
OFFICE: WHITEHALL 5-2234  
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BOX 99,  
GRIMSBY, ONTARIO  
July 2, 1963

SUMMARY

1. Assignment

The writer spent the months of February, March, April and May of 1963 on the property dealt with in this report supervising the field program. In May, 1963, Mr. W.A. Carter instructed the writer verbally to prepare a report on anomalies No. 5 and No. 6 reviewing all that had been done to this date.

The following report is in compliance with his instructions:

2. Conclusions - Anomaly No. 5

The several anomalies comprising Anomaly No. 5 are caused by lean banded iron formation in grey wacke and altered sediments. The two types of exploration targets envisaged in the first analyses of the magnetic data (Report No. 2) namely, ultra basic intrusives with possibly associated asbestos mineralization and also base metal mineralization along the flanks of the intrusives, are no longer valid. The horizontal loop electromagnetic technique was unsatisfactory in the test made and this method of searching for metallic sulfides is ruled out.

There remain two possibilities:

(a) That the sedimentary-volcanic contact which lies to the south of Anomaly No. 5 is a favorable locus for fracturing and possibly mineralization.

(b) That the use of other electromagnetic techniques, such as the Turam method, may be successful in searching for metallic sulfide mineralization where the horizontal loop method failed.

3. Recommendations - Anomaly No. 5

At the time of writing, Frobex Ltd. and associates are conducting a Turam electromagnetic survey of Anomalies Nos. 1, 2 and 3 within the exploration licence area. When this survey is completed and results assessed it will be known if this technique may be effectively applied in the area.

If the results are satisfactory, then it is recommended that the use of this technique to explore the volcanic sedimentary contact be considered. No specific program should be drafted until the results on Anomalies Nos. 1, 2 and 3 are known.

.....2/

4. Conclusions Anomaly No. 6

The serpentized peridotite intrusives extend from Anomaly A on the east end at least as far west as anomaly F and probably to Anomaly K, this distance is roughly  $6\frac{1}{2}$  miles. The width varies from 1,200 feet on the east end to 3,000 feet in the center; here a division into two limbs occurs, the north limb extending for  $2\frac{1}{2}$  miles with a width varying from 1000 to 1800 ft., the south limb extending for 4 miles with a width varying from 800 to 2000 feet.

In the central portion of the south limb (Anomaly D) the most favorable asbestos mineralization was obtained. In this section there are lenses of dunite occurring in the peridotite. However, the asbestos mineralization is too low in grade and too limited in extent to be of economic interest in itself.

The base metal mineralization was very sparse. The possibility of nickel concentrations remains but a suitable exploration technique is still required.

5. Recommendations Anomaly No. 6

As in the case of Anomaly No. 5, it is suggested first to await the testing of the Turam method in this area. If it proves satisfactory, then it is recommended that a program to explore the margins of the ultrabasic intrusives and the sedimentary-volcanic contact to the north be considered. A definite program should not be drafted until the results and limitations of the Turam technique in this area are known.

END OF SUMMARY

### The Property and Location

The property consists of 45,200 acres lying in Fox, Stimson, Sherring, Marathon, Moody and Galna Townships in the Larder Lake Mining Division of Ontario. This property is held under an exploratory licence No. 18,302 from the Ontario Department of Mines dated November 16, 1961. The term of such a licence is 3 years from the date of issue (1 - page 138). The Western end of the property is 15 miles east of Cochrane and straddles the Canadian National Railways right-of-way. The property continues on south-easterly for a length of 28 miles. The shape is irregular but the average width is roughly 2 miles.

This report will deal with Anomalies No. 5 and No. 6 in the south-eastern portion of the exploratory licence area. These anomalies are located in Sherring, Marathon, Moody and Galna Townships.

### Access and Services

The west end of the property crosses the main line of the Canadian National Railways running from Cochrane east. A point on the railway 28 miles east of Cochrane would be directly opposite the middle of Anomaly No. 5. At this point a private road belonging to the Abitibi Pulp and Paper Company crosses the railway and leads south to the Mistango River, a distance of 15 miles. It reaches the river at the north-west end of Anomaly No. 5. This road is gravelled for the first 5 miles south from the railway and then is a winter haulage road only. North of the railway the road is gravelled until it reaches the main Abitibi road from Iroquois Falls. The distance from the crossing of the railway to Iroquois Falls is 52 miles.

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Access and Services, - continued

The township road system for Fox Township comes to the Northwestern edge of the property and this system connects with the highway network at Cochrane.

There is also access by water from Iroquois Falls along the Abitibi and Mistango River to the central portion of the property. The distance to the central part of Anomaly No. 5 is approximately 26 miles.

There are power services in the southeast corner of Stimson Township - a transmission line which runs from Iroquois Falls to Cochrane. This line is approximately 3 miles from the western boundary of the property.

History

In the Eighteenth Annual Report of the Ontario Bureau of Mines (2) there is a section on the "Lake Abitibi Area" by Mr. M.B. Baker. Mr. Baker has this to say (page 263), "In view of the marked activity in prospecting for gold in the Abitibi district during the summers of 1906 and 1907 it was deemed advisable to have the area geologically mapped."

Mr. Baker and a party were placed there during the summer of 1908. Mr. Baker notes that "exploration parties were sent to Abitibi by the Dominion Government under Mr. Walter McQuat in 1872 -3 (3) and under Mr. William Ogilvie in 1891 (4). But the country southwest of Abitibi was not much explored till the summer of 1900, when the Ontario Government sent out exploration parties including surveyors, land and timber estimators and geologists to report on the northern region."

It is interesting to remark here that Mr. Baker mentions the area "southwest of Abitibi." This area was later explored in some detail. However, the area to the northwest - where the property of this report lies - was left relatively untouched. The reason for this was that this area is heavily covered with drift and has very sparse outcrops of igneous rocks.

History - continued

using techniques which were developed later.

The current program is outlined in the reports which have been made and these are tabulated chronologically below:

Report No. 1 - 1961 - Airborne Magnetic and Electromagnetic Survey of Stimson, Sweatman, Findlay, Mortimer, Sherring, Marathon, Moody and Galna Townships.

Hunting Survey Corporation Ltd., 1450 O'Connor Drive, Toronto, Ontario.

Report No. 2 - 1961 - December.

Report to North American Rare Metals Ltd. on Economic Geological Possibilities of Property under Exploratory Licence No. 13,302.

G.S. Willson, Box 99, Grimsby, Ontario,

Report No. 3 - 1962 - January,

Report on No. 1 above by Hunting Survey Corporation Ltd., 1450 O'Connor Drive, Toronto, Ontario.

Report No. 4 - 1962 - March,

Report on Ground Geophysical Surveys, Anomaly No. 5, Marathon - Moody Townships, Ontario, for North American Rare Metals Ltd.

Hunting Survey Corporation Ltd., 1450 O'Connor Drive, Toronto, Ontario.

Report No. 5 - 1962 - May.

Review of Report of Hunting Survey Corporation Ltd. on Ground Geophysical Surveys Anomaly No. 5, Marathon and Moody Townships, Ontario.

G.S. Willson, Box 99, Grimsby, Ontario.

Report No. 6 - 1962 - September.

Report on combined Geophysical Check Surveys, Aeromagnetic Anomaly No. 5, Marathon - Moody Townships.

Hunting Survey Corporation Ltd., 1450 O'Connor Drive, Toronto, Ontario.

Report No. 7 - 1962 - November -

Report on Exploratory Licence of Occupation No. 15,502 for Mistango River  
Mines Ltd. K.H. Canning, Toronto, Ont.

Report No. 8 - 1963 - January -

Report on Magnetometer Survey Anomaly No. 6, Moody - Galna Townships, Ontario, for Mistango River Mines Ltd.

Prospecting Geophysics Ltd., 3518 Vendome Ave., Montreal, P.Q.

Report No. 9 - 1963 - April -

Additional Geophysical Surveys Anomaly No. 6 Moody and Galna Townships.

Prospecting Geophysics Ltd., 3518 Vendome Ave., Montreal, P.Q.

For ease and simplicity in this review the above reports will be referred to by the numbers assigned.

Summary of Reports Nos. 1 - 9.

In general the exploration program which has been followed has been based on the analogy between the airborne magnetic anomalies shown in Report No. 1 and those airborne magnetic anomalies known in the Mann - McCart, Munro - Beatty areas to the south. In the southern area the general correlation between the airborne magnetometer anomalies and the geological sources was known and in our report area interpretations were made of the airborne anomalies in the light of the correlation to the south.

Anomalies No. 5 and No. 6 were interpreted as the expressions of ultra-basic intrusives with the possibility of asbestos mineralization in the intrusive bodies and the possibility of base metal mineralization occurring along the margins of the intrusives. This general thesis is dealt with in Report No. 2 which recommends initially a detailed ground magnetic survey of Anomaly No. 5 to check in detail the form of the magnetic anomaly; accompanied by a small test ground electromagnetic survey to determine the feasibility of this technique under the considerable overburden believed to exist and the extensive conductive clays, overlying bedrock.

Report No. 4 gives the results of the ground magnetic survey of Anomaly No. 5. This indicated two parallel magnetic anomalies which were interpreted

GRAY S. WILLSON

to be ultrabasic intrusives because of the uniformity and regularity of the magnetic pattern. The test ground electromagnetic data was found unsatisfactory and this part of the survey was discontinued. The recommendations were to drill a section across the center of the two anomalies, a total of five drill holes and 5,000 feet of drilling.

Report No. 5 reviews the recommendations of Report No. 4 and concurs with them adding that there are four minor magnetic anomalies on the flanks of the two major ones. Accepting the interpretation that the major anomalies are most probably the expression of ultrabasic intrusives then these minor anomalies on the flanks could be the indication of localized sulphide mineralization. To test this possibility four additional profiles were recommended using seismic and gravitational equipment. If significant gravity anomalies were found coinciding with the magnetic anomalies then it was recommended that these also be drilled as part of the program.

Report No. 6 was made after three additional seismic and gravitational profiles were run. The fourth profile lay across the Mistango River which by this time was open and therefore it could not be run. The report concluded that there were no significant gravity anomalies.

Report No. 7 deals with the drilling done on Anomaly No. 5 and also with the drilling done to check two magnetic peaks on a magnetic profile run in a southeasterly direction across Anomaly No. 6.

The drilling on anomaly No. 5 indicated the cause of the anomaly was lean banded iron formation in sediments. One drill hole - No. 3 - on one of the minor magnetic anomalies indicated that the cause of this anomaly was also lean banded iron formation. A total of 3864 feet of drilling was done on Anomaly No. 5.

The drilling of the magnetic peaks on Anomaly No. 6 - 2 holes for a total of 1958 feet - indicated ultrabasic intrusives accompanied by asbestos mineralization.



GRAY S. WILLSON

The recommendations were to carry out a ground magnetometer survey of anomaly No. 6 and to follow this with a drilling program to check for further and economic asbestos mineralization. It was recommended that the program allow for 10,000 feet of drilling.

Report No. 8 presented the results of the detailed ground magnetometer survey of anomaly No. 6. The interpretation given of the magnetic anomalies was that these were due to ultrabasic intrusives as indicated in the two holes drilled and that a drilling program of 10,000 feet be undertaken to test the anomalies starting with the east end which was believed to be most favorable.

Report No. 9 was supplementary to No. 8. Additional magnetic surveying on the west end had been requested by Mistango Mines Ltd. and the results were given in the report. This showed another small anomaly extending from line 212 W to 232 W and lying south of the base line. The peak magnetic value was 3000 gammas. Also an electromagnet survey of the east end of anomaly No. 6 (anomaly A) had been requested because the shallow overburden here, 25 - 35 feet made such a survey feasible. These results were also given in the report. The one conductor indicated in the electromagnetic survey had been drilled and was known to be a graphitic shear.

#### Drilling Program Anomaly No. 5

There were four holes drilled for a total of 3864 feet. Three holes Nos. 1, 4 and 2 were drilled on Line 845. These intersected sediments with lean iron formation. The iron formation coincided with the magnetic anomalies and was unquestionably the cause of these. The section through the iron formation in drill hole No. 1 was assayed in 5 and 10 foot lengths and the results are shown in the log of this hole in the appendix. Averaging the assays in this hole gives the following:

Hole No. 1 Footage	319.0 - 353.0,	34.0 feet	Average 9.46 % Fe
"	355.0 - 589.0,	234.0 feet	" 18.01 % Fe

In view of the low iron content other similar sections in holes Nos. 2, 3 and 4 were not assayed.

Hole No. 3 was located to test one of the minor magnetic anomalies and it was found that this was also caused by lean iron formation.

#### Conclusions Anomaly No. 5

The sources of the magnetic anomalies are the bands of lean sedimentary iron formation; this applies to the major and the minor anomalies.

The two types of exploration targets envisaged in the first analyses of the magnetic data, namely ultra basic intrusives with possibly associated asbestos mineralization and also base metal mineralization along the flanks of the intrusives, are no longer valid.

The horizontal loop electromagnetic technique was unsatisfactory in the test made and this approach to a search for metallic sulfides is ruled out.

There remain two possibilities --

1. That the sedimentary-volcanic contact which lies to the south of Anomaly No. 5 is a favorable locus for fracturing and possibly mineralization.
2. That the use of other Electromagnetic techniques such as the Turam method may be successful where the horizontal loop method failed.

#### Recommendations Anomaly No. 5

At the time of writing Frobex Ltd. and Associates are conducting a Turam electromagnetic survey of anomalies 1, 2 and 3 within the exploration licence area. When this survey is completed and the results evaluated it will be known if this technique may be effectively applied in the area. If the results are satisfactory then it is recommended that the use of this technique to explore the volcanic sedimentary contact be considered. No specific program should be drafted until the results on anomalies Nos. 1, 2 and 3 are known.

#### Drilling Program Anomaly No. 6

There were fourteen holes drilled on this anomaly, which is really made up of a number of smaller anomalies at least eleven in number. The total footage drilled was 12,156 feet of which 1958 feet in two holes

(Nos. 5 and 6) was drilled in 1962, and 10,198 feet in twelve holes was drilled in 1963. The drilling indicated that the magnetic anomalies were caused by intrusions of peridotites. The peridotites were rich in magnetite which in some portions composed 10% or more of the rock. There were in places localized bodies of dunite, and in places some weak asbestos fibre zones, often in the dunite. None of these fibre zones were of economic significance in themselves. There were low values of nickel (0.2 - 0.3%) found throughout the basic intrusives sometimes accompanied by small amounts of chromium (0.11 - 3.88%). Such mineralization is typical of the serpentinized peridotites of the eastern Townships of Quebec (5). However, the presence of nickel and chromium in the ultrabasic intrusives does hold forth the possibility that there may be segregations or concentrations of these minerals either in or adjacent to the intrusives.

Anomaly A on the eastern end of anomaly No. 6 had only shallow overburden and therefore a horizontal loop E.M. survey was carried out here. The results are given in Report No. 9. The one significant conductor indicated in the report was intersected in drill hole No. 8 A and was known to be a graphiteec shear with some associated pyrrhotite and minor chalcopyrite. A selected sample representing the best mineralization assayed Copper 0.11%, Nickel 0.0%. This conductor was checked again by drill hole No. 18-A 600 feet farther west. The results were poorer than in the first hole.

#### Conclusions Anomaly No. 6

The serpentinized peridotite intrusives extend from Anomaly A on the east end, at least as far west as Anomaly F and probably to Anomaly K, this distance is roughly  $6\frac{1}{2}$  miles. The width varies from 1,200 feet on the east end to 3,000 feet in the center; here a division into two limbs occurs, the north limb extending for  $2\frac{1}{2}$  miles with a width varying from 1,000 to 1,800 feet;

the south limb extending for 4 miles with a width varying from 800 to 2,000 feet.

In the central portion of the south limb (anomaly D) the most favorable asbestos mineralization was obtained. In this section there are lenses of dunite occurring in the peridotite. However, the mineralization is too low in grade and too limited in extent to be of economic significance in itself.

The base metal mineralization was very sparse. The possibility of nickel concentrations remains but a suitable exploration technique is still required.

Recommendations Anomaly No. 6

As for Anomaly No. 5 the recommendation is to await the results of the test of the Turam method on anomalies Nos. 1, 2 and 3.

If satisfactory results are obtained then it is recommended that a program be considered to explore the margins of the intrusive bodies and also the contact between the sediments and the volcanic flows.

Until the results are known no specific program should be drafted.

This report is respectfully submitted for your consideration.

Yours very truly,



G.S. Willson, P. Eng.

Grimsby, Ontario  
July 2, 1963

List of References

1. The Mining Act, Province of Ontario, 1950, Chapter 236.
2. Ontario Bureau of Mines, Vol. XVIII Part I 1909, L. Abitibi Area,  
M.B. Baker.
3. Report of the Canadian Geological Survey 1872-3,  
by Walter McQuat.
4. Report of Exploration Survey to Hudson Bay, by William Ogilvie, 1891.
5. E.H. Nickel (1960) The Occurrence of Native Nickel-Iron in the  
Serpentine Rocks of the Eastern Townships of Quebec, Department of  
Mines and Technical Surveys Research Report R 57 p 309.

List of Maps (In pocket)

- A. Aeromagnetic Map at scale of 1 inch to 1 mile showing outline of exploratory licence 13,302 and the principal anomalies by number. Also key location map.
- B. Ground magnetic map of anomaly No. 6 at scale of 1 inch to 400 feet. On this base are plotted the horizontal projections of the drill holes. (2 sheets - East half and West half.)
- C. Ground magnetic map of anomaly No. 5 at a scale of 1 inch to 400 feet. On this base are plotted the horizontal projections of the drill holes.

List of Drill Data:

<u>D.D.H. No.</u>	<u>Anomaly No.</u>	<u>Log</u>	<u>Section</u>
1	5	Appendix Sec. I.	Appendix Sec. II.
2	5	"	"
3	5	"	"
4	5	"	"
5	6	"	"
6	6	"	"
7-D	6	"	"
8-A	6	"	"
9-D	6	"	"
10-A	6	"	"
11-D	6	"	"
12-J	6	"	"
13-B	6	"	"
14-B	6	"	"
15-B	6	"	"
16-D	6	"	"
17-F	6	"	"
18-A	6	"	"

# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LTD., Moody Twp., Ontario HOLE No. 1

SHEET NUMBER 1 SECTION FROM TO STARTED June 15/62

LATITUDE Line 84 South DATUM COMPLETED June 29/62

DEPARTURE 22+00W BEARING N. 50° E. ULTIMATE DEPTH 997'

ELEVATION DIP 400' = 46°; 600' = 40°; 800' = 39°; 970' = 39° PROPOSED DEPTH 1000'

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-170	OVERBURDEN - clay, no boulders encountered.								
170-229	ALTERED SEDIMENTS - (originally greywacke?)								
	170-192 fine-grained, grey, with small bluish coloured quartz eyes throughout. Mineralized with fine-grained disseminated pyrite and occasionally very fine grains of magnetite. Pyrite also occurs as coatings on narrow fractures, and as small cubes. Rock is cut by fine to 1/8" wide quartz stringers at 25-50° to core axis. From 188-192, rock becomes more chloritic and sericitic and streaky, with a few quartz eyes still seen.								
	192-202 streaky greenish colour								
	202-214 streaky in places with epidote stringers. Dark green sections have abundant black amphibole - "spotted rock"								

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 1  
 SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	Rock is fairly heavily carbonated in places as individual grains, as narrow vein fillings, and as coatings on the margins of epidote stringers. Some sections are fine-grained.								
	206 $\frac{1}{2}$ -214 bands of magnetite appear up to 2 $\frac{1}{2}$ " wide with the average around $\frac{1}{2}$ ", at 45-60° to the core axis.								
	214-229 similar to 192-202.								
229-236	GREYWACKE - fine-grained, grey colour, carbonated rock, with feldspar-quartz-biotite fragments in a fine-grained chloritic matrix. No grain gradation visible.								
236-349.5	ALTERED SEDIMENTS - very streaky in places with strong chloritization. Minor bands of Iron Formation (I.F.), and occasionally a heavy spot								





# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 1  
 SHEET NUMBER 4 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
							% Fe	
	banded with some carbonate seen, especially near upper contact. Very likely an altered greywacke which starts at 236.	4604	349.5	353.0	3.5		16.28	
353-355	GREYWACKE - grey colour, showing graded bedding. Good contacts at both ends at 45° to core axis. Fragments consist of quartz, jasper, pink feldspar, carbonate, pyrite cubes, in a chlorite-sericite matrix. Top determination is doubtful - suggests tops face S.W. Appears to be at least two beds.							
355-358	MASSIVE MAGNETITE - almost continuously with minor pyrite cubes at upper contact. Core recovery = 85%	4605	355	358	3.0	22.07		

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1

SHEET NUMBER 5 SECTION FROM ..... TO ..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
						% Fe		
358-361	ALTERED SEDIMENT - with some banded iron formation. Rock is streaky and a few pyrite cubes present.	4606	358	361	3.0	11.70		
361-376	BANDED IRON FORMATION - with almost continuous magnetite and very fine bands of carbonate. 90% core recovery.	4607	361	366	5.0	25.00		
		4608	366	371	5.0	21.94		
		4609	371	376	5.0	24.80		
376-380	ALTERED SEDIMENT - light grey green colour with abundant bluish coloured quartz eyes, and iron-rich amphiboles.	4610	376	380	4.0	4.16		

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1.....

SHEET NUMBER 6 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
						%Fe		
380-395.5	BANDED IRON FORMATION -	4611	380	385	5.0	11.62		
	bands separated by sediment	4612	385	390	5.0	17.39		
	sections (2" to 24" wide),	4613	390	395.5	5.5	17.08		
	core recovery 95%+ plus.							
395.5-414	MASSIVE MAGNETITE - like	4614	395.5	399	3.5	23.42		
	361-376 with perhaps less mag-	4615	399	404	5.0	22.18		
	netite, and short sections of	4616	404	409	5.0	21.18		
	interbedded sediments. Average	4617	409	414	5.0	19.28		
	width of sediments is 6". Core							
	recovery over 95%.							
414-997	ALTERED SEDIMENTS AND MINOR BANDED IRON FORMATION -							
	typical banded I.F. with short sections of massive magnetite separated							

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1

SHEET NUMBER 7 SECTION FROM ..... TO ..... STARTED .....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
							% Fe	
	by sediments. Some bands are	4618	414	424	10		12.24	
	composed of nearly solid mag-	4619	424	434	10		9.20	
	netite while others are carbon-	4620	434	444	10		16.80	
	ate filled. Magnetite becomes	4621	444	454	10		24.47	
	very minor from 576 to bottom.	4622	454	464	10		18.95	
	In places the sediments are very	4623	464	474	10		18.12	
	fine grained and have black	4624	474	484	10		13.29	
	carbonaceous material and silty	4625	484	494	10		14.63	
	portions., Banding varies from	4626	494	504	10		15.73	
	30-65° as hole deepens due to	4627	504	514	10		12.10	
	flattening of drill hole.	4628	514	524	10		5.83	
	490 onward - rock becomes	4629	524	534	10		17.31	
	More chloritic.	4630	534	539	5.0		26.56	
	576 onward - I.F. becomes	4631	539	549	10		14.72	

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 1  
 SHEET NUMBER 8 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES		
							% Fe	
	less abundant to bottom of	4632	549	559	10		15.40	
	hole and bands are separated	4633	559	569	10		10.41	
	by feet of sediments (not	4634	569	579	10		23.77	
	worthwhile to assay)	4635	579	589	10		7.37	
	534-539 - better magnetite							
	than from 474-534							
	571.5-576 - abundant magnetite.							
997	BOTTOM OF HOLE							

# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LTD. - Moody twp., Ontario HOLE No. 2

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED July 1/62

LATITUDE Line 84 S DATUM \_\_\_\_\_ COMPLETED July 24/62

DEPARTURE 11400 W. BEARING N. 50° E. ULTIMATE DEPTH 999'

ELEVATION \_\_\_\_\_ At collar = 60°; 200' = 47°  
 DIP 400' = 45°; 600' = 41°  
 800' = 40°; 975' = 37° PROPOSED DEPTH 1000'

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-198	OVERBURDEN - considerable difficulty with boulders and sand.								
198-472	ALTERED SEDIMENTS - grey rock with black-coloured sections where carbonaceous material present. In places lightly banded argillaceous, and silicified. Cherty layers between spotted (amphibole) sediments. Grey-wacke sections are pyritic and usually short - up to 6" long. Black carbonaceous sections are								

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# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 2

SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED .....

LATITUDE ..... DATUM ..... COMPLETED .....

DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....

ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	very narrow - up to $\frac{1}{4}$ ".								
	257-259: likely a tuffaceous rock with abundant feldspar fragments (angular) and minor carbonate fragments, quartz and pyrite with some pyrrhotite.								
	303-315: sericitic - like a schist with elongated quartz and feldspar fragments. Maybe originally a tuff.								
472-493	SEDIMENTS - but now rock becomes a greenish colour up to the I.F.								



# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 2  
 SHEET NUMBER 3 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
493-550.	BANDED IRON FORMATION - lower grade than found in hole No. 1. Very narrow sections with quartz and carbonate. Often shows slump structure (?) in bands of I.F. Rock has a faint greenish colour to it.								
550-596	ALTERED SEDIMENTS - I.F. peters out around here (550), and rock loses greenish-colour and reverts to grey colour as seen from 198 - 472. 566-567: 1 foot of I.F.								

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 8

SHEET NUMBER 4 SECTION FROM ..... TO ..... STARTED .....

LATITUDE ..... DATUM ..... COMPLETED .....

DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....

ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
596-614	BANDED IRON FORMATION - narrow sections with a lot of waste rock Rock is very fine grained where argillaceous. Some greywacke and "spotted" (amphibole) rock present.								
614-678	SEDIMENTS - similar to 550-596 with minor sections of I.F. other than noted below.  624-633: iron Formation 658-660: " "  673-678: rock becomes greener in colour like from 472-493								

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 2

SHEET NUMBER 5 SECTION FROM ..... TO ..... STARTED .....

LATITUDE ..... DATUM ..... COMPLETED .....

DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....

ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
678-699	IRON FORMATION - weak in grade and not as good-looking as found in hole No. 1.								
699-913	SEDIMENTS - greenish-colour with a few minor short sections of I.F. 670-673 greywacke 812-825 weak I.F.								
913-919	GREYWACKE - 2 feet of lost core								
919-999	SEDIMENTS								
999	BOTTOM OF HOLE								

# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LTD. Moody Twp., Ontario. HOLE No. 3

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED July 27/62

LATITUDE Line 104 South DATUM \_\_\_\_\_ COMPLETED August 14/62

DEPARTURE \_\_\_\_\_ BEARING N. 50° E. ULTIMATE DEPTH 900'

ELEVATION \_\_\_\_\_ DIP 400' = 48°; 600' = 40°; 800' = 38° PROPOSED DEPTH 1000'

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-136	OVERBURDEN - a lot of trouble getting casing down due to boulders, quicksand, etc.								
136-440	SEDIMENTS - predominantly hornblende streaked rock similar to holes No. 1 and 2, with some sections almost a sericite-schist. Originally, most of the rock was probably a greywacke. Quartz-carbonate stringers and narrow stringers of pyrite and minor pyrrhotite are seen occasionally. Some sections are darkly coloured and talcose.								
440-485	ALTERED SEDIMENTS - around 440 rock becomes greenish-coloured with prominent hornblende (or iron-rich amphiboles) streaks. Similar to chloritic found above the iron formation in the first two holes. Small bands of I.F. occur at 459, 463.5, 469.5, and 485								

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# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 3

SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED .....

LATITUDE ..... DATUM ..... COMPLETED .....

DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....

ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
485-501	IRON FORMATION - a few sections of "spotted rock" (hornblende or iron-rich amphiboles). A few stringers of carbonate are seen in the I.F. which is estimated to contain 15-20% Fe.								
501-553	SEDIMENTS - "spotted rock" with I.F. at following places: 509.5 - 513 15% Fe estimated 515 - 523 less than 15% 523 - 553 minor I.F. sections would assay about 5% Fe in five foot sections.								
553-577	IRON FORMATION - with abundant sections of amphibole "spotted rock" over short lengths. Would assay less than 15% Fe.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 3

SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
577-641	SEDIMENTS - look like altered greywacke, greenish-coloured, banded and streaky, with brecciation seen in some sections. A few quartz- carbonate bands are seen, and short sections of greywacke at; 634, 635, and 638.								
641-648	GREYWACKE - Very streaky and banded on both contacts. Mineralized with fine pyrite cubes. No definite grain gradation seen, to determine tops.								
648-656	ALTERED SEDIMENTS - probably originally greywacke. 648-651 greenish and well banded 651 - 656 streaky								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 3  
 SHEET NUMBER 4 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
656-710	SEDIMENTS - "Spotted rock (amphiboles) with a few streaky chloritic sections. Banding is evident in places.								
710-751	RECRYSTALLIZED GREYWACKE (?) - Rock is mottled and corroded-looking. Grey, green colour with a lot of quartz seen. Less mottled from 738 - 748.								
751-798	IMPURE QUARTZITE - Hairline stringers of altered feldspars and carbonate are seen. Section mineralized with narrow pyrite stringers. A few bands of 1/4" wide bands of quartz cutting the core.								
798-900	SEDIMENTS - altered greywacke mostly. Almost a sericite schist through most of section. Grey colour with banding well displayed. Lost core from 816-825, 827-833, 834-846, 884-887, and 893-895.								





# DIAMOND DRILL RECORD

PROPERTY MISTINGO RIVER MINES LTD., Moody Twp., Ontario HOLE No. 4

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED August 18/62

LATITUDE Line 8 1/2 South DATUM \_\_\_\_\_ COMPLETED August 26/62

DEPARTURE 19400 West BEARING S. 50° W. ULTIMATE DEPTH 968'

ELEVATION \_\_\_\_\_ DIP at collar = 60°; 200' = 59° PROPOSED DEPTH 1000'  
400' = 57°; 600' = 52°;  
800' - lost t.t.; 900' = 42°

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-100	OVERBURDEN - no difficulty in reaching bedrock.								
100-121	SEDIMENTS - altered greywacke likely. Spotted amphibole rock with minor short sections of Iron Formation at 100, 104-105, 5, 113, and 118-119.								
121-137	BAISED IRON FORMATION - almost continuous magnetite which would assay about 20-25% Fe.								
137-146	SEDIMENTS - "spotted amphibole rock" - grey colour except from 139-146 where rock is bluish-coloured with some I.F. Estimate 139-146 would assay 5-8% Fe.								
	IRON FORMATION - similar to 121-137, but not quite as much magnetite,								

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# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 4  
 SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	would assay +20% Fe								
151-180	IRON FORMATION - with spotted sediments								
	151-159 estimate 10% Fe								
	159-180 estimate 15% Fe								
190-198	ALTERED SEDIMENTS - amphibole spotted rock with a few short T.F. bands, less than 10% Fe.								
198-209	IRON FORMATION - some short high grade sections and remainder poor grade Estimate Fe content at 15%								
209-212	GREYWACKE - some reddish coloured feldspars and minor pyrite mineral- ization.								

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 4  
 SHEET NUMBER 3 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
212-230	IRON FORMATION - becomes chloritic and greenish coloured toward 230'. approximately 15% Fe								
230-346	ALTERED SEDIMENTS - (probably originally a greywacke). Some short sections of "spotted rock" and minor I.F. are seen. Rock displays banding and is greenish-coloured, and streaky-appearing in places.								
346-526	GREYWACKE - slightly altered, fine grained, bluish colour. Faint band- ing visible in places. 434-445 ) Abundant blue quartz eyes, diminishing 457-472) in size and frequency from 438-445 476-490 ) normal greywacke, grey colour.								
526-623	ALTERED SEDIMENTS- greywacke originally, brecciation of fragments								

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 4  
 SHEET NUMBER 4 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	seen in places. Frequently amphibole spotted rock is seen. Bedding still visible, and a few narrow bands of l.F. are seen.								
623-626	GREYWACKE - quartz-feldspar-biotite fragments in a fine grained matrix.								
626-630	ALTERED SEDIMENT - greenish (chloritic), and very streaky at top contact								
630-632.5	GREYWACKE - similar to 623-626								
632.5-651	ALTERED SEDIMENTS - greenish, chloritic, streaky, with visible banding near start of section.								
651-924	GREYWACKE - greyish-colour, slightly altered, and schistose from 774-784 and 786-834.								

# DIAMOND DRILL RECORD

PROPERTY \_\_\_\_\_ HOLE No. 4  
 SHEET NUMBER 5 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED \_\_\_\_\_  
 LATITUDE \_\_\_\_\_ DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING \_\_\_\_\_ ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH \_\_\_\_\_

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	774-784 talcose and heavily brecciated								
	786-797 sericitic								
	797-834 badly brecciated and streaky, sericitic								
	834-839 mixture (narrow bands) of sediments - almost like varves, with grain gradation								
	849-854 ) streaky and brecciated with								
	865-878 ) quartz-carbonate stringers.								
924-968	CHLORITIZED SEDIMENTS - dark green sediments with abundant chlorite.								
968	BOTTOM OF HOLE								

# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LTD., Galna Twp., Ontario

HOLE No. 5

SHEET NUMBER 1 SECTION FROM TO

STARTED Sept. 9, 1962

LATITUDE Line A DATUM

COMPLETED Sept. 28, 1962

DEPARTURE 60+00 S.

BEARING Azimuth = 321° T.  
At collar = 60°; 200' = 55°;

ULTIMATE DEPTH

ELEVATION DIP

400' = 54°; 600' = 50°;  
800' = 51°; 1000' = 50°

PROPOSED DEPTH

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-167	OVERBURDEN								
	167 - 192 is AX core								
	192 - 1001 is EX core								
167-204	Light grey volcanic with large feldspar phenocrysts with a few narrow quartz-carbonate veins. Around 204' the rock becomes greenish coloured and streaky, and phenocrysts occur less frequently.								
204-274	GREENSTONE - (Altered flow) with some quartz eyes. A few short talcy sections with sulphides - pyrite, pyrrhotite and minor chalcopyrite. 266-274 similar to 204-266 but not as badly altered.								
274-282	QUARTZ DIORITE - sharp contact at 274'								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Heath & Sherwood - Kirkland Lake, Ontario.

SIGNED K.H. Cumming

DRILLED BY \_\_\_\_\_ SIGNED \_\_\_\_\_

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 5

SHEET NUMBER 2 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
282-285	GREENISH- grey volcanic with quartz-feldspar fragments.								
285-320	PERIDOTITE with minor serpentine fractures of slips - mottled looking. 301.5-302 fault (?), badly broken up core. 303-318 minor veins of pyrrhotite - no reaction from dimethyl								
320-354	SERPENTINIZED PERIDOTITE - very streaky at start with some serpentine slips, Rock becomes darker coloured around 320' than previously.								
354-400	Similar to 285-320								
400-414	SERPENTINIZED ULTRABASIC (pyroxenite?) - streaky and badly broken up, likely a fault. A few cross fibre slips noticed (narrow 1/16" to hairline in width).								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 5.....

SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
414-620	Similar to 285-320 and 354-400, with many picrolite veinlets and some chrysotile asbestos as slip fibre and minor cross fibre. Magnetite is present throughout section, with more present from 500-590. Very coarse grained rock and serpentized.								
489-490	lost core - fault zone?								
548	1/8" chrysotile slip fibre								
550	1/16" chrysotile cross fibre.								
586-588	lost core - fault zone ?								
595-601	rock is darker and more massive looking with 5-10% magnetite.								
620-730	Sugary, greenish-coloured ultrabasic rock with a lot of olivine - DUNITE or olivine pyroxenite. Some very narrow chrysotile slips (cross fibre) present. Magnetite content from 2-5%. Picrolite veins seen rimmed with magnetite. Around 730, magnetite increases and rock								



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 5

SHEET NUMBER 4 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	becomes darker coloured. This section is better looking host rock for asbestos mineralization than previous sections.								
730-825	OLIVINE PYROXENITE (or Dunite) - darker coloured than previously with approximately 5% magnetite. Some narrow picrolite slips and chrysotile slip fibre and cross fibre, but very narrow.								
825-862	PERIDOTITE - ("spotted rock") No asbestos fibre and minor magnetite.								
862-884	Similar to 730-825 with approximately 5% magnetite.								
884-897	Mixture of peridotite (spotted rock) and olivine pyroxenite (like 730-825)								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 5.....

SHEET NUMBER 5..... SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
897-968	OLIVINE PYROXENITE - with very narrow asbestos fibre slips. Dark colour with approx. 2-5% magnetite.								
968-1001	PERIDOTITE with brownish coloured pyroxene (bronzite ?) Magnetite present in minor amount, and rock becomes lighter coloured toward bottom of hole.								
1001	BOTTOM OF HOLE								



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 6.....

SHEET NUMBER 2 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	503 - 504 ) No core recovered - possibly ground core with								
	510 - 516 ) some asbestos present, although rocks on either side								
	520 -521.5) do not show any evidence of this.								
<b>536-557</b>	DUNITE - very coarse-grained, greenish translucent colour, tight rock with no asbestos except for -								
	540 -541 ) a few thread veins in ser. peridotite								
	546 -546.5)								
<b>557-575.5</b>	SERPENTINIZED PERIDOTITE - with short pyroxenitic sections.								
<b>575.5-580.5</b>	OLIVINE PYROXENITE OR DUNITE								
<b>580.5-588</b>	SERPENTINIZED PERIDOTITE - a few minor asbestos thread veins.								

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 6  
 SHEET NUMBER 3 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
588-595.5	DUNITE OR OLIVINE PYROXENITE.								
595.5-599.5	SERPENTINIZED PERIDOTITE.								
595.5-603	OLIVINE PYROXENITE 602 - A dozen or so cross-fibre slips at 60° to core axis.								
603-957	SERPENTINIZED PERIDOTITE - with 10-15% pyroxene (bastite) 651-652 some very narrow thread veins-asbestos. 833 a few 1/16" cross-fibre slips 877.5-890 no core. 880-881 a few 1/32" cross-fibre slips 882.5-883.5 core missing.								



# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 7-D  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED Feb. 23, 1963  
 (Line 16 E)  
 LATITUDE (15420S DATUM \_\_\_\_\_ COMPLETED March 9, 1963  
(150'E  
 DEPARTURE \_\_\_\_\_ BEARING N 22° W ULTIMATE DEPTH 1008  
 ELEVATION \_\_\_\_\_ DIP 60°, 200'-59°, 400'-58°, 600'-54°, 800'-54° PROPOSED DEPTH \_\_\_\_\_  
 (Dips Corrected for capilarity)

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-144	Overburden - Mostly sand.								
144-150	Peridotite - Hard, little altered; round phenocrysts of basic feldspar. Much fine magnetite, jointing at 45° and 60° to core.								
150-175	Peridotite showing some serpentinization fair amount of finely disseminated pyrite with very occasional fleck of chalcopyrite. Jointing as before								
175-200	Peridotite as before								
200-225	Serpentinized peridotite as before, there is a fair amount of finely disseminated and streaky pyrite								

NORTHERN MINER FORM 905 REV. 1964

DRILLED BY Continental Diamond Drilling SIGNED G. S. Willson

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 7-D  
 SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
	and disseminated pyrrhotite throughout.								
225-250	Same as before - showing evidence of brecciation at 250.								
250-275	Same as before showing evidence of brecciation at 275								
275-300	Serpentinized peridotite as before								
300-325	Serpentinized peridotite as before								
325-350	Serpentinized peridotite, slight if any magnetite, numerous small picrolite stringers parallel jointing at 45° to core, rock generally massive								
350-375	As before								
375-400	As before								

NORTHERN MINER FORM 505 REV.194

DRILLED BY \_\_\_\_\_ SIGNED G.S. Willson



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 7-D

SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
400-425	As before, many fine picrolite stringers parallel jointing at 45° to 60° to core.								
425-500	As before								
500-525	Serpentinized peridotite, numerous fine veinlets of picrolite throughout usually 45° to 60° to core, rock indicates much fracturing and rementation by picrolite veinlets some fine magnetite but less than at 175' (no effect on compass).								
525-550	As before								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 7-D

SHEET NUMBER 4 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
50-575	Dunite schistosity 60° to core coarser grained with rounded silicious nodules from 570' on schistosity 70° to core.								
575-625	Dunite, with rounded silicious granules, sheared at 70° to core, numerous picrolite veinlets parallel schistosity at 70° to core strongly magnetic (Affects compass and noticeable pull on magnet)								
625-700	As before								
700-725	Dunite with a fair number of very fine-hair line to 1/16" chrysotile veinlets, pattern dindritic.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 7-D  
 SHEET NUMBER 5 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
725-750	Same as 700-725, thin slice shows light green olivine ground mass with possibly 25% mafic minerals - a large proportion of these must be magnetite, rock is strongly magnetic and drips will leap to magnet. Schistosity 45° - 60° to core.								
	724-725 ten hair line chrysotile veinlets the same at 741-742.								
750-775	As before, few dendritic hairline chrysotile veinlets throughout.								
775-800	As before, 776-788 about 10 hair line chrysotile veinlets per foot parallel schistosity at 60° to core.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 7-D

SHEET NUMBER 6 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
800-825	As before, few hair line chrysotile veinlets at 800--801, 822-825; character sample 823'.								
825-850	As before, - a few hair line to 1/16" chrysotile veinlets best section 840-841, 6 stringers 1/16"-1/8" parallel schistosity at 40° to core.								
850-875	Serpentinized peridotite - increasing number of picrolite veins at widely varying angles to core, appearance of brecciation.								
875-900	Serpentinized peridotite, rock is more equigranular, less olivine, increased hardness, weakly magnetic increasing number of picrolite veinlets, no chrysotile.								

NORTHERN MINER FORM 505 REV. 54

DRILLED BY..... SIGNED G.S. Willson

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 7-D

SHEET NUMBER 7 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
900-925	Serpentinized peridotite, at 901 rock becomes more massive, more typically plutonic, still olivine present but rock is less altered than before, disseminated crystals of pyrite.								
925-950	As before.								
950-975	Serpentinized peridotite, rock is increasingly hard, slight olivine. Core surface has fragmental appearance broken surface shows more disseminated pyrite, slightly magnetic.								
975-1008	As before								

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 8-A

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED March 1, 1963.

Line 128 E

LATITUDE 14150 N DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

125' West

DEPARTURE \_\_\_\_\_ BEARING North 42° West ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP Surface: 60°, 200'-52°, 400'-55° PROPOSED DEPTH 1000'

600'-58°, 800'-59° (all dips corrected for capillarity).

ASSAY VALUES

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-36	Overburden.								
36-50	Andesitic flow material, several 1/8"-1/4" pyrrhotite and minor chalcopyrite stringers at 45° to core at 37' and 40'. Rock is massive. Schistosity at 45° to core.								
50-75	As before, blebs of pyrrhotite through the rock, schistosity at 45° and 60° to core.								
75--100	Andesite as before, many small blebs and stringers of pyrrhotite with fair associated chalcopyrite sulphides 2-3% of rock. Test for nickel at 87' negative.								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling SIGNED G.S. Willson

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 8-A

SHEET NUMBER 2 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
100-125	Andesite as before, 105'-117'								
	numerous calcite stringers parallel and								
	60° to core, pyrrhotite occurring along margins								
	of the calcite, total amount of pyrrhotite								
	reduced. Negative test for nickel at 118'.								
	117-120 banded cherty material much								
	pyrrhotite with minor chalcopyrite total								
	sulphides 10%.								
	120-125 Graphitic schist, schistosity								
	75° to core, some fine pyrrhotite stringers								
	parallel schistosity, considerable fine								
	magnetite associated with graphite.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 8-A

SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
125-150	125-128 graphitic schist with considerable stringy pyrrhotite. 128-137 chert zone, stringers of pyrrhotite parallel schistosity at 75° to core.								
	137-150, Norite, disseminated and stringy pyrrhotite as before with associated minor chalcopyrite, sulphides 2%? Schistosity 45° to core.								
150-175	Norite fair disseminated Pyrrhotite - 1%								
175-200	Norite as before								
200-225	Norite as before								
225-250	Norite.								

DRILLED BY..... SIGNED G.S. Willson



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 8-A

SHEET NUMBER 4 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
250-275	250-260 Norite.								
	260-275 Talc Schist, schistosity								
	65°-75° to core, recovery 265-272								
	60%; 272-278 sludge only - the								
	sludge is talc schist. Talc schist is								
	now magnetic.								
275-350	275-280 no core								
	280-350, Talc schist, this								
	appears to be the alteration of what								
	was originally a								
	peridotite. Relicts of feldspar								
	phenocrysts and mafic phenocrysts								
	still appear in the rock, but it is now								
	composed almost wholly of talc - It is now magnetic.								

NORTHERN MINER FORM 905 REV. 54

DRILLED BY..... SIGNED G.S. Willson

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 8-A

SHEET NUMBER 4A SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
350-375	Talc Schist as before, color darkening more green - increasing chlorite- now magnetic, schistosity 70° to core.								
375-400	Talc Schist to 376. 376--400 - Peridotite, moderately magnetic hard, equigranular. Chips come to magnet, more mafic minerals, darker color.								
400-425	Peridotite, strongly magnetic (chip leaps to magnet) a few quartz-carbonate veinlets parallel schistosity at 45°-60° to core.								
450-475	Peridotite, strongly magnetic.								
475-525	Peridotite as before.								

NORTHERN MINER FORM 505 REV. 54

DRILLED BY..... SIGNED G.S. Willson

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 8-A

SHEET NUMBER 5 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
525-575	Peridotite as before strongly magnetic, 565-575 porphyritic appearance due to relicts of feldspar crystals.								
575-625	Peridotite as before, porphyritic appearance continues, increasingly chloritic, strongly magnetic.								
625-650	Peridotite as before, to 640, then highly chloritic, Much broken core, strongly magnetic. Schistosity 60° to core.								
650-675	Chloritized peridotite, schistosity 60°-70° to core, some fractures 10-30° to core, causing splintering of core, strongly magnetic.								
675-700	As before, few quartz-carbonate veinlets parallel and 60° to core, strongly magnetic.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 8-A.....

SHEET NUMBER 6 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
700-725	As before, much broken core, a few nodules of coarse bright pyrite crystals, strongly magnetic.								
725-750	Chloritized peridotite, schistosity 60° to core, fair number of small quartz-calcite stringers parallel schistosity. Rock is now weakly magnetic.								
750-800	Peridotite, somewhat chloritic but less than above, strongly magnetic.								
800-825	Peridotite as before, somewhat finer grained strongly magnetic, fair number of small quartz-calcite veinlets.								
825-875	Peridotite as before, strongly magnetic, schistosity 60° to core, fair number of small quartz-carbonate stringers parallel schistosity								

NORTHERN MINER FORM 505 REV./54

DRILLED BY..... SIGNED C.S. Willson

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 8-A  
 SHEET NUMBER 7 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
875-925	peridotite as before, strongly magnetic schistosity 60° to core, fair number small quartz-calcite-talc stringers parallel schistosity.								
925-950	Peridotite, finer grained less strongly magnetic, fair number of small quartz-carbonate stringers parallel schistosity at 60° to core.								
	938-939 lost core.								
950-975	Peridotite, moderately magnetic, more siliceous quartz-carbonate stringers as before.								
975-1000	As before- recovery 950-1000 about 90%.								

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 9-D

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED March 10, 1963

Line 12 E

LATITUDE 13120 S DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_

150' E

DEPARTURE \_\_\_\_\_ BEARING N 22° W ULTIMATE DEPTH \_\_\_\_\_

ELEVATION \_\_\_\_\_ DIP COLLAR 60°, 200' - 64.5°, 400' - 63.5° PROPOSED DEPTH 1000'

(Dips corrected for capillary

ASSAY VALUES rity

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-207	Overburden								
207-225	Dunite with a few picrolite stringers		30°	70°	to core.				
	3 hairline chrysotile veinlets	223-224.							
225-275	As before to 245, few hairline chrysotile veinlets at								
	236-237, 243-245.								
	245-255 and 265-275, gabbro facies, coarsely granular, few								
	hairline chrysotile veinlets at 253-255 and 265-267.								
	schistosity 45°-60° to core, strongly magnetic.								
275-350	Dunite as before, gabbro facies at 275-280, 327-331 and								
	320-325. Hairline chrysotile veinlets at 279, 288, 290-292,								
	297-298, 300-302, 312-313, 324-327, 330-334.								
	339-340. Grey siliceous band parallel schistosity at								
	50° to core at 347-349.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 9-D

SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
350-375	As before, strongly magnetic, hairline chrysotile veinlets 5 per foot at 351-355, 361-367, 373, 375.								
375-450	As before, gabbroic facies, hairline chrysotile veinlets 5 per foot at 391-396. 387- 1 foot selicification. 423-424, 1 foot breccia zone 400-450 Massive, schistosity at 60° to core.								
450-500	As before, hairline fibre veinlets 4 per foot at 450-460, and 475-480; elsewhere sparse. Schistosity 45° to core. Strongly magnetic.								
500-550	Dunite, strongly magnetic; schistosity 60-70° to core 515-525 - few hairline fibre veinlets. 525-550 about 12-15 hairline fibre veinlets per foot parallel schistosity at 60° to core also some slip fibre (1/4") at 531. Fibre length 1/2"								

NORTHERN MINER FORM 505 REV./54

DRILLED BY..... SIGNED G.S. Willson

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 9-D .....  
 SHEET NUMBER 3 ..... SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
550-650	Dunite as before, 550-562 hairline fibre veinlets @ 50 per foot parallel schistosity at 60° to core, also a number of small picrolite veinlets. Note - some sky blue calcite on slips. 592-603, hairline fibre veinlets 20 per foot parallel schistosity at 60° to core. 603-608, 624-625, picrolite veins parallel core. 612-624, rock more massive but with very fine veinlets of fibre parallel schistosity at 60° to core, strongly magnetic. 625-642, hair-line fibre veinlets parallel schistosity at 60° to core, 15 per foot.								



# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 9-D  
 SHEET NUMBER 4 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
650-700	Dunite as before , strongly magnetic, a few hair line veinlets intermittently throughout parallel schistosity at 60° to core. 660-3" picrolite veinlet, fibrous but brittle.								
700-775	Dunite, hairline fibre veinlets as before, strongly magnetic 700-705, 7-1/16" fibre veinlets 710-720, 10-1/16" fibre veinlets with a few hair line fibre veinlets. 720-750 blank except for 726-727 3-1/16" fibre veinlets 738-740 10-1/16" fibre veinlets 740-741 3-1/16" fibre veinlets 750-775 number of fine hair line fibre veinlets, 1-16" veinlet.								

# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 9-D  
 SHEET NUMBER 5 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
750-775	per foot, no. of picrolite stringers parallel and intersecting schistosity at 60° to core.								
767-770	broken core, picrolite veins parallel core with 12-1/16" fibre veinlets.								
775-800	Dunite- Schistosity at 60° to core, very few hair line fibre veinlets.								
800-900	Dunite, schistosity at 60° to core, strongly magnetic, a fair number of picrolite veinlets no fibre.								
900-950	Peridotite, much talc-carbonate alteration, schistosity at 70° to core, now magnetic at 950.								
950-992	Peridotite as before, slightly magnetic at 975.								

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 10-A  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED March 22, 1963  
Line 108 E  
 LATITUDE 22°50' N DATUM \_\_\_\_\_ COMPLETED \_\_\_\_\_  
 DEPARTURE \_\_\_\_\_ BEARING S 45° E ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP Collar 60°, 200'-59°, 400'-58° PROPOSED DEPTH 1000  
(Dips corrected for Capillarity)

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-23	Overburden.								
23-100	Olivine Peridotite, practically all olivine with 25% other mafic minerals, porphyritic appearance due to relicts of feldspar crystals now rounded and altered. Strongly magnetic schistosity 60° to core, number of small picrolite veinlets mostly parallel schistosity.								
100-200	Olivine Peridotite as before, strongly magnetic, fair number of picrolite and serpentine veinlets parallel schistosity at 60° to core, no fibre.								
	125-127 ground core								
	171-172 ground core								
200-300	Olivine Peridotite as before, strongly magnetic, several quartz-carbonate stringers 45° to core, a number of fine picrolite veinlets.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 10-A

SHEET NUMBER 2 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
200-300	284-300 talcose veinlets and replacement by talc, slightly magnetic,								
300-400	Peridotite, much carbonate-talc alteration, strongly magnetic. 305-315 finer grained looks like serpentinized basaltic flow.								
	327-400 " " " " " " " "								
400-475	Peridotite, strongly magnetic, schistosity 60° to core a few quartz-carbonate stringers generally parallel schistosity, no indications of fibre.								
475-600	Serpentinized Peridotite, schistosity 45°-60° to core, strongly magnetic. 486-490 talc carbonate alteration. 517-570 talc carbonate alteration.								
600-675	Serpentinized Peridotite much talc carbonate alteration non magnetic.								

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# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 10-A

SHEET NUMBER 4 SECTION FROM..... TO..... STARTED March 22, 1963.

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP Collar 60°, 200'-59°, 400'-58° PROPOSED DEPTH 1000'

600'-55.5°, 800'-55° (Dips corrected for capillarity)

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
675-775	Talcose Peridotite, much less olivine, strongly magnetic, schistosity at 60° to core, a fair number of small calcite stringers.								
775-850	Talcose Peridotite, becoming more talcose, only very slightly magnetic. 840-850 90% talc.								
850-925	Peridotite (?) largely altered to talc carbonate material, a number of small quartz - carbonate stringers parallel schistosity at 60° to core. Only very slightly magnetic.								
925-1003	Peridotite largely altered to talc carbonate to 978. 978-1000 - Gabbro fine grained. 1000-1003 Altered gabbro, much fine biotite Schistosity 60° to core.								

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# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 11-D

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED March 25, 1963

Line 4 E

LATITUDE 14°00 S. DATUM \_\_\_\_\_ COMPLETED April 9, 1963

DEPARTURE \_\_\_\_\_ BEARING North ULTIMATE DEPTH 765

ELEVATION \_\_\_\_\_ DIP \_\_\_\_\_ PROPOSED DEPTH 1000'

(Dips corrected for capillarity)

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-216	Overburden								
216-275	Dunite, light green color strongly magnetic, numerous hair line fibre veinlets in dendritic pattern composing 0.5 to 1.0% of core.								
275-350	Dunite as before, numerous hair line dendritic fibre stringers composing 0.5% of core, schistosity at 60° to core.								
350-425	Dunite, porphyritic appearance due to irregular light patches in the dunite, very few hair-line fibre veinlets.								
425-500	Dunite, porphyritic appearance, schistosity 45° to 60° to core, a very few fine fibre veinlets, some minor slip fibre.								
500-575	Dunite, porphyritic appearance, few fibre veinlets at 520, 540, and 570.								
575-625	Dunite, porphyritic appearance, few fibre veinlets at 608.								

NORTHERN MINER FORM 505 REV./54

DRILLED BY Continental Diamond Drilling SIGNED G.S. Willson







# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 12 J

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED April, 1963

Line 60 E

LATITUDE 1450 S 250' E. DATUM \_\_\_\_\_ COMPLETED April 14, 1963

DEPARTURE \_\_\_\_\_ BEARING N. 29° W ULTIMATE DEPTH 1010'

ELEVATION \_\_\_\_\_ DIP Collar -60°, 200' -65°, 400' -63° PROPOSED DEPTH 1000'

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-108	Overburden								
108-175	Syenite porphyry, phenocrpts of albite feldspar, Schistosity 45-60° to core, much olivine, non magnetic.								
175-250	Syenite porphyry as before to 230, then olivine peridotite equigranular, core much broken, schistosity 45° + 60° to core.								
250-325	Olivine Peridotite, much broken core, no fibre, magnetic in places.								
325-350	Olivine Peridotite, no fibre, platy pyrrhotite and pyrite on slips, very thin.								
350-425	Olivine Peridotite, a few narrow picrolite veinlets generally parallel schistosity at 60° to core, no fibre, strongly magnetic.								
425-525	Olivine peridotite, much broken core, a fair number of small picrolite veinlets parallel schistosity at 60° to core, strongly magnetic								

NORTHERN MINER FORM 803 REV./54

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# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 12-J.....  
 SHEET NUMBER 2..... SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
525-600	Peridotite, much olivine, increasing talc-carbonate alteration schistosity 60° to core, much broken core, strongly magnetic.								
600-675	Talcose Peridotite, numerous quartz-carbonate stringers, rock largely altered to talc-chlorite. 625-638 fissile talc schist - non magnetic.								
675-750	Peridotite altered to talc-chlorite to 710. 710-750 Peridotite with much white feldspar (albite) in olivine ground mass, non magnetic								
750-825	Peridotite- serpentized with much white feldspar, non magnetic to 805. 805-825 peridotite, talc chlorite alteration, schistosity 60° to core								
825-947	Peridotite-grey color-talc chlorite alteration schistosity 60° to core some quartz, carbonate stringers.								
847-1010	Peridotite - strongly magnetic, much less talc.								

NORTHERN MINER FORM 505 REV./54

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# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LTD. HOLE No. 13 E

SHEET NUMBER 1 SECTION FROM            TO            STARTED April 10, 1963

LATITUDE Line 64 W DATUM            COMPLETED May 5, 1963

DEPARTURE 24:00 S BEARING North ULTIMATE DEPTH 1000'

ELEVATION            DIP Collar 60°, 200'-64°, 400'-58°, 600'-58°, 800'-58° PROPOSED DEPTH           

Dips corrected for capillarity

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-210	Overburden								
210-300	Olivine peridotite, disseminated magnetite, number of quartz-carbonate veinlets, schistosity at 60° to core.								
300-400	Olivine Peridotite, strongly magnetic, disseminated magnetite throughout, schistosity at 60° to core.								
400-500	Olivine peridotite, as before.								
	character sample sent to Toronto to be tested for chromite and nickel.	407.9	408.25						
	494-497 quartz talc alteration.								
500-575	Olivine peridotite to 525								
	525-561 grey talcose peridotite, now magnetic.								
	561-575 olivine peridotite.								
575-625	Olivine peridotite with 1"-2" bands of talc to 602			602					
	602-617 grey talc alteration, now magnetic.								

NORTHERN MINER FORM 505 REV. 784

DRILLED BY CONTINENTAL DIAMOND DRILLING

SIGNED G.S. Willson

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 13 E  
 SHEET NUMBER 2 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
575-625	(continued), 617-625 olivine peridotite strongly magnetic.								
625-700	Talcose peridotite, numerous quartz-carbonate stringers some parallel schistosity at 60° to core, strongly magnetic. 655 - test for nickel gives very faint trace.								
700-800	Olivine peridotite, numerous quartz-carbonate stringers. 725-750 talcose peridotite. 750-765 siliceous alteration.								
800-900	Olivine peridotite, strongly magnetic, numerous quartz-carbonate stringers, some dendritic picrolite veinlets. 881 - several hair-line dendritic fibre veinlets.								
900-1000	Olivine peridotite, magnetic, blebs of magnetite throughout, schistosity 70° to core. 960-975 increasingly talcose 975-1000 talcose peridotite								

NORTHERN MINER FORM 305 REV.154

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# DIAMOND DRILL RECORD

PROPERTY MISTANGO RIVER MINES LTD HOLE No. 14 B

SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED April 15, 1963.

LATITUDE line 56 E DATUM \_\_\_\_\_ COMPLETED April 26, 1963.

DEPARTURE 9450 N. 25' E BEARING N 29° W ULTIMATE DEPTH 1000'

ELEVATION \_\_\_\_\_ DIP Collar 60°, 200'-62°, 400'-60° PROPOSED DEPTH 1000'  
600'-59°, 800'-59° (Dips corrected for capillarity)

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-107	Overburden.								
107-200	Olivine peridotite (25% other mafic minerals), pisolitic appearance, pisolites of olivine and grained mass of talc carbonate, small veinlets of turquoise picrolite almost but not quite fibrous, schistosity 60° to core, several quartz stringers parallel schistosity, strongly magnetic.								
200-385	Olivine peridotite as before, strongly magnetic, 300-350 increasing number of quartz stringers parallel to schistosity at 60° to core.								
385-425	Peridotite, more talc carbonate alteration increasing amount of silica, non magnetic.								
425-475	Peridotite as before, less silica								
	450-475 increasing chlorite								

NORTHERN MINER FORM 505 REV./84

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# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 14 B

SHEET NUMBER 2 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
475-600	Peridotite								
	480-485 chlorite talc alteration much biotite								
	485-600 olivine peridotite, strongly magnetic.								
600-675	Peridotite								
	600-615 Olivine peridotite as before								
	615-675 talcose peridotite								
675-750	Talcose peridotite, strongly magnetic, number of quartz stringers parallel schistosity at 60° to core.								
750-825	Olivine peridotite, numerous small carbonate stringers weakly magnetic.								
825-900	Olivine peridotite as before, at 875, 2 small picrolite veinlets fibre brittle and powdery. 885-900 increasing carbonate								
900-1000	olivine peridotite, 900-925 some carbonate greyish color several coarse picrolite veinlets.								

NORTHERN MINER FORM 503 REV./84

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# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 15 B  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED April 27, 1963  
 LATITUDE Line 44 E DATUM \_\_\_\_\_ COMPLETED May 2, 1963  
 DEPARTURE 7+00 N BEARING North ULTIMATE DEPTH 510'  
 ELEVATION \_\_\_\_\_ DIP Collar 60°, 200'-59°, 400'-58° PROPOSED DEPTH 500'  
(Dips corrected for capillarity)

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-125	Overburden.								
125-200	Olivine Peridotite, veinlets of serpentine throughout, strongly magnetic, schistosity 60° to core.								
200-300	Olivine Peridotite, strongly magnetic, 250-275 a number of quartz - calcite stringers parallel schistosity at 60° to core.								
300-400	Olivine peridotite, many small serpentine veinlets strongly magnetic.								
400-510	Olivine peridotite, strongly magnetic, positive tests for nickel at 412, 431, and 437 - character sample at 412. 4642, 410, 415, 5'0" several hair-line fibre veinlets. Note considerable platy pyrite on slips.								

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Ltd. HOLE No. 16 D  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED May 3, 1963  
 LATITUDE Line 44 E DATUM \_\_\_\_\_ COMPLETED May 9, 1963  
 DEPARTURE 2100 S BEARING South ULTIMATE DEPTH 501'  
 ELEVATION \_\_\_\_\_ DIP Collar 60°, 200'-61°, 400'-60° PROPOSED DEPTH 500'

(Dips corrected for capillarity)

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-133	Overburden								
133-200	Olivine peridotite, strongly magnetic, pisolitic appearance, mainly composed of olivine with possibly 10% metallic oxides or sulphides. Positive nickel test at 141.75. sample - to be run for Ni+Cr. 4641 141' 1/2" 141' 11" 9 1/2". Character sample 141' 11" to 142' 2" (sent to Toronto). There are a few hair-line fibre veinlets 141 - 1/8" silky fibre veinlet. Some brittle slip fibre noted; many serpentine - carbonate veinlets throughout at varying angles to core.								
200-300	Olivine peridotite, many serpentine - carbonate stringers generally parallel schistosity at 60° to core. A number picrolite veinlets; much finely crystalline magnetite in bands and masses, these appear to have traces of								

NORTHERN MINER FORM 505 REV.754

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# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 16 D  
 SHEET NUMBER 2 SECTION FROM..... TO..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
200-300	nickel associated with them. Positive tests for nickel at 218, 220, 228 and 260.								
300-400	Olivine peridotite as before to 335.								
	335-363 very weak fibre section, hair-line and 1/8", fibre veinlets about 1 per foot mainly at 45° to core								
	363-366 chert zone								
	366-380 diabase dike								
	380-381 chert contact								
	387-400 weak fibre zone, hair line and 1/8" fibre veinlets. 1 per foot.								
	395.5-392 silicious dike at 30° to core, sharp contacts, lower one shows 2" oxidized zone.								
	400-501 Olivine peridotite as before.								

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 16-D

SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
400-501	(continued).								
	400-405 weak fibre zone continues; few dendritic hair line								
	fibre veinlets, strongly magnetic much magnetite,								
	fine grained and in blebs throughout the rock.								
	421 - positive test for nickel.								
	425-432 a few hair line fibre veinlets								
	470-485 1/8" - 1/4" slip fibre veinlets 1 every 2 feet,								
	fibre somewhat brittle.								
	495-501 several hair-line dendritic fibre veinlets.								

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 17 F  
 SHEET NUMBER 1 SECTION FROM \_\_\_\_\_ TO \_\_\_\_\_ STARTED May 7, 1963.  
 LATITUDE Line 92 W DATUM \_\_\_\_\_ COMPLETED May 21, 1963.  
 DEPARTURE 20100 S BEARING South ULTIMATE DEPTH \_\_\_\_\_  
 ELEVATION \_\_\_\_\_ DIP Collar 60°, 200'-63°, 400'-60° PROPOSED DEPTH 1000'  
600'-59°, 800'-55° 30'. (Dips corrected for Capillarity)

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-100	Overburden								
100-200	Olivine peridotite - possibly 10-15% other mafic minerals balance olivine, deep olive color, a few serpentine - carbonate stringers, numerous blebs and stringers of magnetite, strongly magnetic; schistosity 45° to core. 147 - test for nickel negative.								
200-300	Olivine peridotite as before, strongly magnetic a number of small serpentine - carbonate stringers parallel schistosity at 60°-70° to core, considerable magnetite in blebs and stringers.								
300-400	Olivine peridotite, pisolitic appearance, considerable magnetite in blebs and stringers, possibly 5%. Schistosity 50° to core. 367.25 - 368.5 Character Sample.								

NORTHERN MINER FORM 305 REV./54

DRILLED BY Continental Diamond Drilling

SIGNED G.S. Willson

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 17 F  
 SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED.....  
 LATITUDE..... DATUM..... COMPLETED.....  
 DEPARTURE..... BEARING..... ULTIMATE DEPTH.....  
 ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
400-500	Olivine peridotite, pisolitic appearance, a few small light green serpentine stringers, some disseminated chromite appearing at 475 (about the same as a previous sample which gave 0.22% chromium).								
500-600	Olivine peridotite, strongly magnetic, a fair number of small serpentine veinlets, numerous blebs and stringers of magnetite (±10%), schistosity 70° to core. 533 1 - 1/16" fibre veinlet.								
600-700	Olivine peridotite, strongly magnetic, porphyritic texture, much disseminated magnetite and chromite, possibly 10% and often occurs around the margins of the rounded phenocrysts.								
	Sample to be assayed for Ni Cr.	4643	605.5	606.5	1.0				

NORTHERN MINER FORM 505 REV. 54

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SIGNED G. S. Willson

# DIAMOND DRILL RECORD

PROPERTY..... HOLE No. 17 F

SHEET NUMBER 3 SECTION FROM..... TO..... STARTED.....

LATITUDE..... DATUM..... COMPLETED.....

DEPARTURE..... BEARING..... ULTIMATE DEPTH.....

ELEVATION..... DIP..... PROPOSED DEPTH.....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
600-700	(continued)								
	606.5 - 607.0								
	Character sample sent to Toronto.								
700-800	Olivine Peridotite as before, strongly magnetic,								
	Massive magnetite and								
	considerable chromite								
	in sample	4644	752'7"	753'3"	8"				
800-900	Olivine Peridotite, strongly magnetic, schistosity								
	at 60° to core, some platy pyrite on slips.								
	805-815 number of serpentine - carbonate veinlets at								
	30° to core.								
	850-900 number of small serpentine - carbonate								
	veinlets.								
900-999	Olivine peridotite, strongly magnetic, magnetite in blebs								
	and stringers as before, schistosity 70° to core, no indication of fibre								

NORTHERN MINER FORM 505 REV/754

950-999 A large No. of serpentine carbonate veinlets.

DRILLED BY.....

SIGNED.....

G.S. Willson

# DIAMOND DRILL RECORD

PROPERTY Mistango River Mines Limited HOLE No. 18 A  
 SHEET NUMBER 1 SECTION FROM            TO            STARTED May 4, 1963.  
 LATITUDE Line 120 E DATUM            COMPLETED May 8, 1963.  
 DEPARTURE 15450 N BEARING South ULTIMATE DEPTH 404'  
 ELEVATION            DIP COLLAR - 60°, 200'-60°, 400'-54° PROPOSED DEPTH 500'

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
0-25	Overburden								
25-125	Olivine peridotite, strongly magnetic, schistosity 60° to core, 75-125 some streaks of platy pyrite, rock hard and massive,								
125-175	Olivine peridotite, blebs and stringers of magnetite, core much broken and splintered, schistosity 50° to core. change to EX core at 147.								
175-200	Peridotite becoming talcose, core badly broken. Lost core 188-189, 191.5 - 192.5, 194-195.								
200-250	Peridotite increasingly silicose 214-217.5 chert with banded pyrite some pyrrhotite sulphides 2% total. 217.5-219 graphite, some banded pyrite minor chalcopryite (sulphides 2%) schistosity 45° to core. 219-220.5 banded chert.								



# DIAMOND DRILL RECORD

PROPERTY ..... HOLE No. 18-A  
 SHEET NUMBER 2 SECTION FROM ..... TO ..... STARTED .....  
 LATITUDE ..... DATUM ..... COMPLETED .....  
 DEPARTURE ..... BEARING ..... ULTIMATE DEPTH .....  
 ELEVATION ..... DIP ..... PROPOSED DEPTH .....

DEPTH FEET	FORMATION	SAMPLE NO.	FROM	TO	WIDTH	ASSAY VALUES			
200-250	(continued)								
	220.5-223 Graphite as before.								
	223-225.5 Banded chert with minor pyrite								
	225.5-231 Graphite with banded pyrrhotite and minor pyrite (sulphides 2%)								
	231-250 Silicified peridotite								
250-404	250-260 Silicified peridotite, several 2-3" quartz veins at 60° to core, considerable blebby pyrrhotite with minor chalcopyrite (sulphides 1-2% of total).								
	260-270 Biotite zone schistosity 70° to core, 251.25 positive test for nickel, bleb of pyrrhotite 252.7 positive test for nickel, bleb of pyrrhotite								
	277-404 Andesitic flow breccia, schistosity 60° to core, stringers of pyrrhotite with minor chalcopyrite								

NORTHERN MINER FORM 505 REV. 1/54

DRILLED BY ..... SIGNED G.S. Willson



GAMMAS

0 2000 4000 6000 8000 10,000

24+00-N

3861  
3849  
3815  
3799

20+00-N

3846  
3830  
3816  
3840

16+00-N

3766  
3740  
3786  
3896

12+00-N

3744  
3656  
3614  
3551

8+00-N

3681  
3619  
3581  
3507

4+00-N

3425  
3439  
3381  
3333

0+00

BS-1 3253  
3177  
3161  
3061

4+00-S

2943  
2913  
2899  
2975

8+00-S

3465  
4870  
5635  
6303

12+00-S

6725  
6857  
7306  
7036

16+00-S

7140  
7588  
7910  
7604

20+00-S

7655 7347 7639 7717 7757 7682 7602 7545 7391 7333

7360  
6505  
6446  
6602

24+00-S

6581  
6138  
5680  
5218

28+00-S

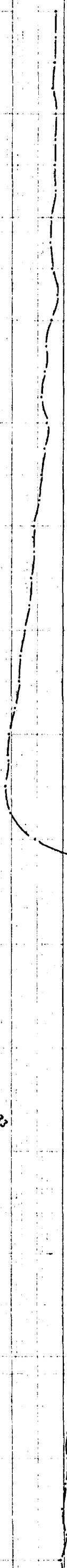
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4626  
4401  
4077

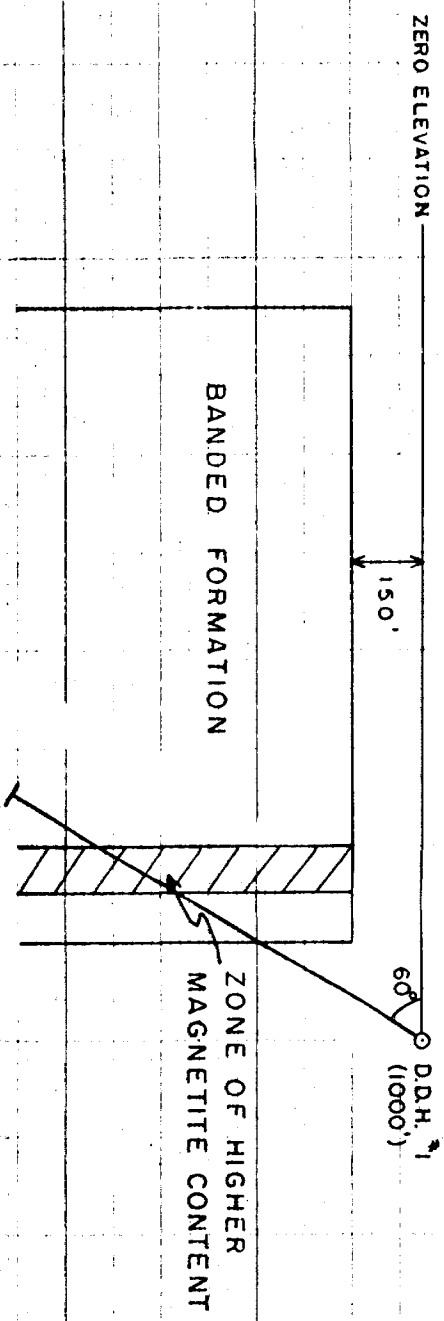
32+00-S

4067  
4014  
3966  
4066

36+00-S

3926





32+00-S

36+00-S

40+00-S

44+00-S

48+00-S

52+00-S

56+00-S

60+00-S

64+00-S

68+00-S

72+00-S

76+00-S

80+00-S

84+00-S

4626

4401

4077

4067

4014

3966

4066

3926

4096

4078

4024

4154

4166

4779

4998

5568

6512

7835

8293

8433

8923

8993

9113

8893

9033

9152

9342

10,374

10,212

8482

7074

6131

5963

5535

5513

5329

5230

5290

5214

5258

5136

5432

5674

5886

5838

5714

5544

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4821

4883

4807

4850

9518

9888

10,332

10,230

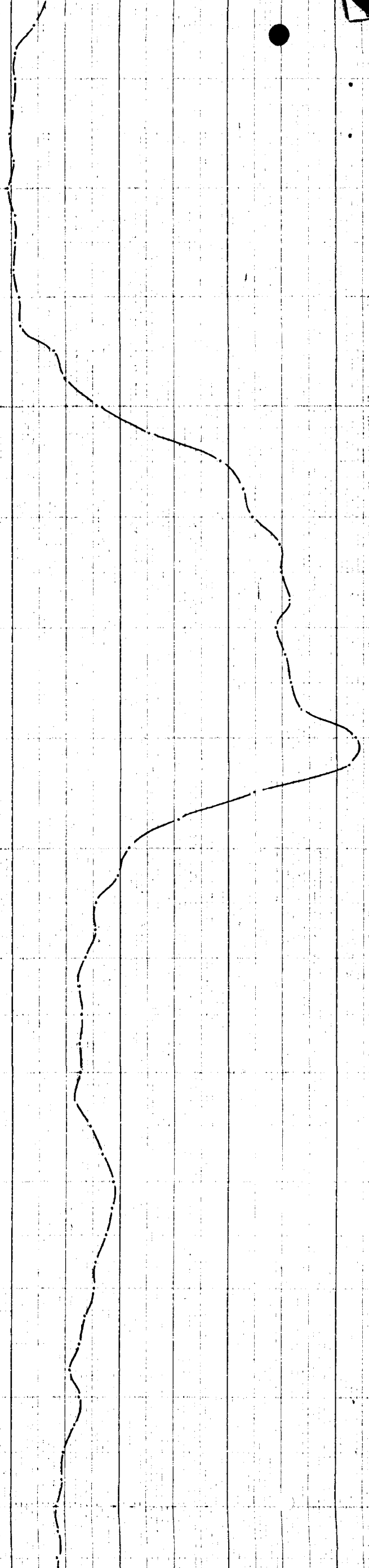
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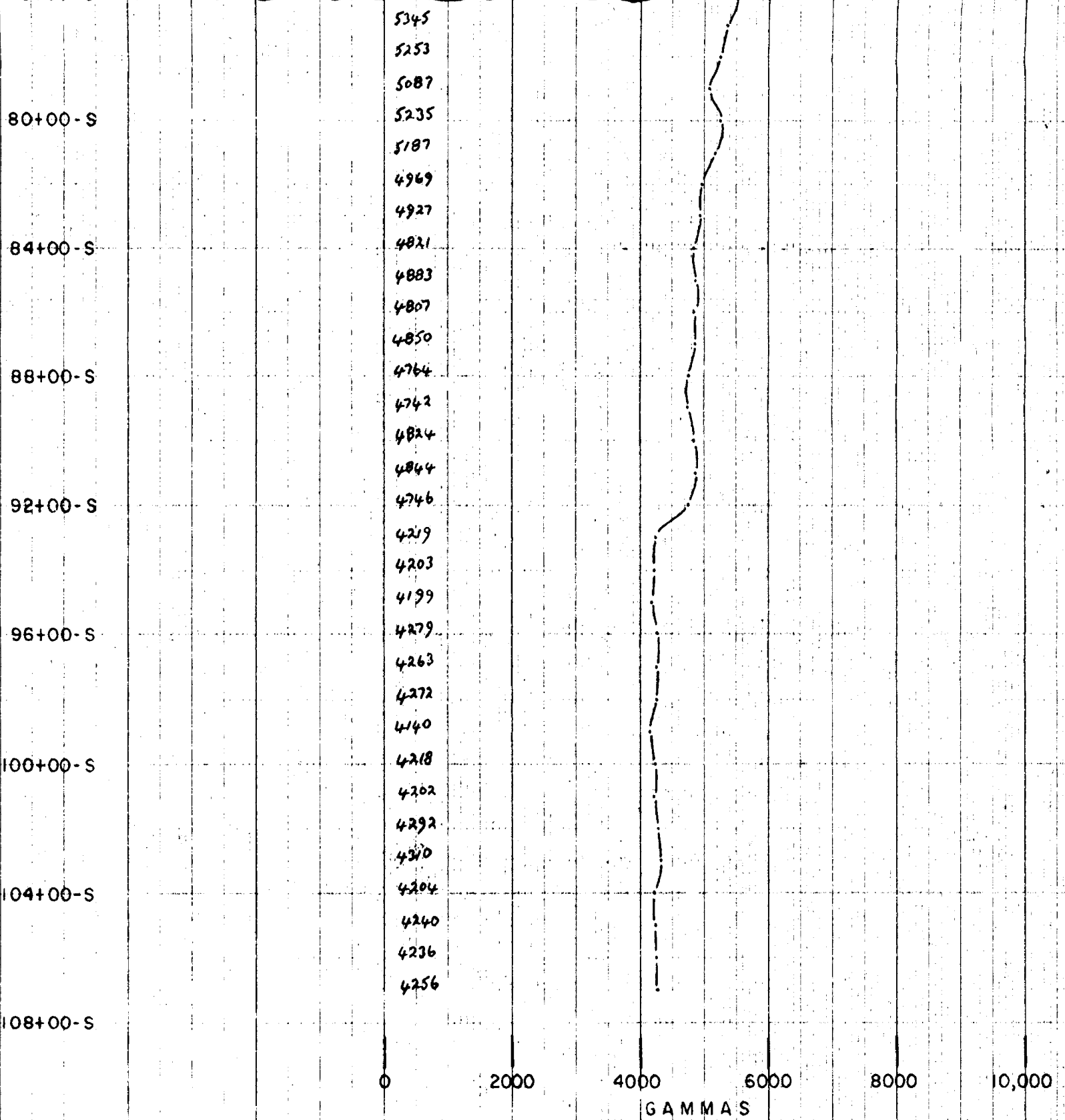
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10,714

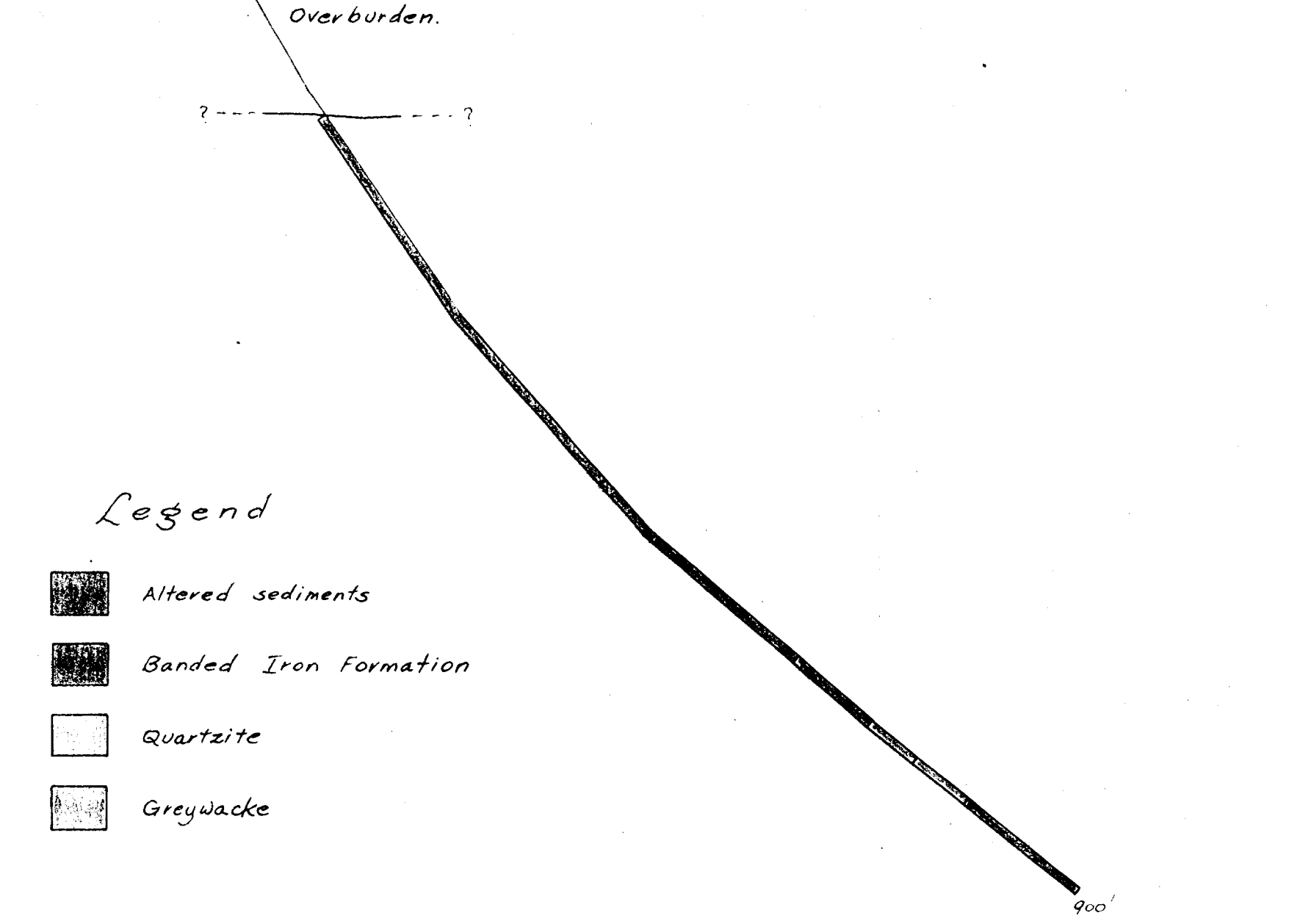
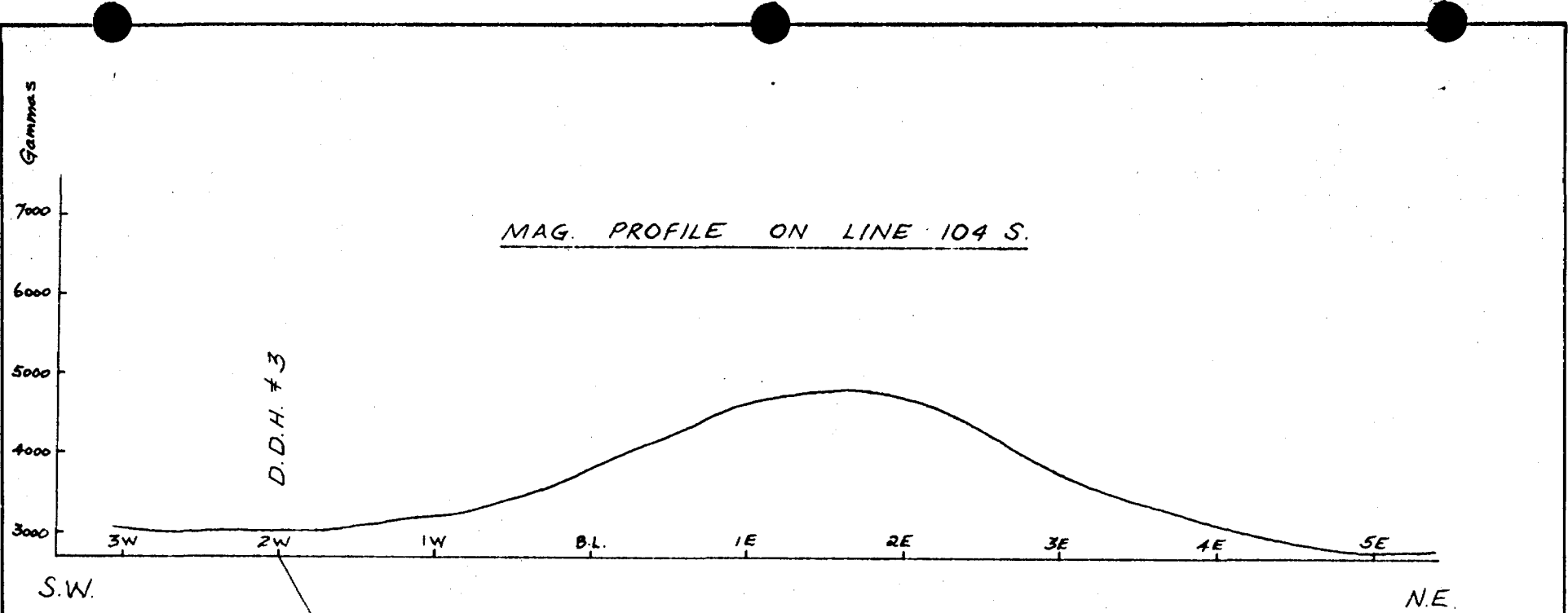








MISTANGO RIVER MINES LIMITED  
 TRAIL LAKE, MOODY TOWNSHIP, ONTARIO  
 GROUND MAGNETOMETER PROFILE

OVER  
 ANOMALY No. 6

Horizontal Scale : 1 inch = 400 feet



*Legend*

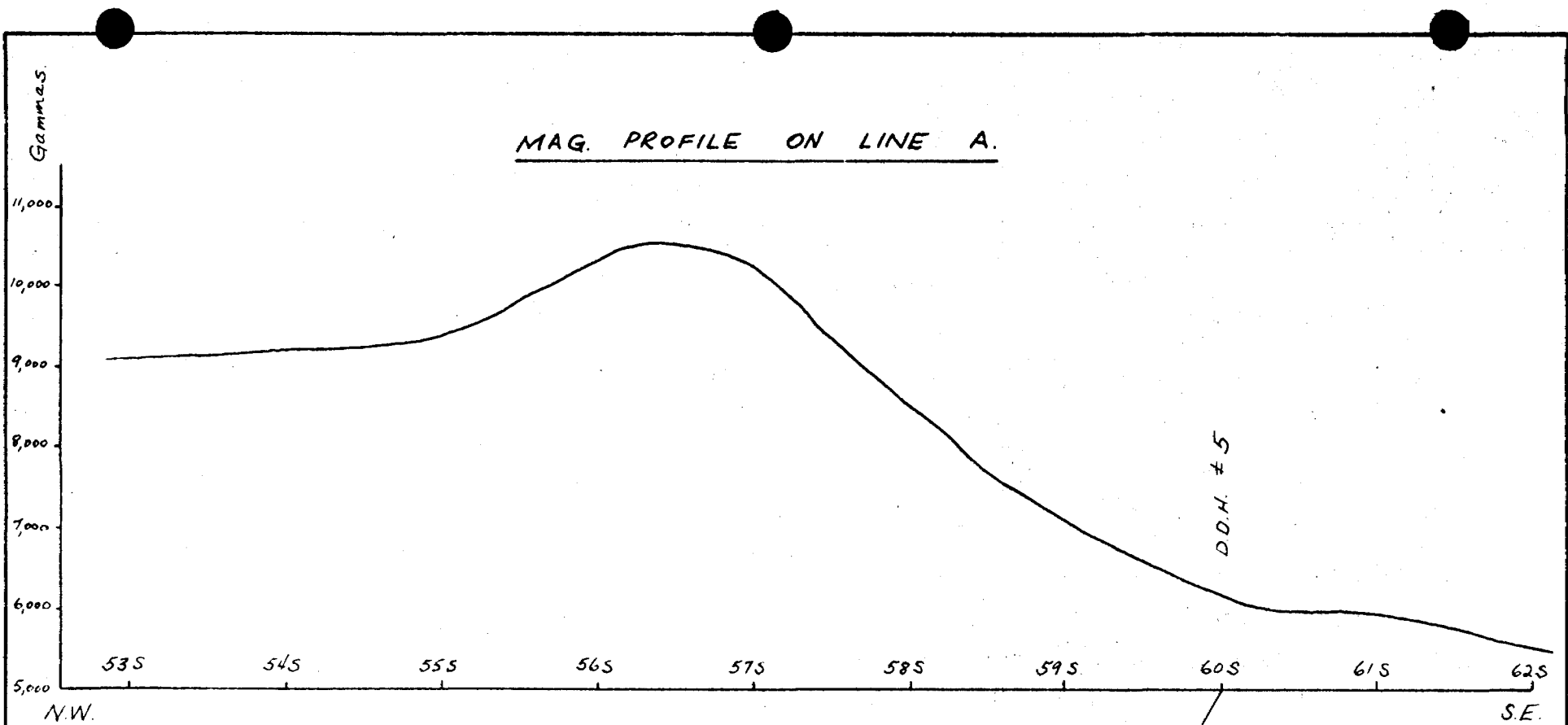
-  *Altered sediments*
-  *Banded Iron Formation*
-  *Quartzite*
-  *Greywacke*





*VERTICAL SECTION D.D.H. No. 3*

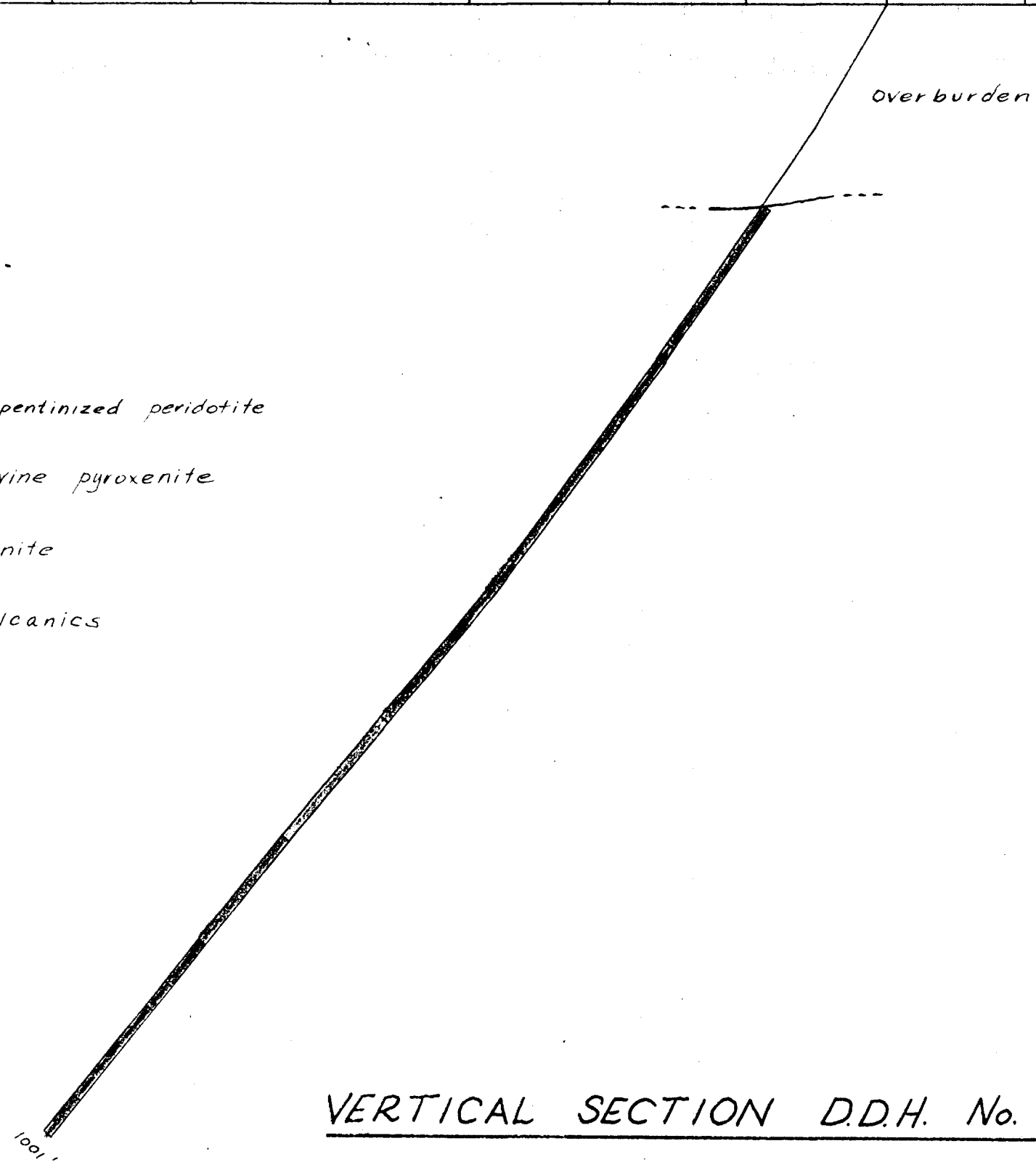
*MISTANGO RIVER MINES LTD.*

*MOODY TWP. — ONTARIO*

*Scales: 1" = 100'  
1" = 2000 gammas.*



-  *Serpentinized peridotite*
-  *Olivine pyroxenite*
-  *Dunite*
-  *Volcanics*



VERTICAL SECTION D.D.H. No. 5

MISTANGO RIVER MINES LTD.

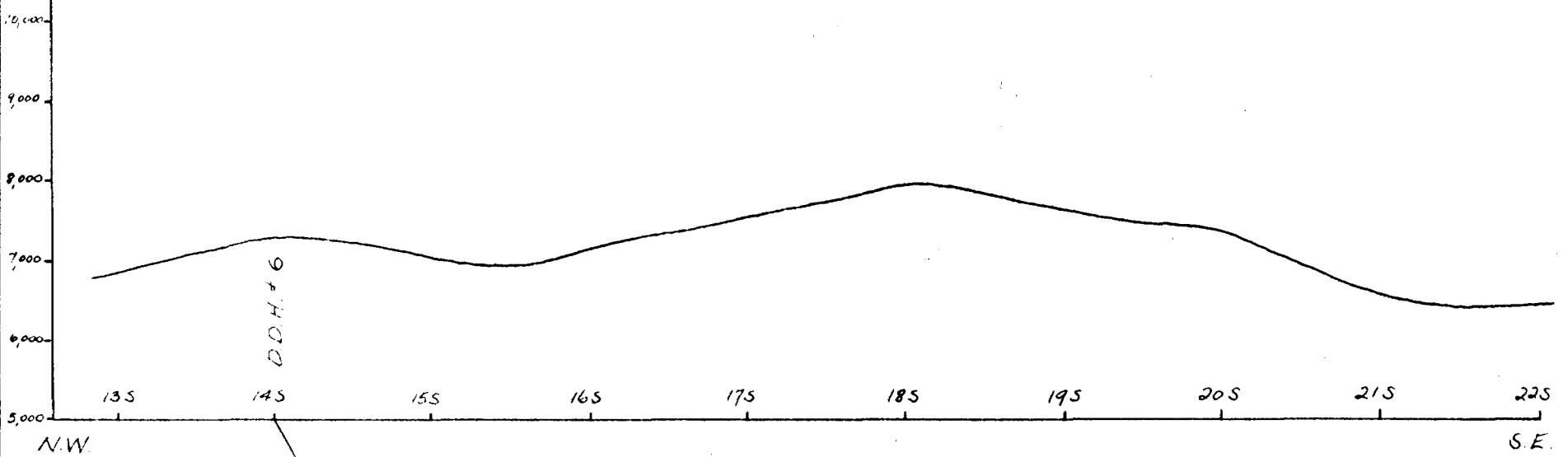
GALNA TWP. — ONTARIO

Scales: 1" = 100'  
1" = 2000 gamma's.

K.H.C. Nov. '62

Gamma's.

MAG. PROFILE ON LINE A.






N.W.

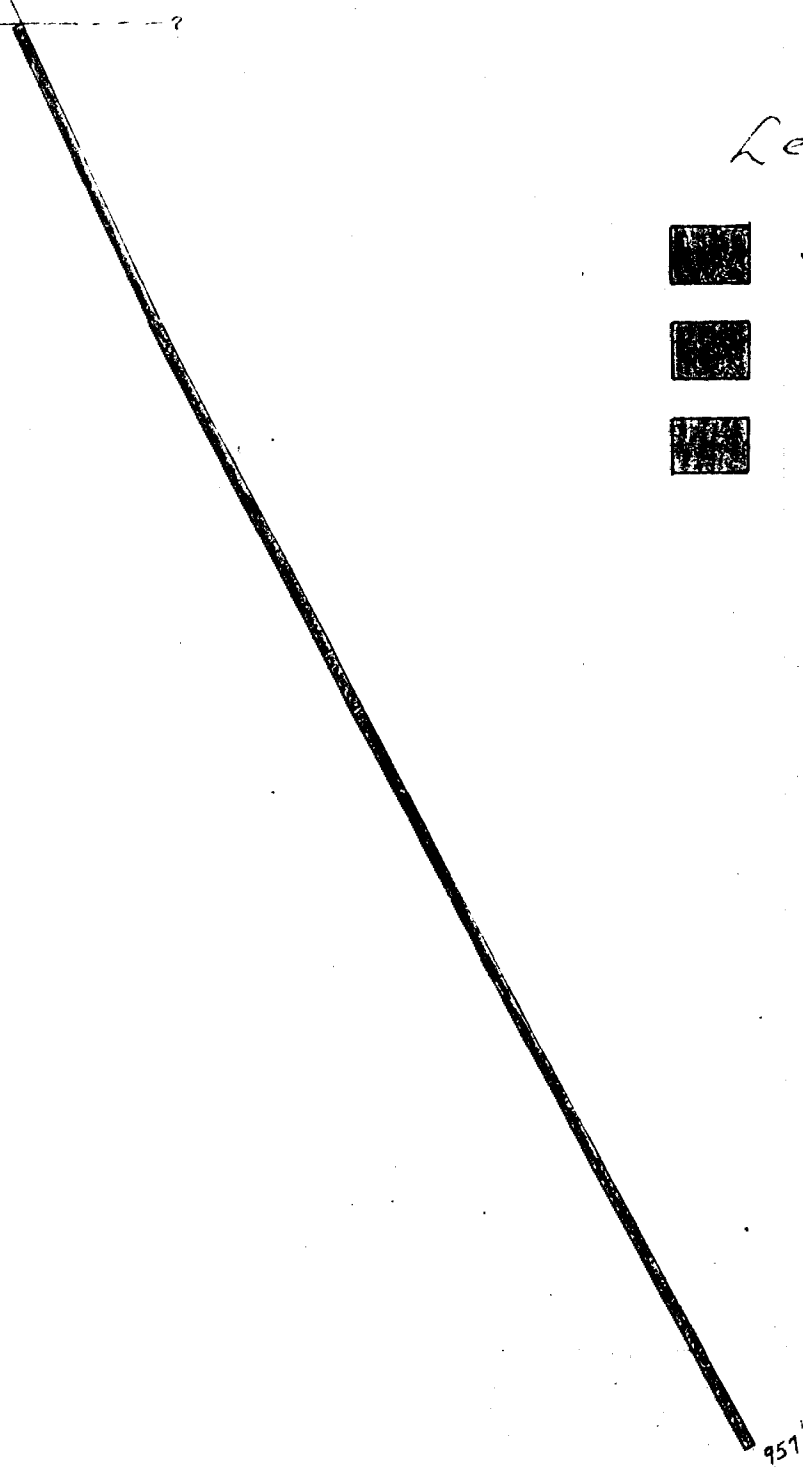
S.E.

Overburden.

-----?

Legend

-  Serpentinized peridotite
-  Olivine pyroxenite
-  Dunite



VERTICAL SECTION D.D.H. No. 6

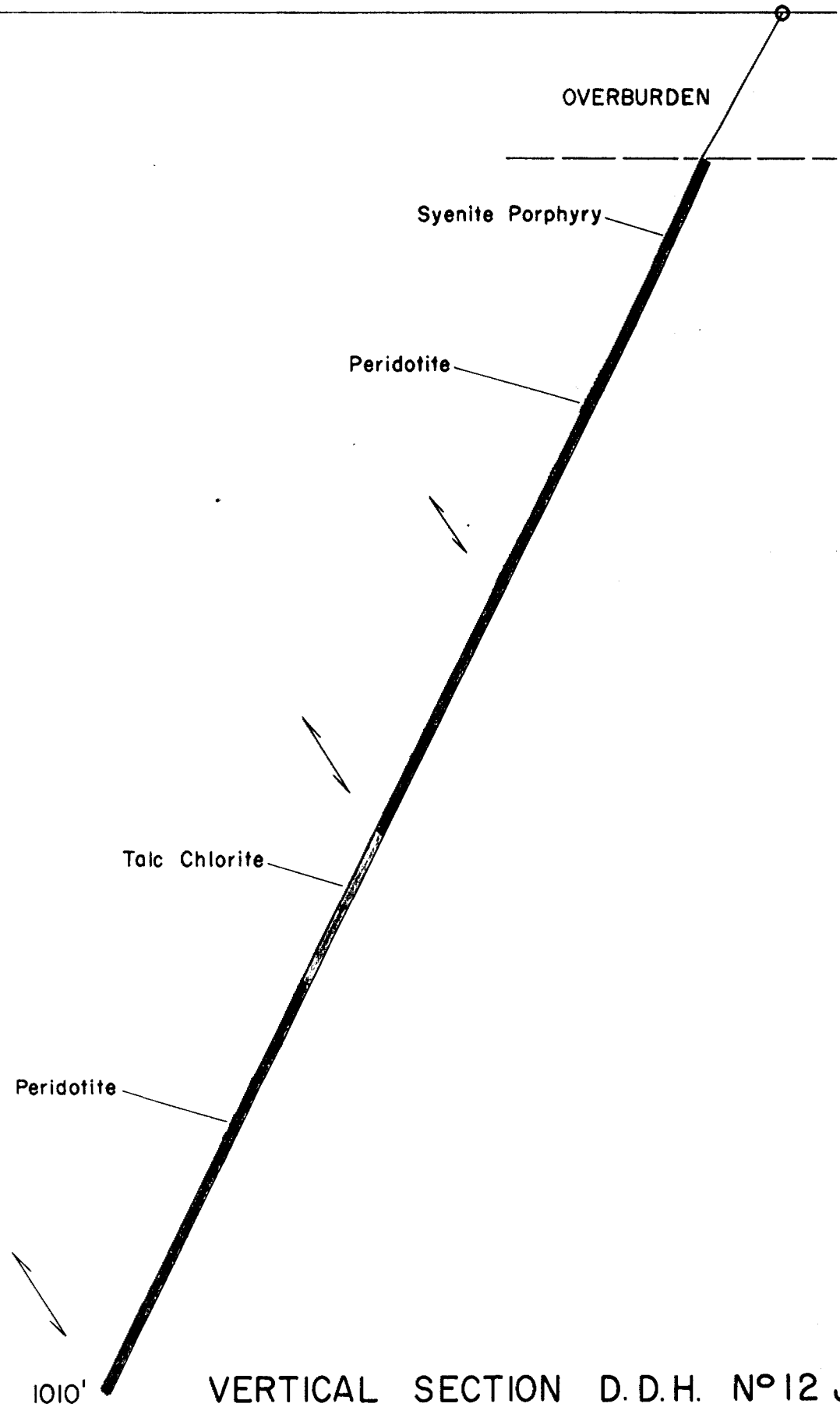
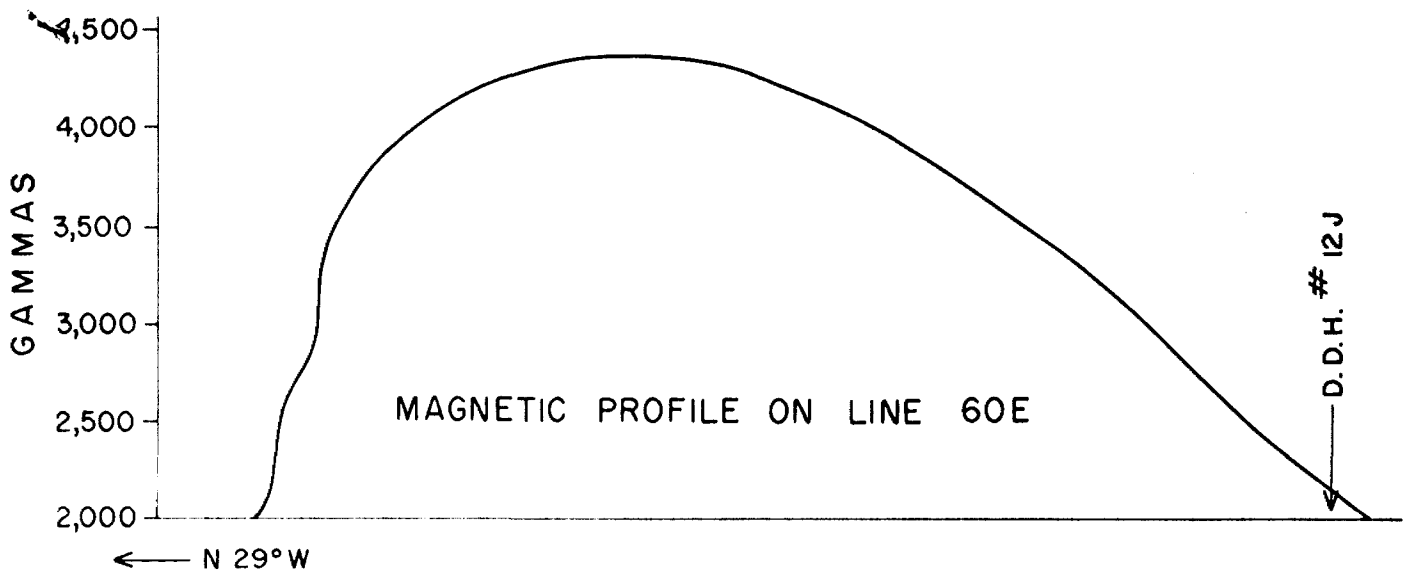
MISTANGO RIVER MINES LTD.

MOODY TWP. — ONTARIO

Scales: 1" = 100'  
1" = 2000 gamma's.

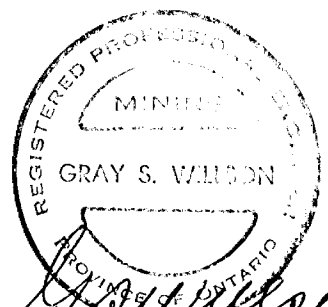
K.H.C. Nov. '62



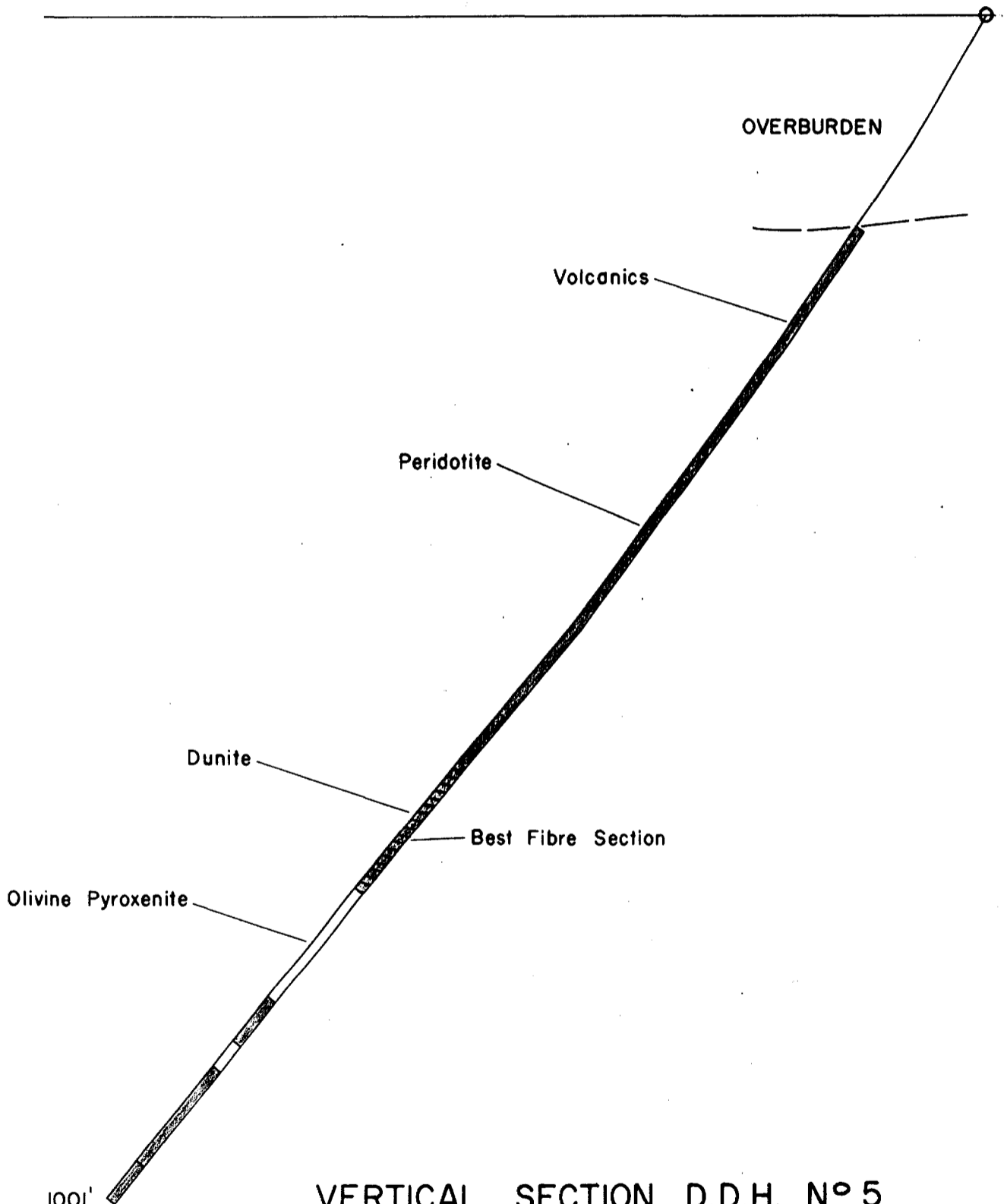
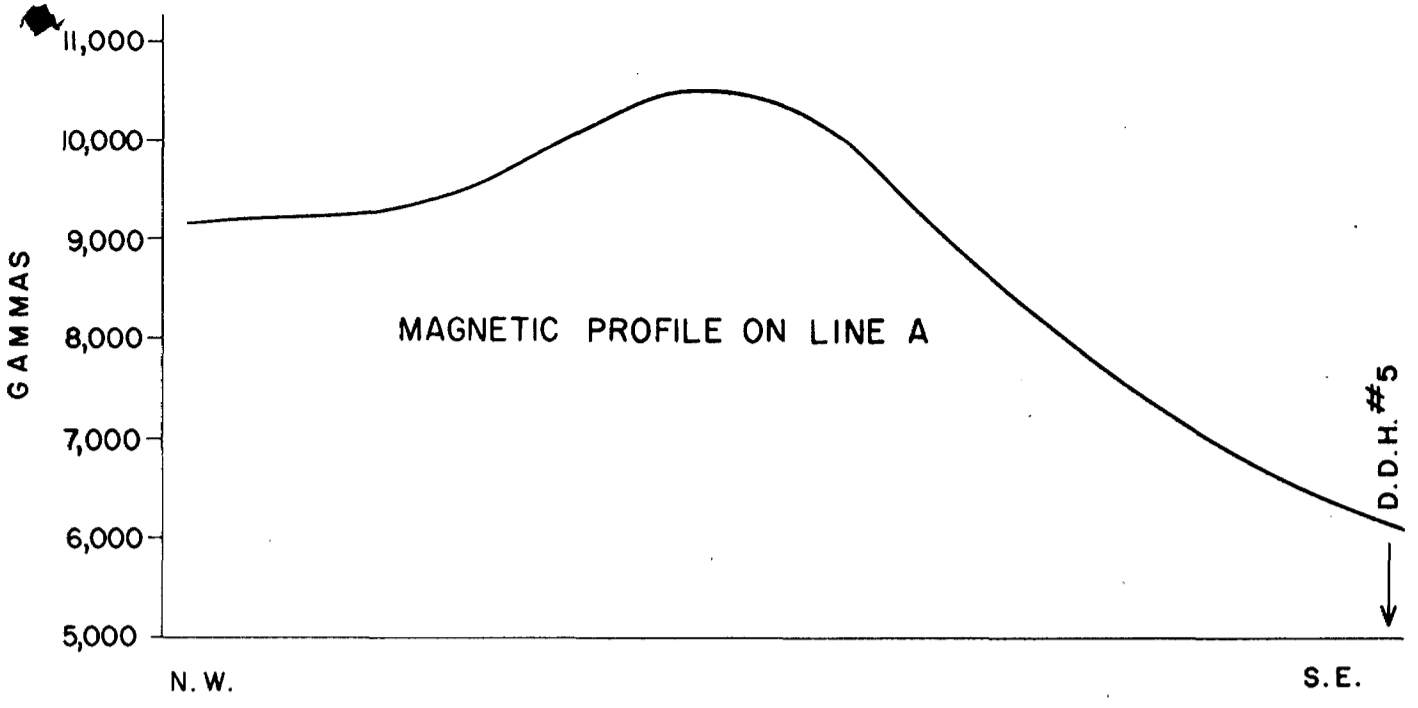


VERTICAL SECTION D.D.H. N° 12 J  
 ANOMALY N° 6  
 MISTANGO RIVER MINES LIMITED  
 GALNA TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet  
 MAGNETIC PROFILE - 1 inch = 1000 gammas

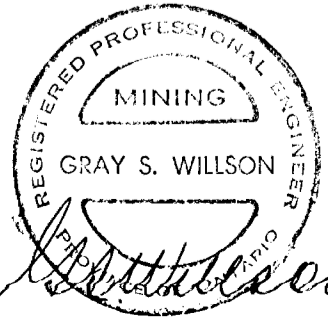


*Gray S. Wilson, July 2, 1963*

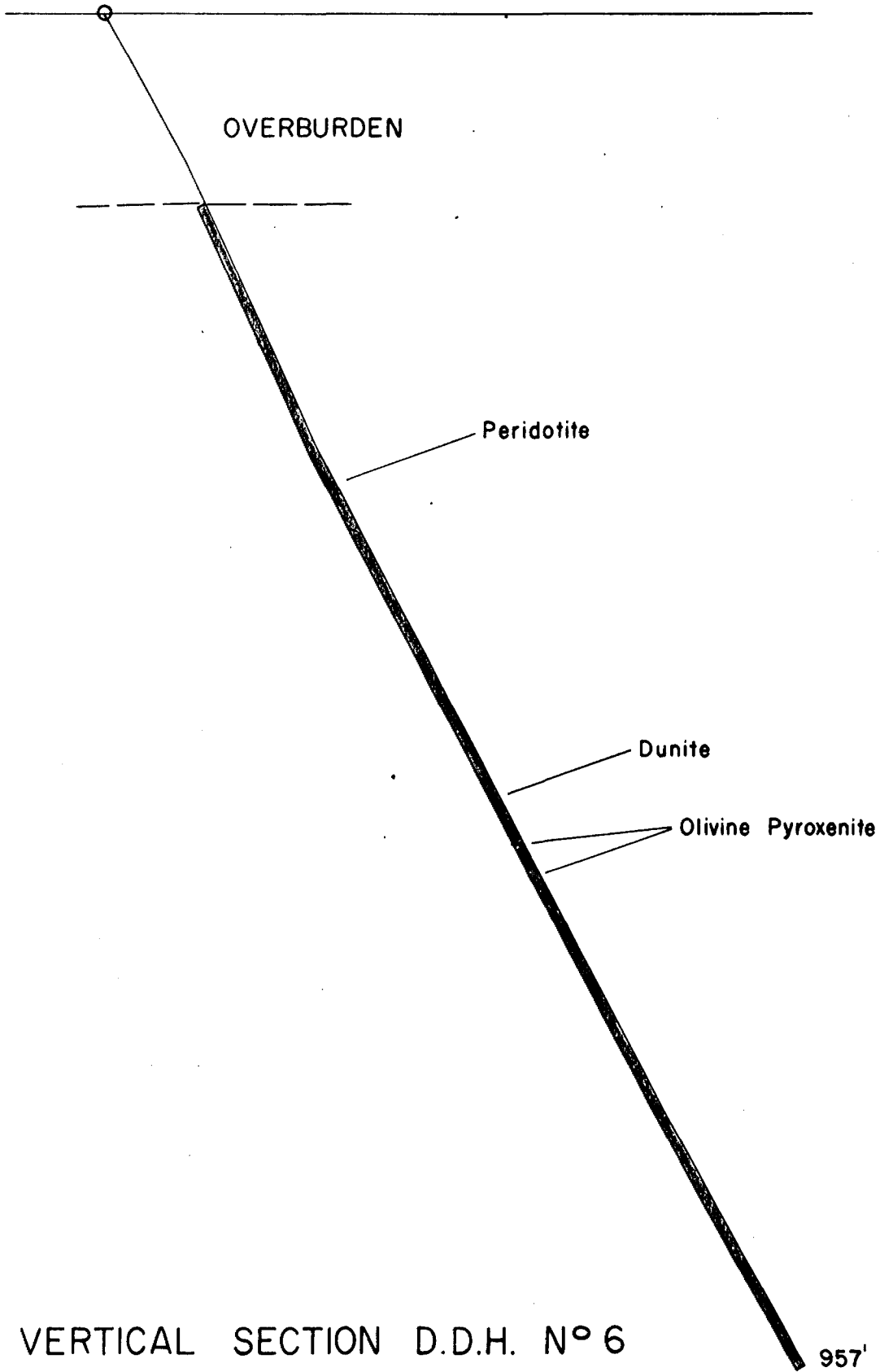
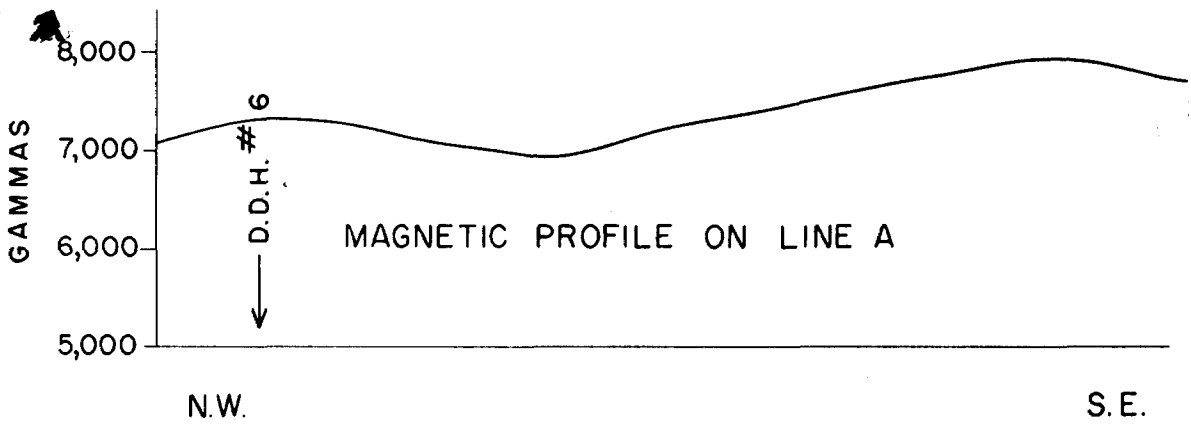


VERTICAL SECTION D.D.H. N° 5  
 ANOMALY N° 6  
 MISTANGO RIVER MINES LIMITED  
 GALNA TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1inch=100feet  
 MAGNETIC PROFILE - 1inch=2000gammas



*Gray S. Willson July 2, 1963*



VERTICAL SECTION D.D.H. N° 6

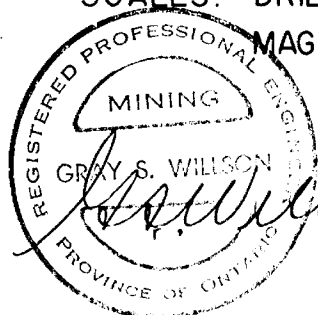
ANOMALY N° 6

MISTANGO RIVER MINES LIMITED

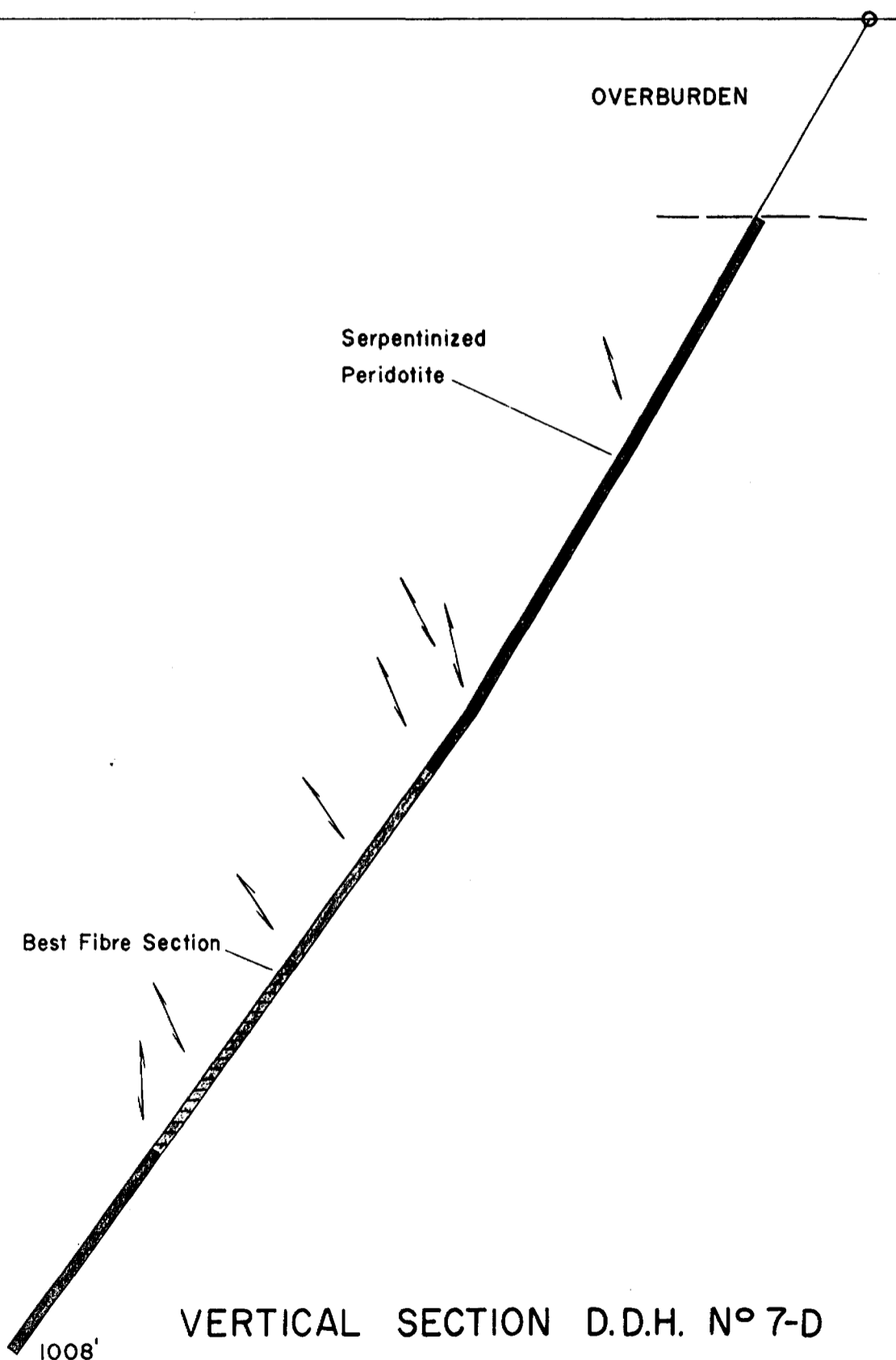
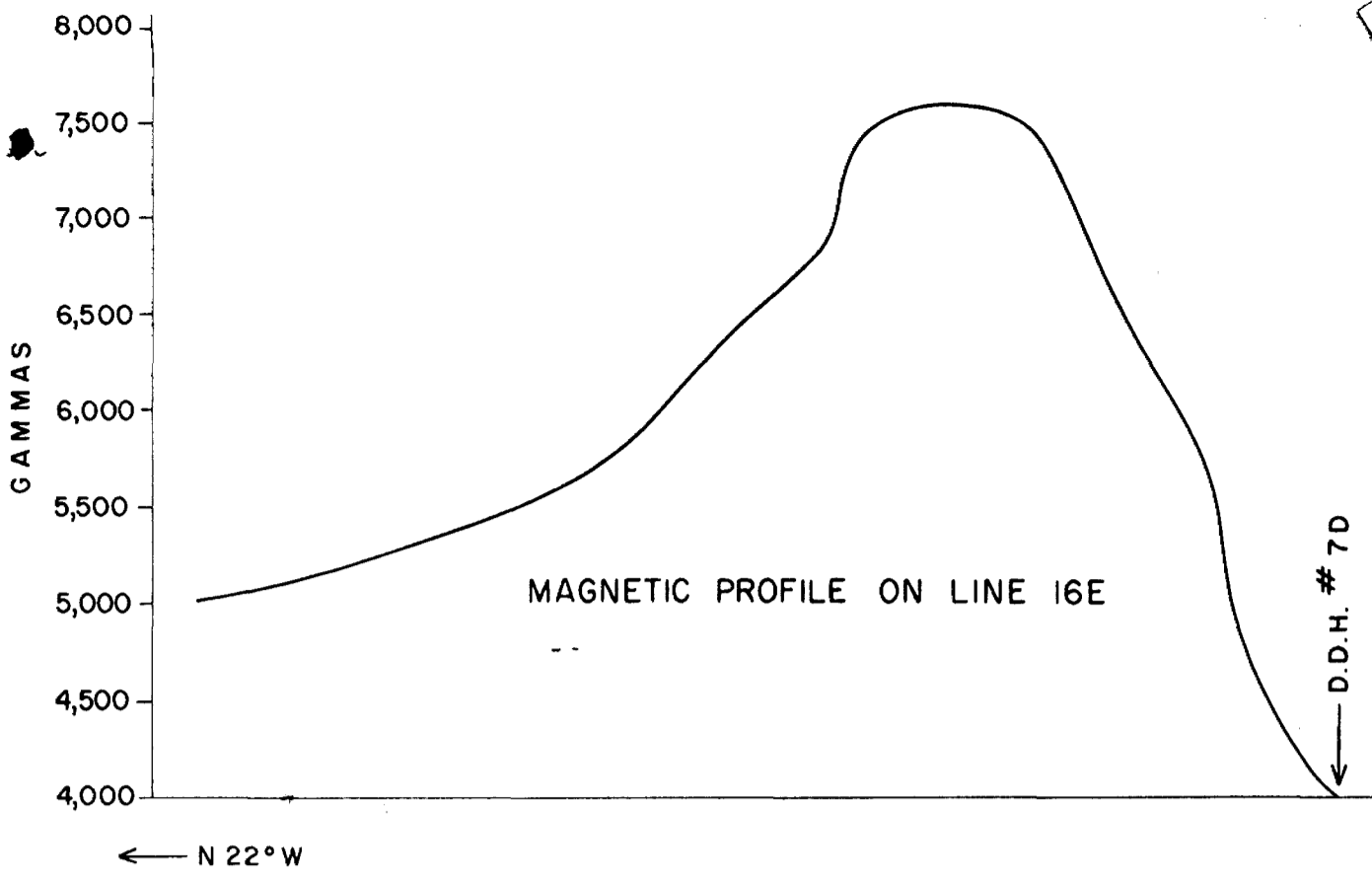
MOODY TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet

MAGNETIC PROFILE - 1 inch = 2000 gammas



*Gray S. Willson, July 2, 1963.*



VERTICAL SECTION D.D.H. N° 7-D

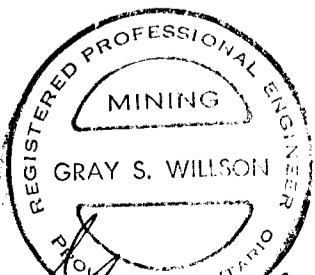
ANOMALY N° 6

MISTANGO RIVER MINES LIMITED

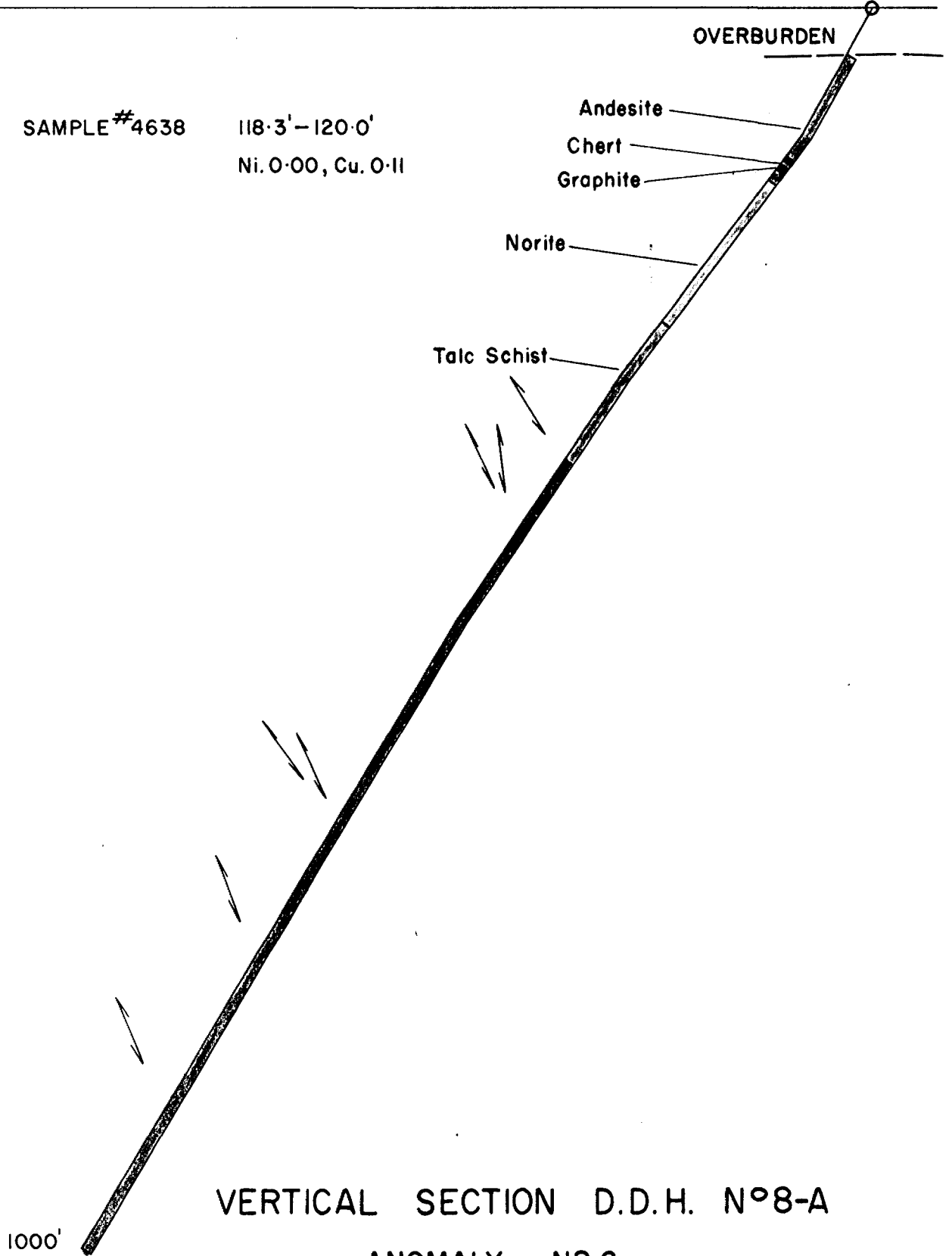
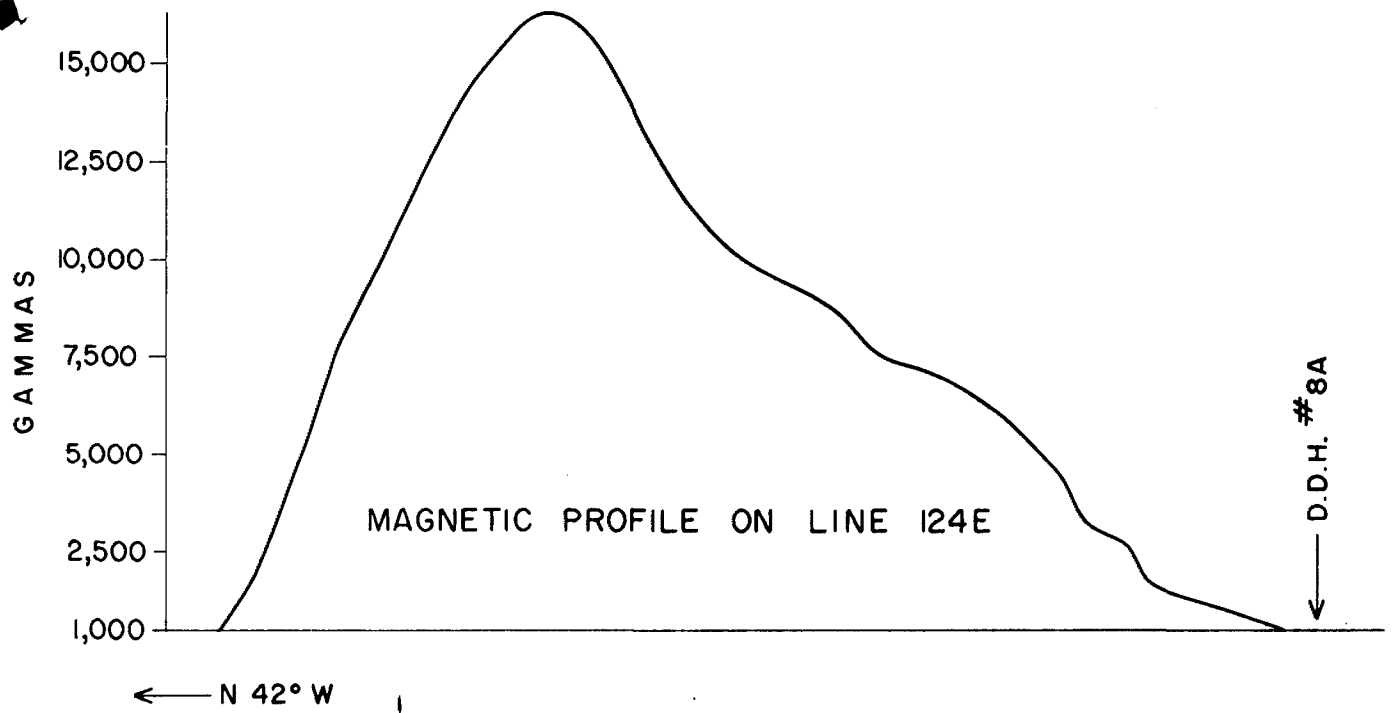
GALNA TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet

MAGNETIC PROFILE - 1 inch = 1000 gammas

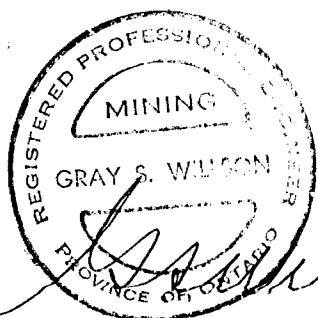


*Gray S. Willson, July 2, 1963.*

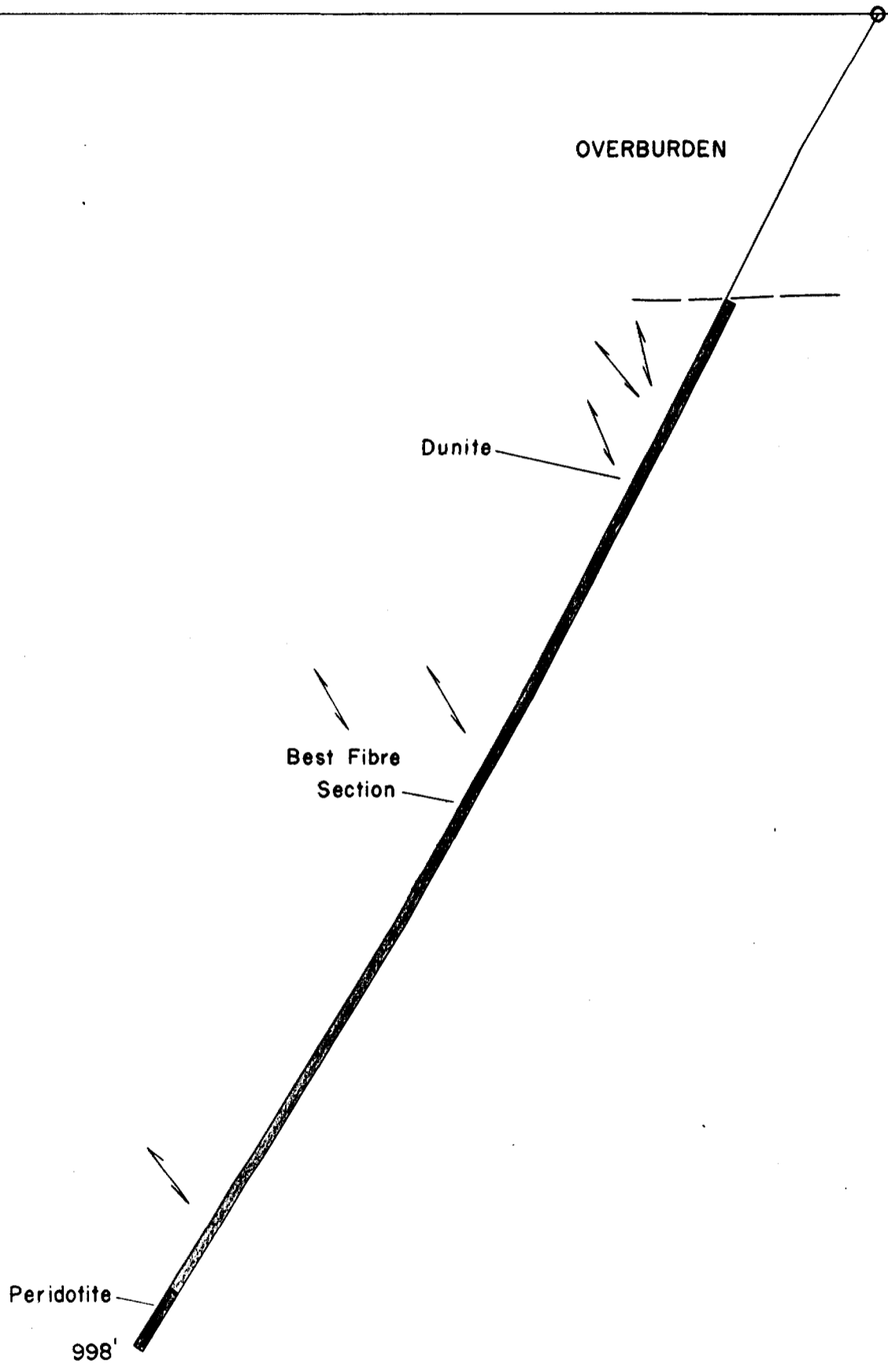
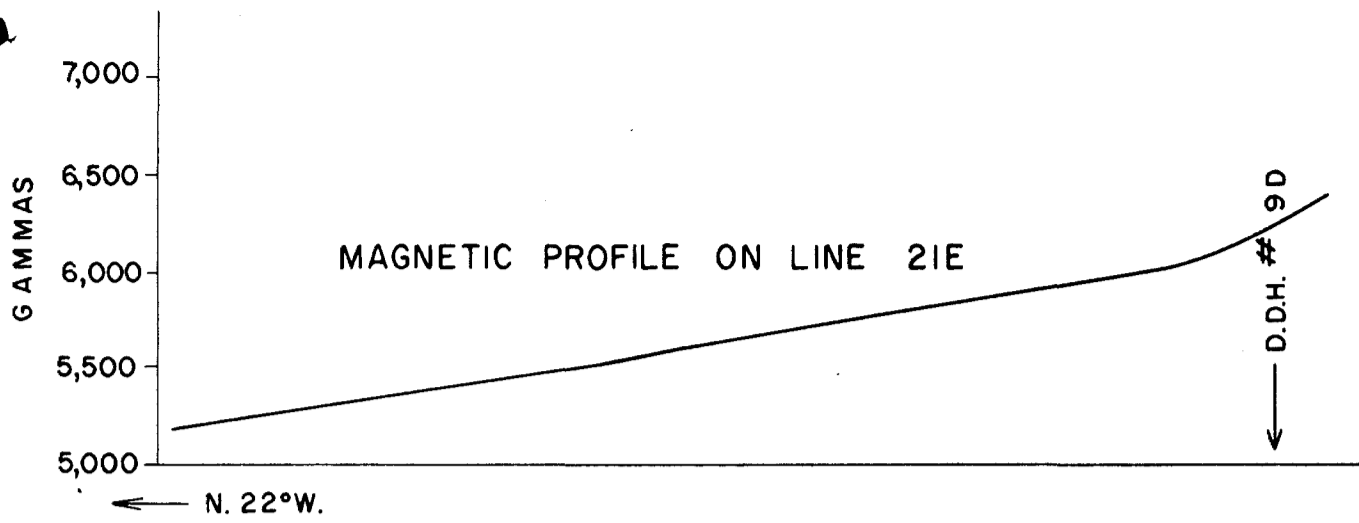


VERTICAL SECTION D.D.H. N°8-A  
 ANOMALY N° 6  
 MISTANGO RIVER MINES LIMITED  
 GALNA TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet  
 MAGNETIC PROFILE - 1 inch = 5000 gammas

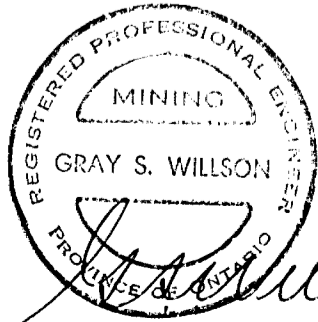


*Wilson, July 2, 1963.*

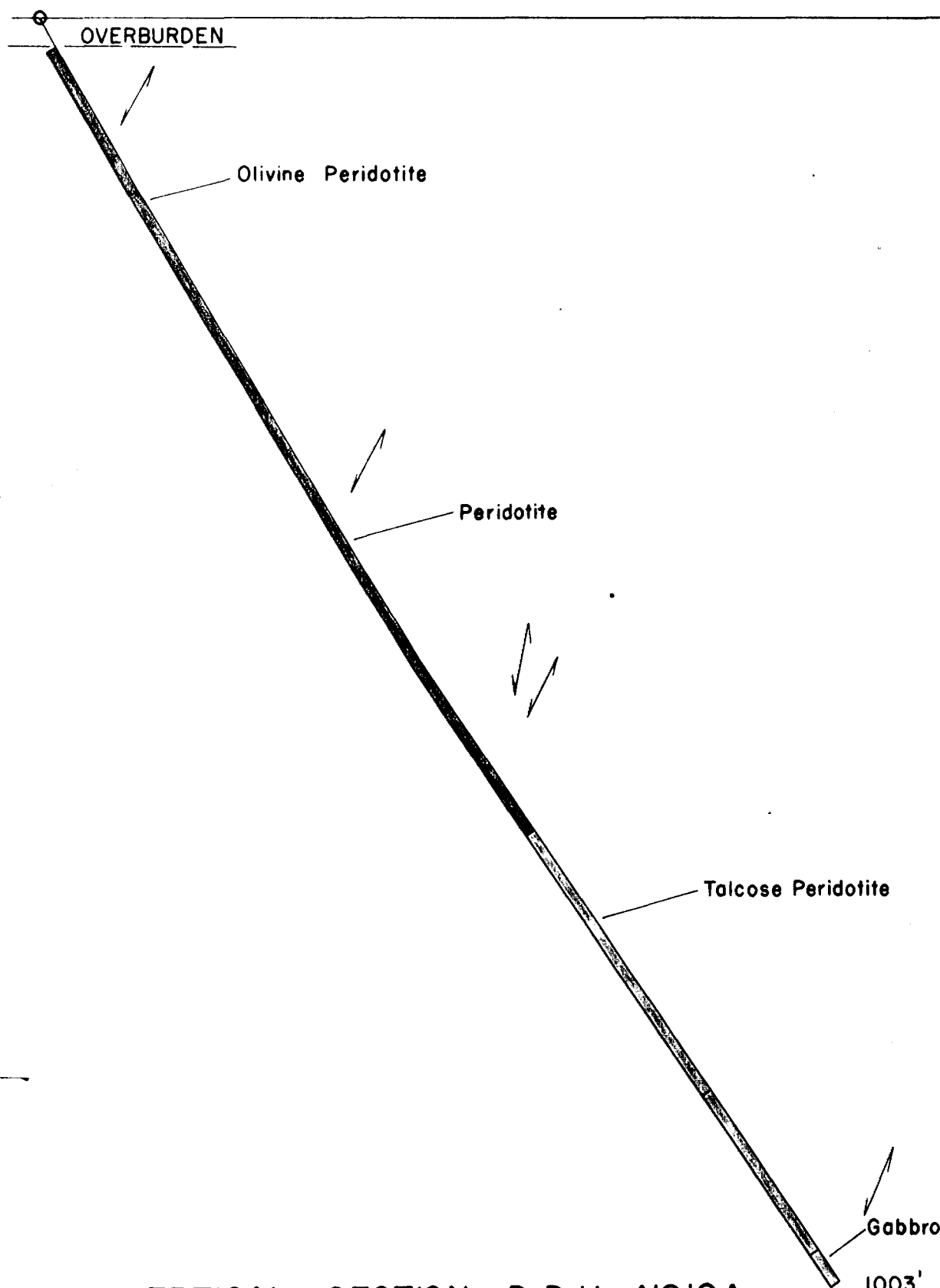
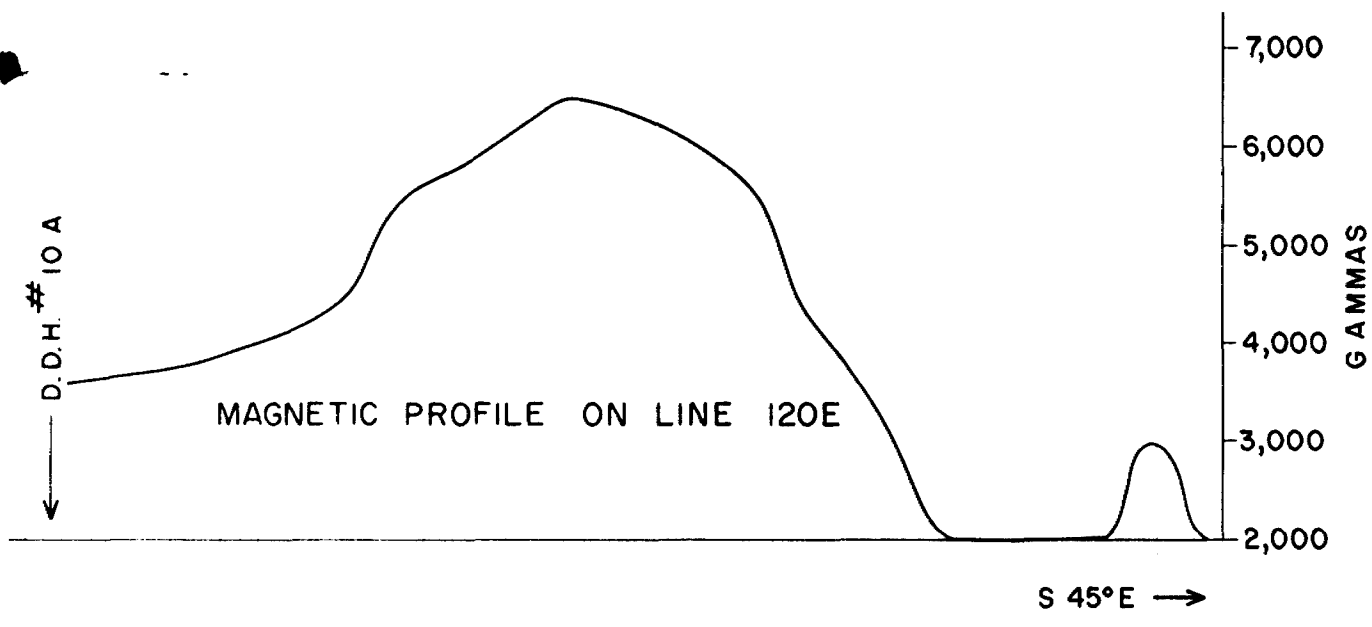


VERTICAL SECTION D.D.H. N°9-D  
 ANOMALY N° 6  
 MISTANGO RIVER MINES LIMITED  
 GALNA TOWNSHIP ONTARIO

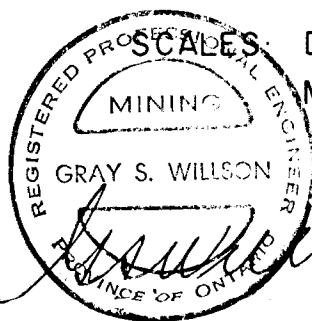
SCALES: DRILL SECTION - 1inch = 100 feet  
 MAGNETIC PROFILE - 1inch = 1000 gammas



*Gray S. Willson, July 2, 1963*

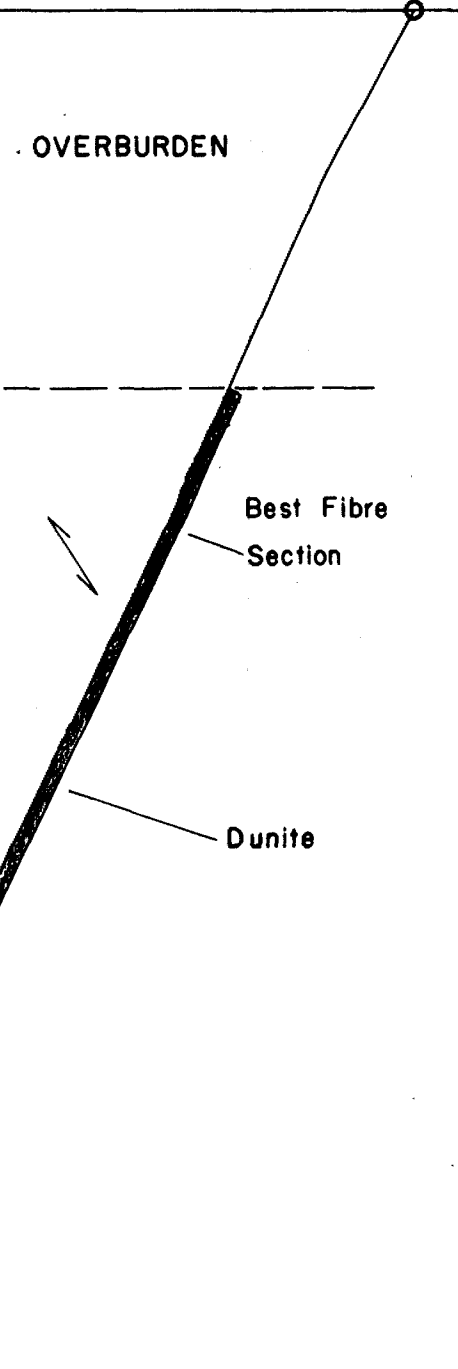
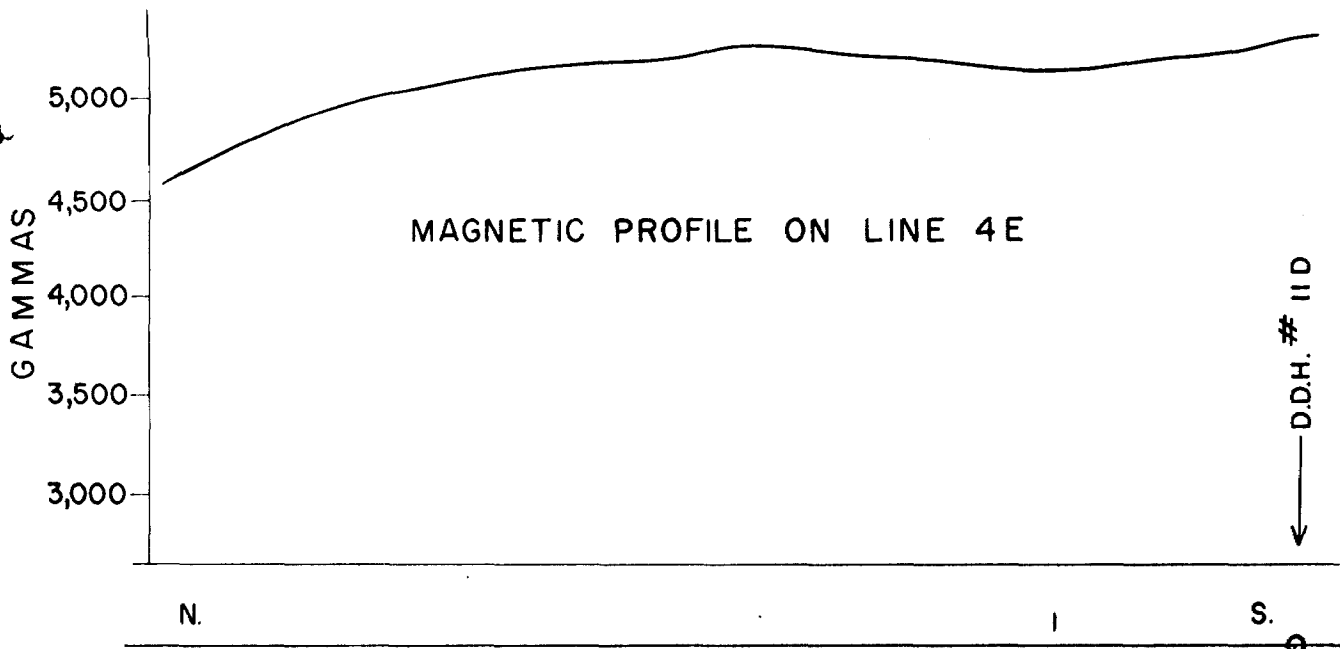


VERTICAL SECTION D.D.H. N° 10A  
 ANOMALY N° 6  
 MISTANGO RIVER MINES LIMITED  
 GALNA TOWNSHIP ONTARIO



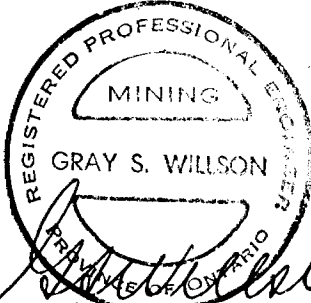
SCALES: DRILL SECTION - 1 inch = 100 feet  
 MAGNETIC PROFILE - 1 inch = 2000 gammas

*Willson, July 2, 1963*



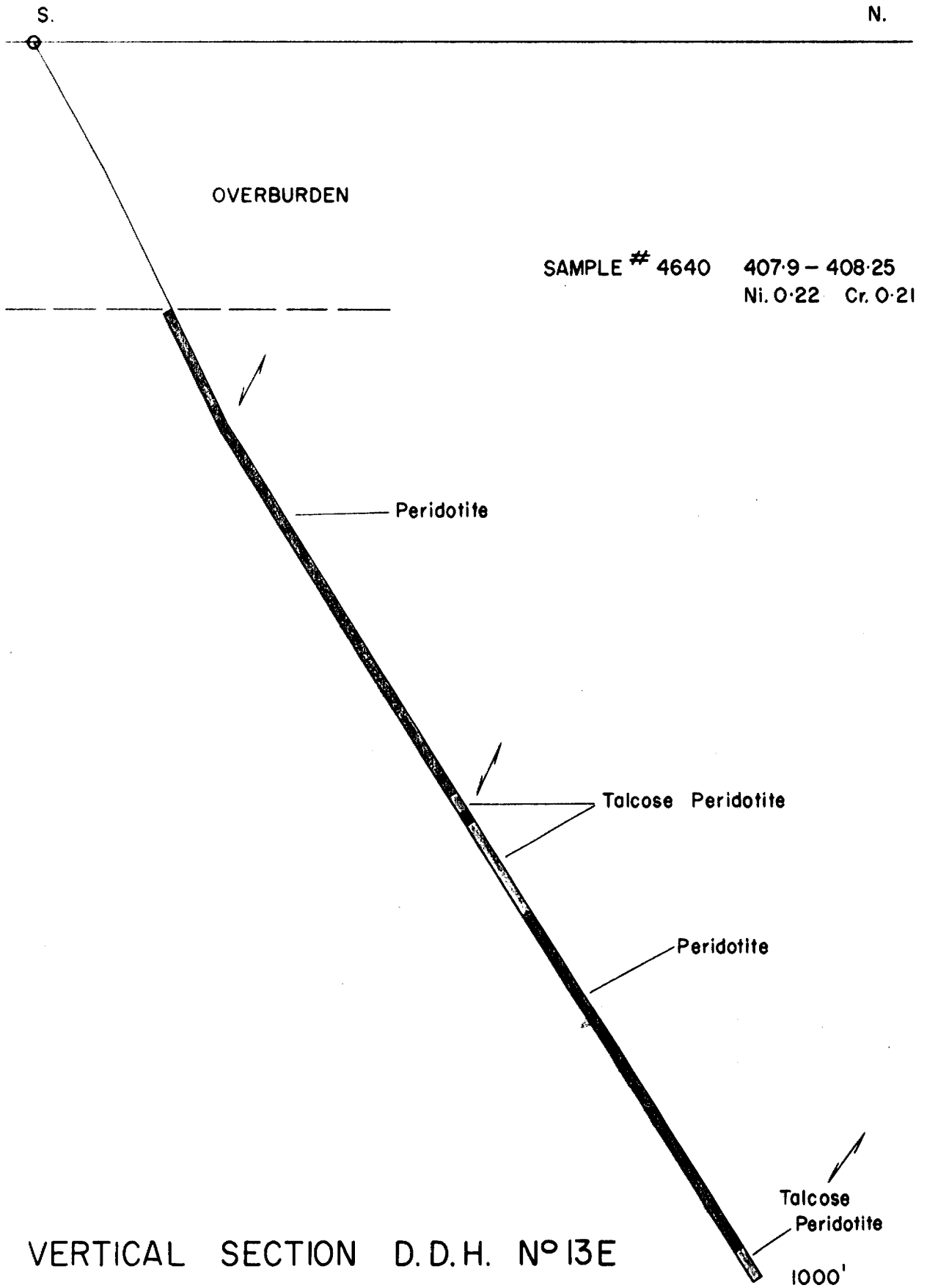
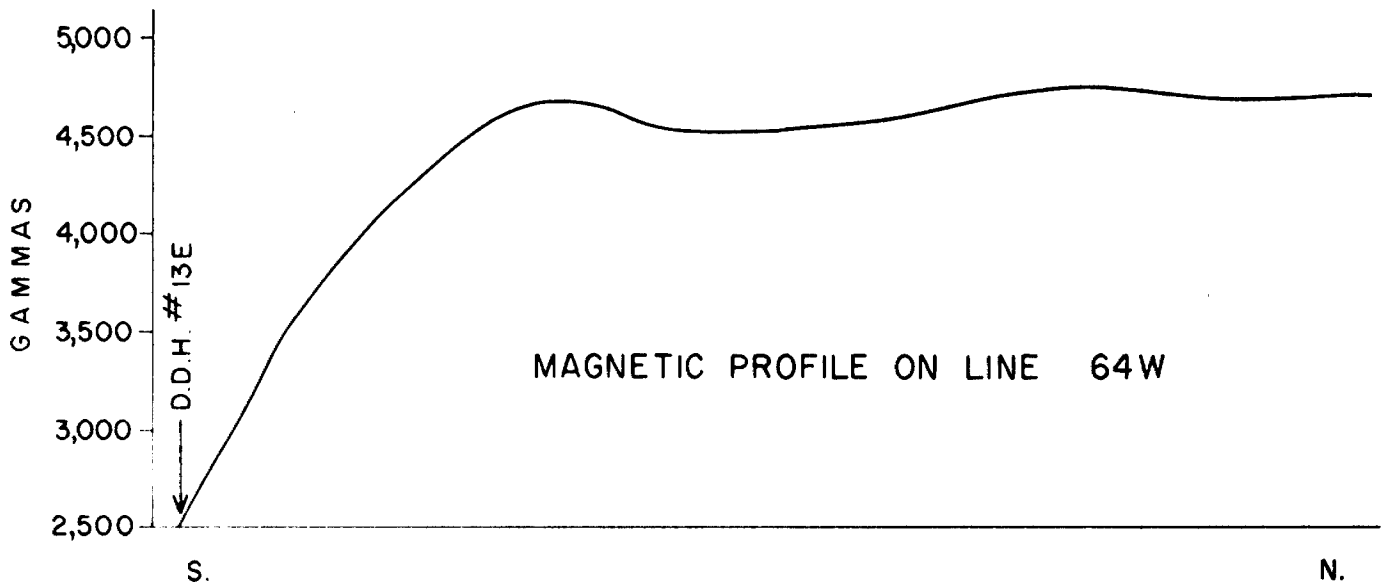
VERTICAL SECTION D.D.H. N°IID  
 ANOMALY N° 6  
 MISTANGO RIVER MINES LIMITED  
 GALNA TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1inch = 100feet  
 MAGNETIC PROFILE - 1inch = 1000gammas

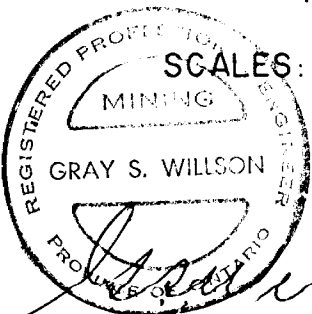


*Gray S. Willson, July 2, 1963.*



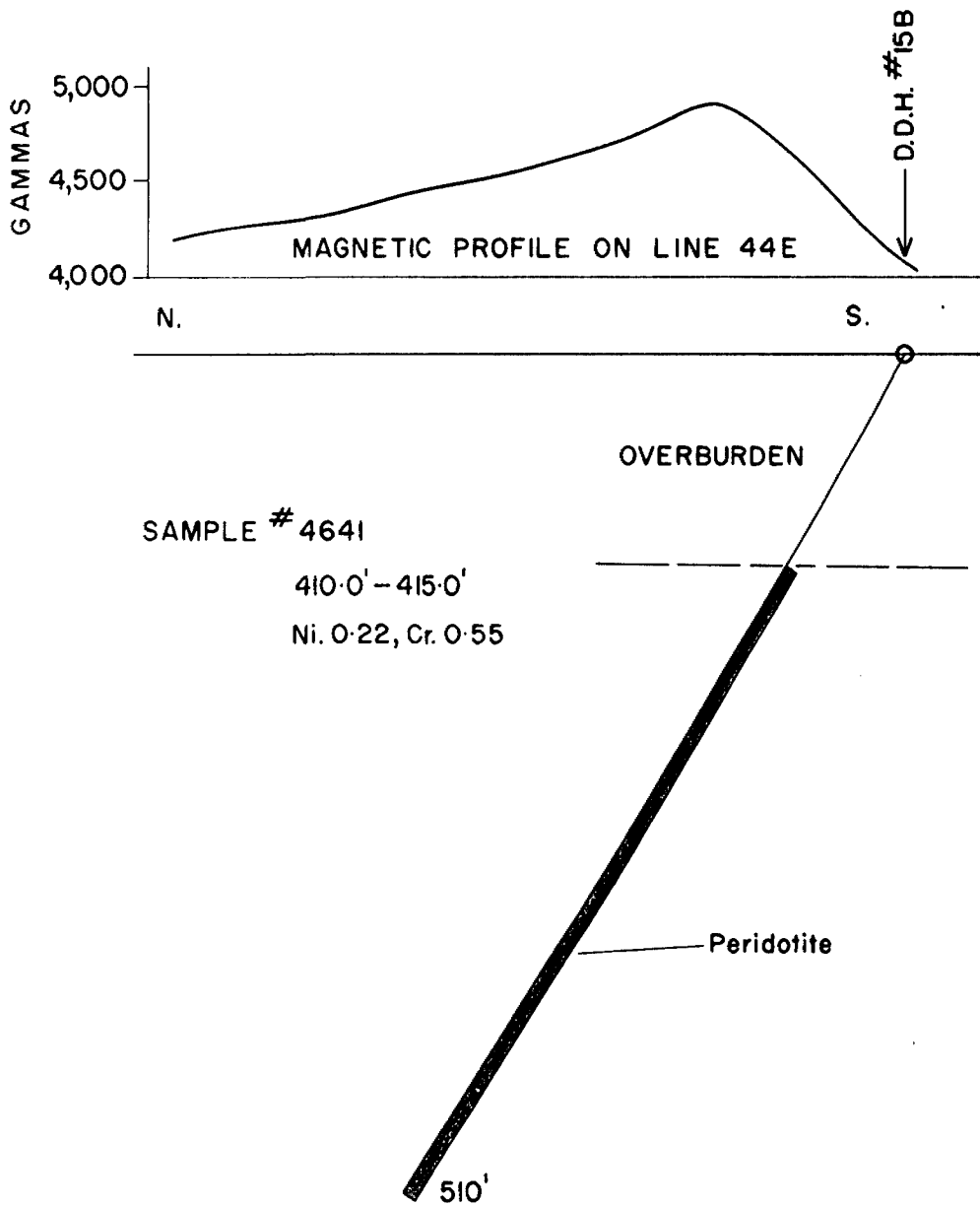


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ANOMALY N° 6  
MISTANGO RIVER MINES LIMITED  
MOORE TOWNSHIP ONTARIO



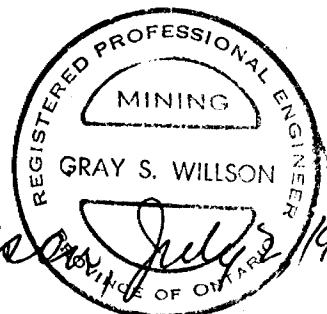
SCALES: DRILL SECTION - 1 inch = 100 feet  
MAGNETIC PROFILE - 1 inch = 1000 gammas

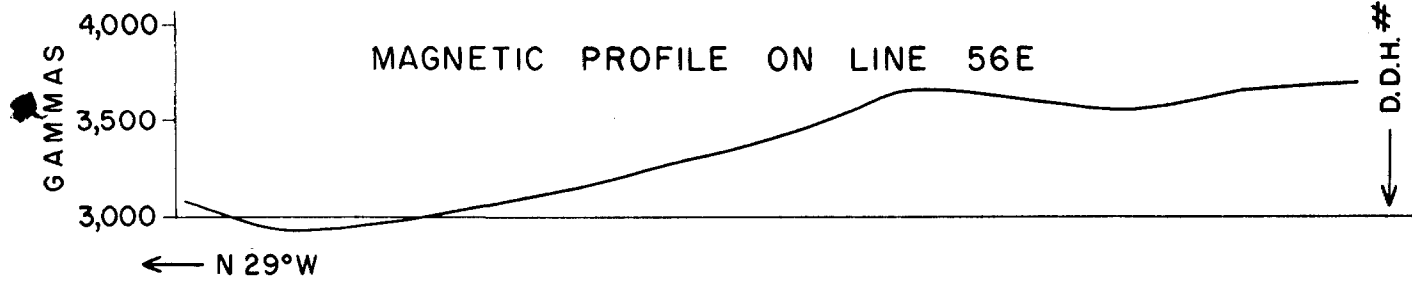
*Gray S. Willson, July 2, 1963.*



VERTICAL SECTION D.D.H. N° 15B  
 ANOMALY N° 6  
 MISTANGO RIVER MINES LIMITED  
 GALNA TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet  
 MAGNETIC PROFILE - 1 inch = 1000 gammas



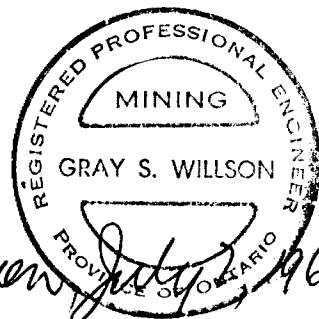
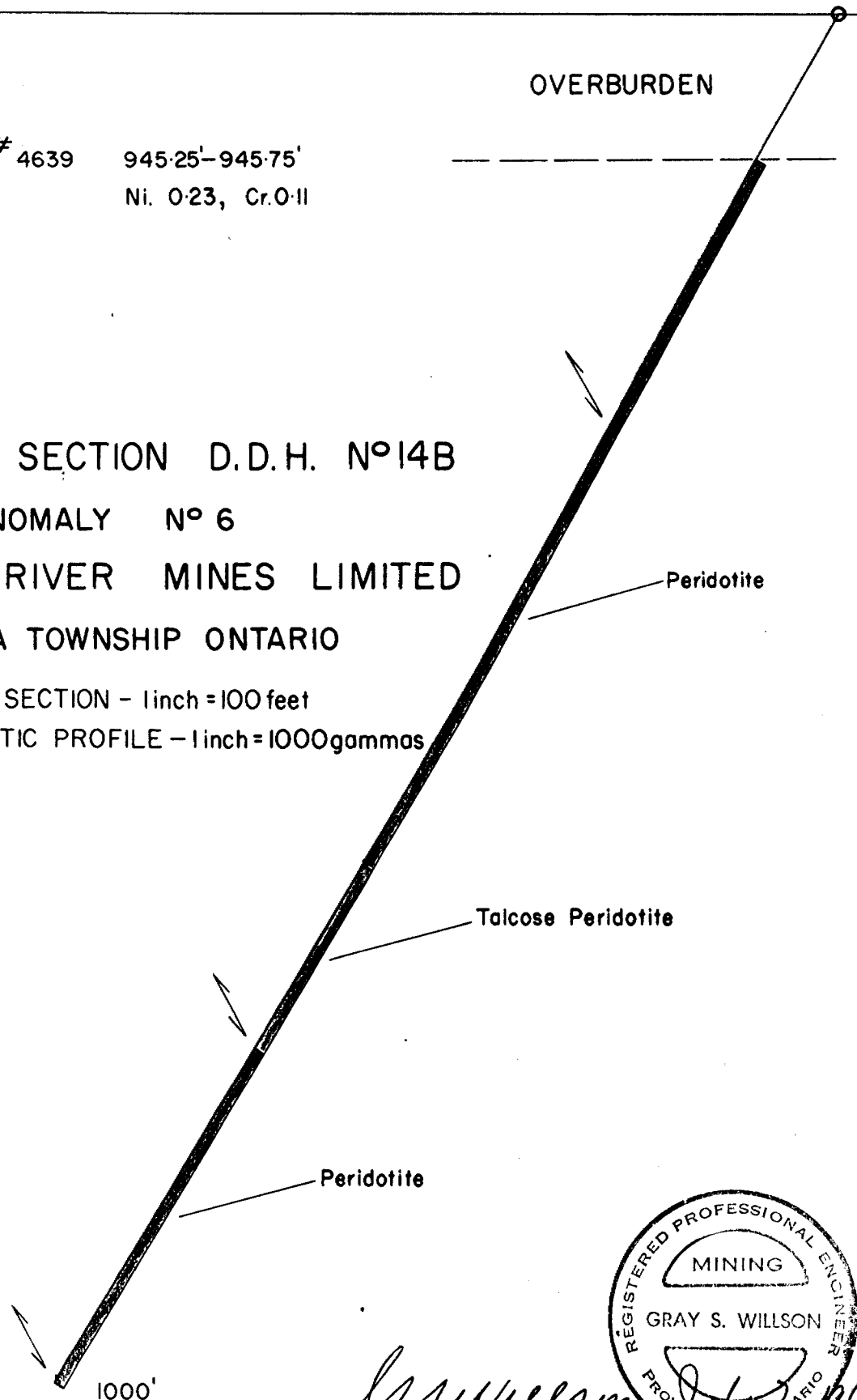


SAMPLE # 4639 945.25'-945.75'  
Ni. 0.23, Cr. 0.11

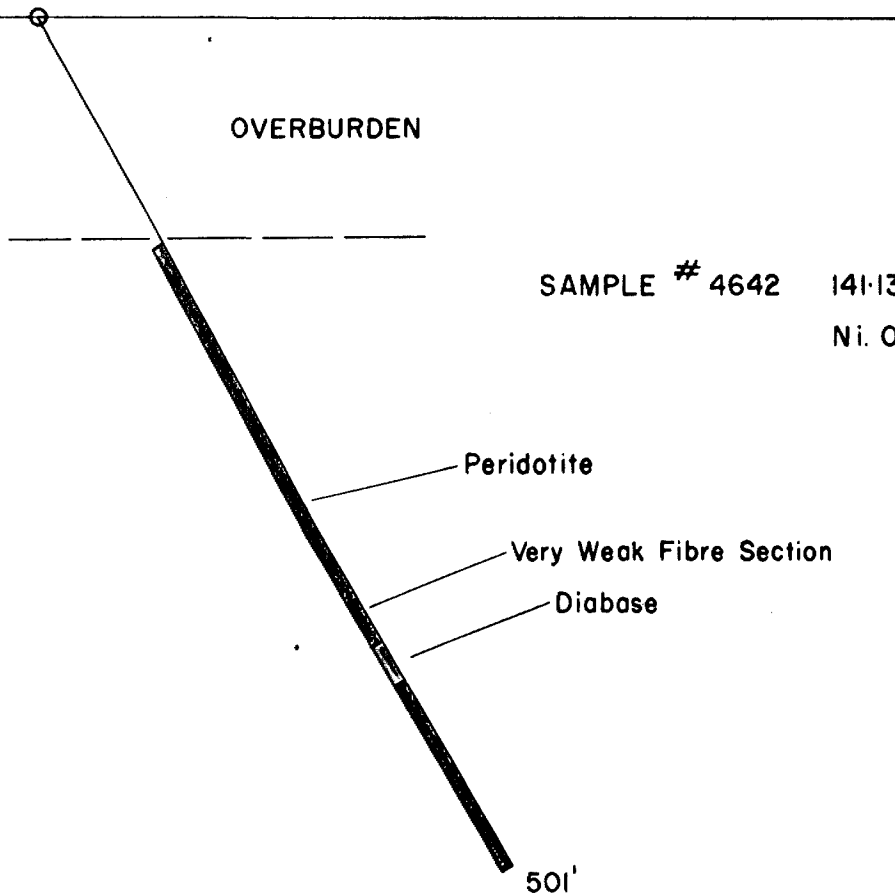
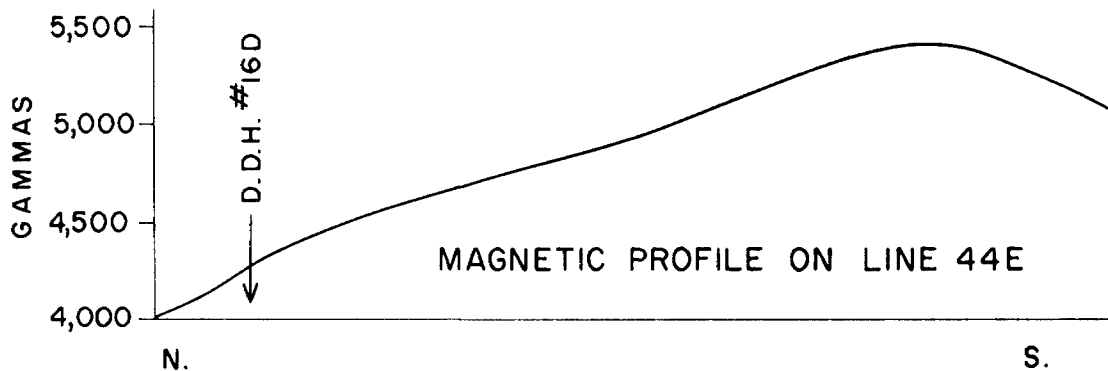
OVERBURDEN

VERTICAL SECTION D.D.H. N°14B  
ANOMALY N° 6  
MISTANGO RIVER MINES LIMITED  
GALNA TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet  
MAGNETIC PROFILE - 1 inch = 1000 gammas



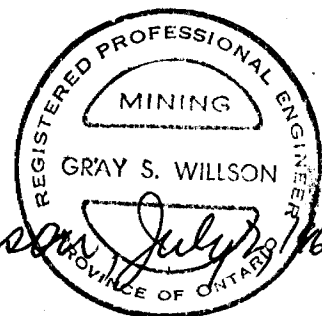
*Gray S. Willson*

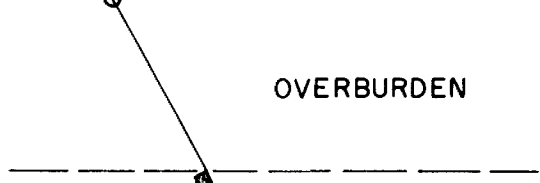
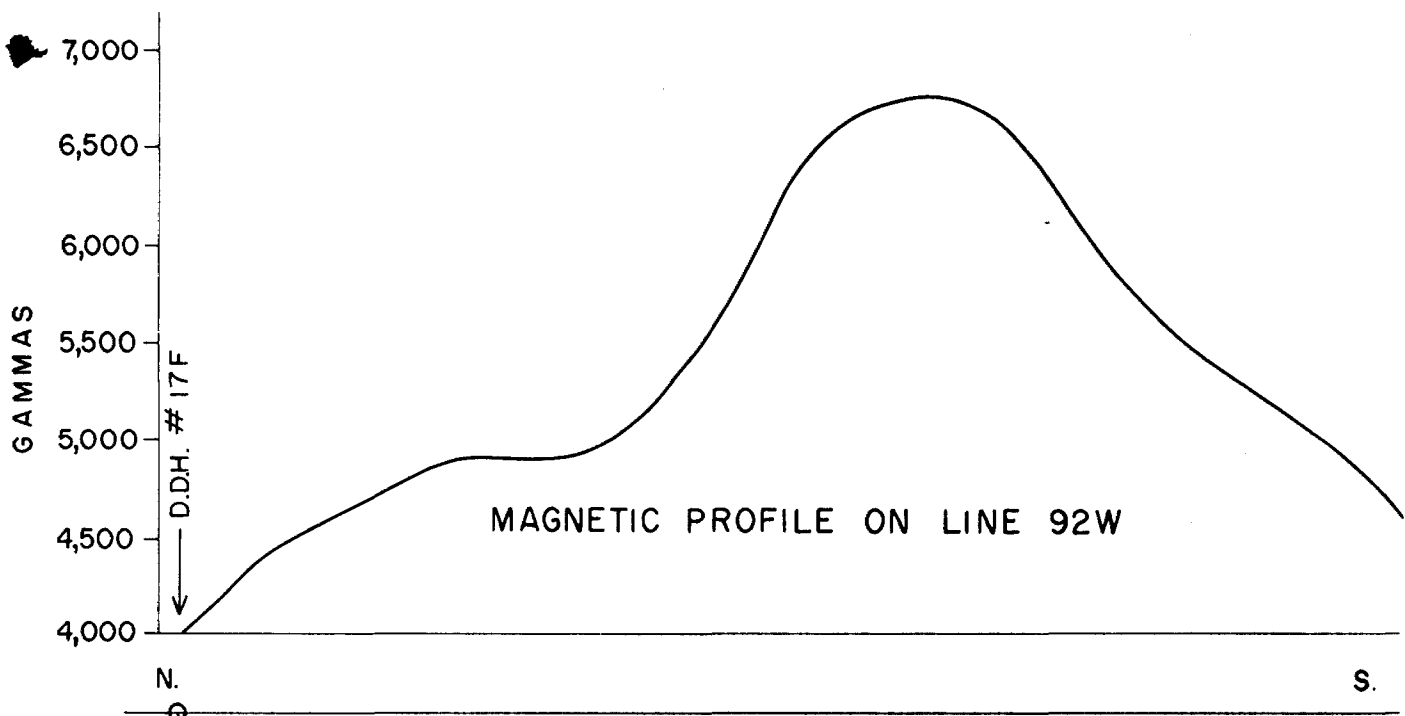


SAMPLE # 4642 141-13-141-91  
Ni. 0-28

VERTICAL SECTION D.D.H. N° 16 D  
ANOMALY N° 6  
MISTANGO RIVER MINES LIMITED  
GALNA TOWNSHIP ONTARIO

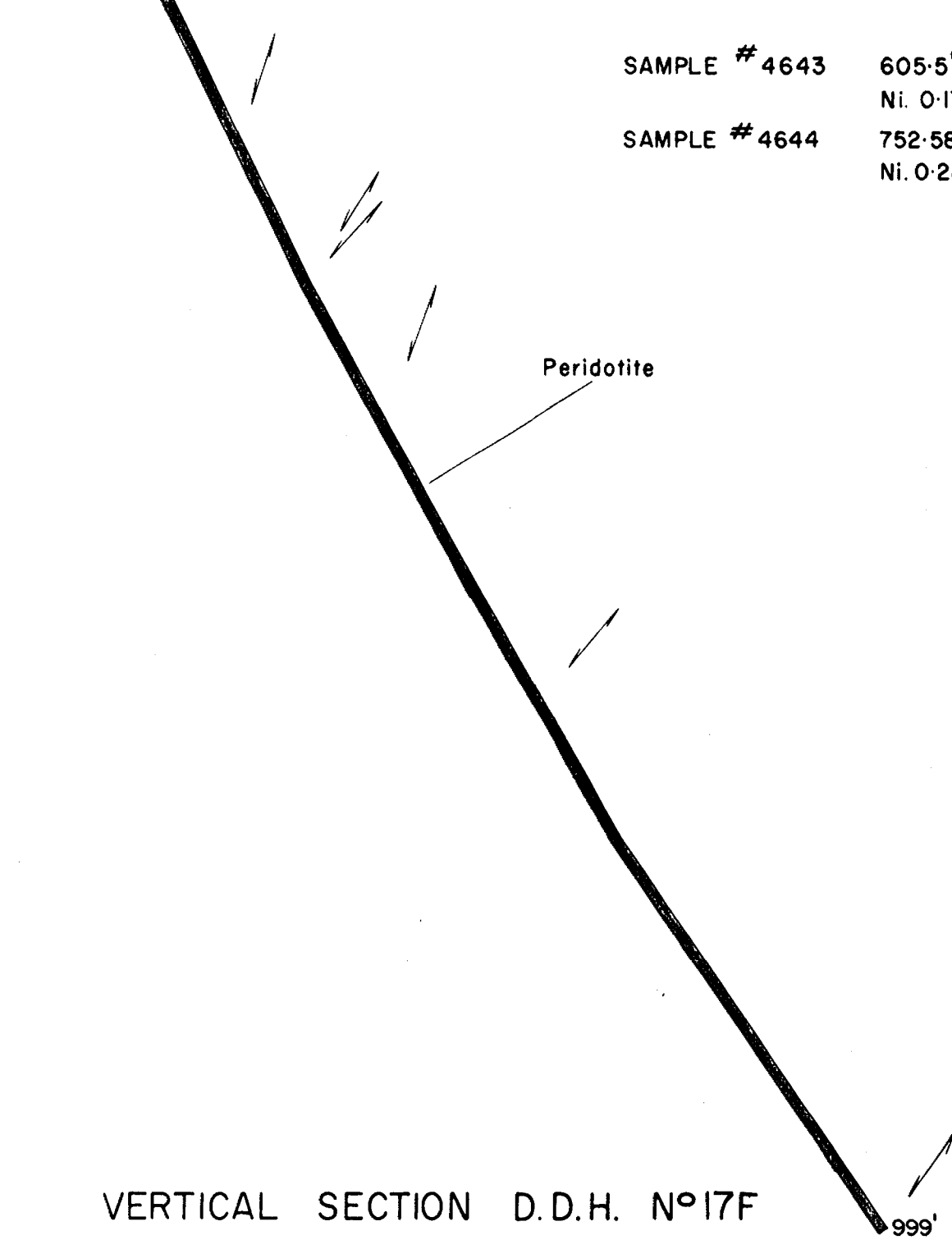
SCALES: DRILL SECTION - 1 inch = 100 feet  
MAGNETIC PROFILE - 1 inch = 1000 gammas





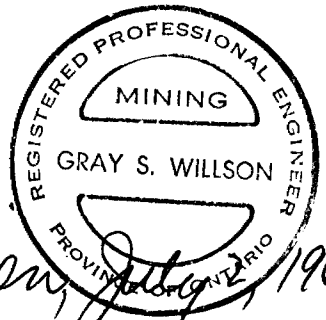
SAMPLE # 4643 605.5' - 606.5'  
 Ni. 0.17, Cr. 0.24

SAMPLE # 4644 752.58' - 753.25'  
 Ni. 0.28, Cr. 3.88

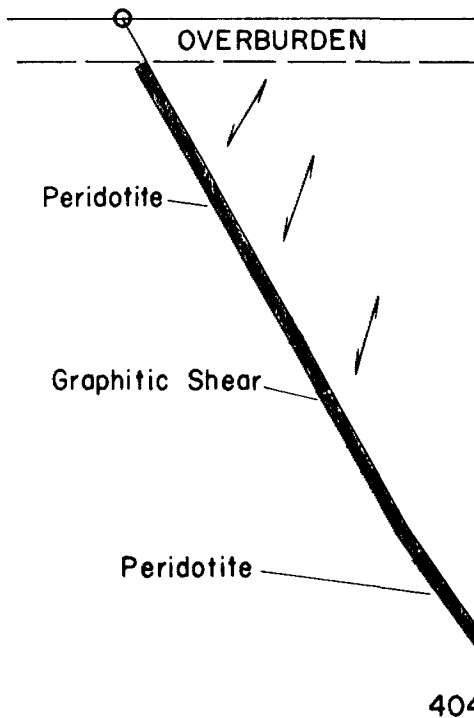
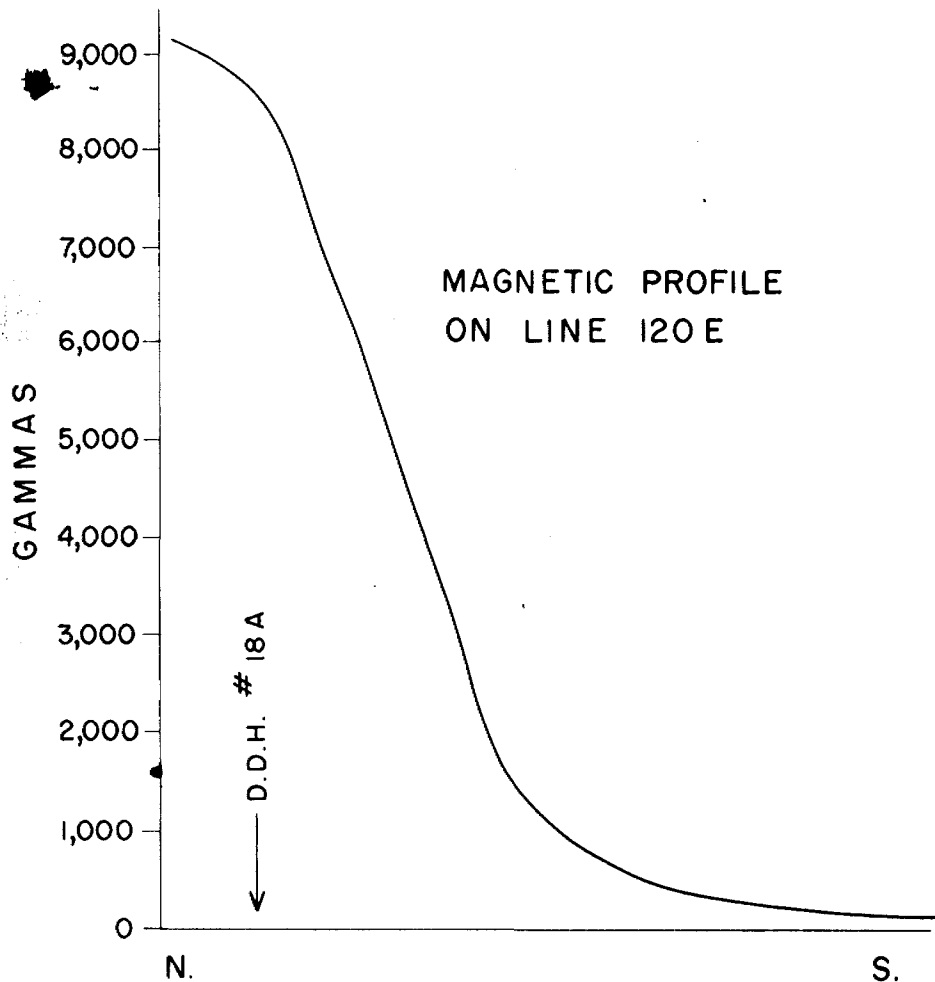


VERTICAL SECTION D.D.H. N° 17F  
 ANOMALY N° 6  
 MISTANGO RIVER MINES LIMITED  
 MOODY TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet  
 MAGNETIC PROFILE - 1 inch = 1000 gammas



*Gray S. Willson*

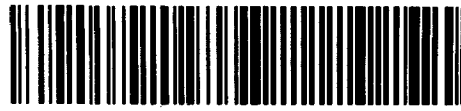


VERTICAL SECTION D.D.H. N° 18 A  
ANOMALY N° 6  
MISTANGO RIVER MINES LIMITED  
GALNA TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet  
MAGNETIC PROFILE - 1 inch = 1000 gammas

*Gray S. Willson* July 2, 1968





42H02SE0001 83.1-29 FOX

900

NOTICE FOR FILE: 83.1-29

Autopositives for this file are stored in the N.T.S. drawer.

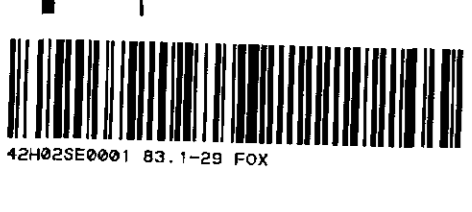






L E G E N D :

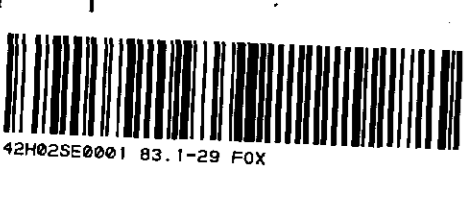
- 1000 MAGNETIC VALUES IN GAMMAS
- 500 CONTOUR INTERVAL 500 GAMMAS
- 2000

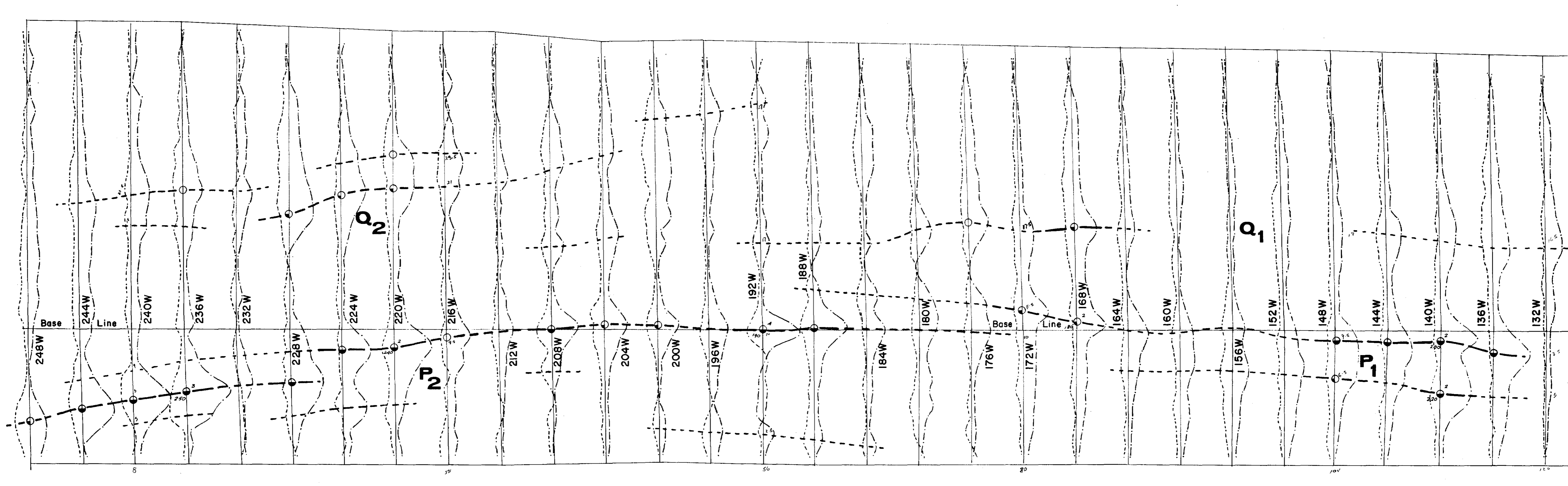
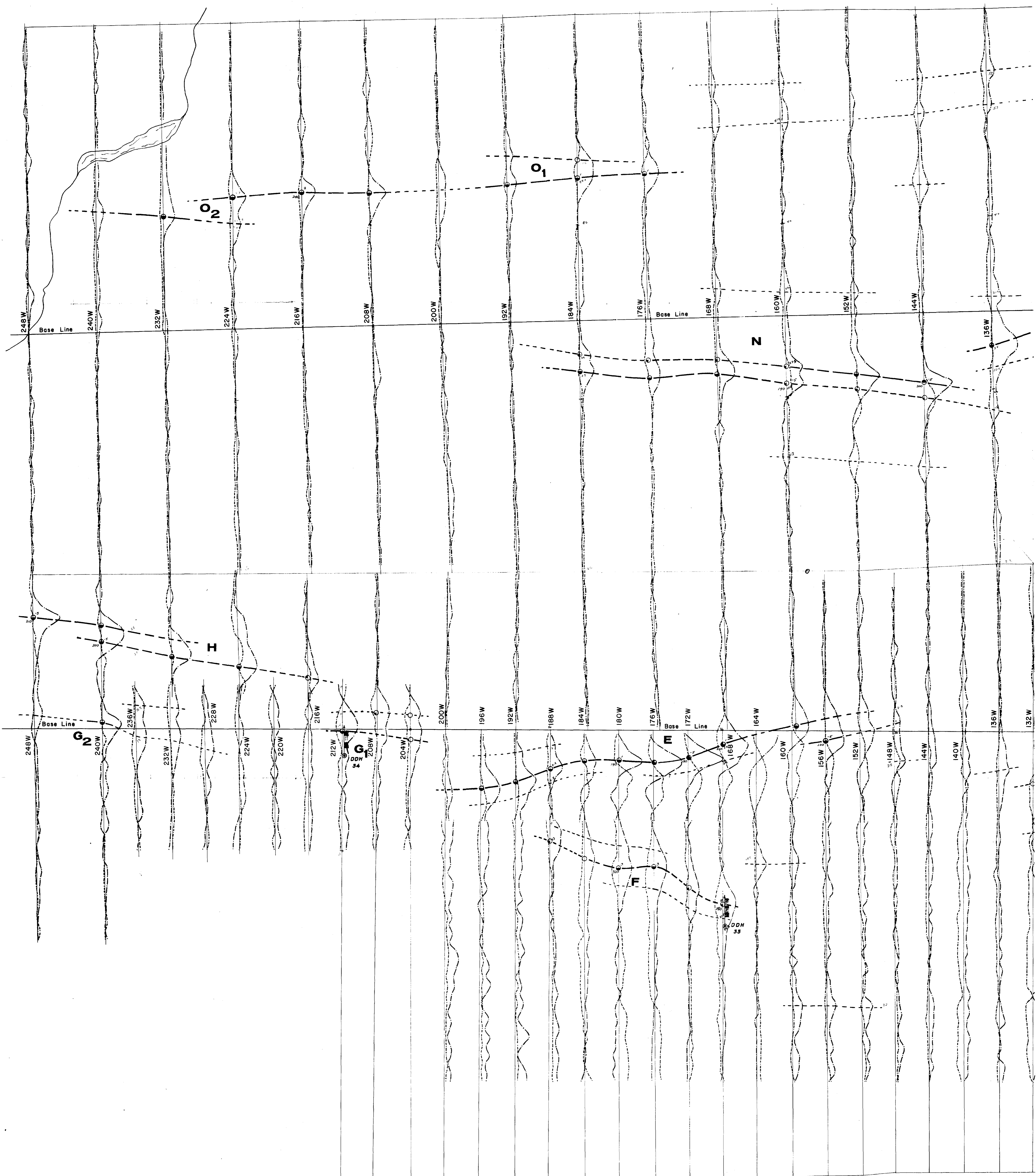




LEGEND

- 1720 MAGNETIC VALUES IN GAMMAS
- 500 1000 1500 2000 2500
- CONTOUR INTERVAL 500 GAMMAS

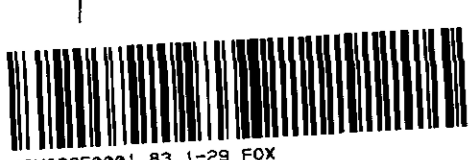




LEGEND: see "T-3"



LEGEND: see "7-3"

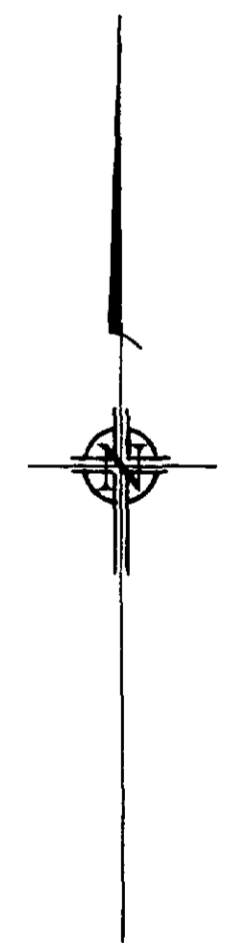
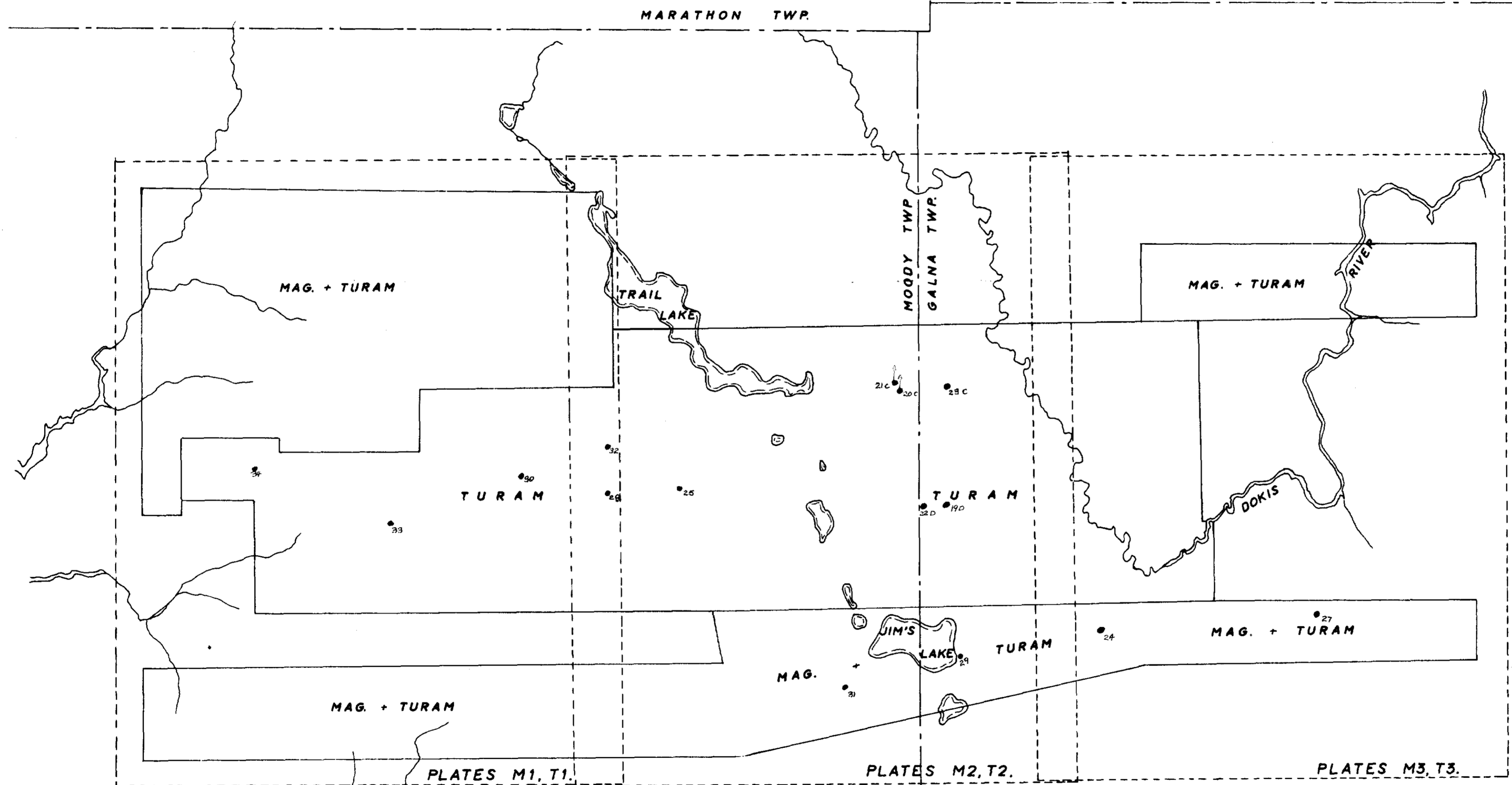




L E G E N D :

F.S. RATIO -60 1:00 1:40  
 PHASE DIFF-20° 0° ±20°

EL. CONDUCTOR —○— Jg VALUE (ohmcm/m)  
 —○— DEPTH of CURRENT AXIS (ft)



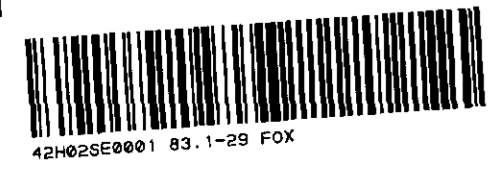
SCALE: 1" = 2640'

MISTANGO RIVER MINES, LTD.  
 GEOPHYSICAL SURVEYS  
 MOODY & GALNA TWP'S ONTARIO



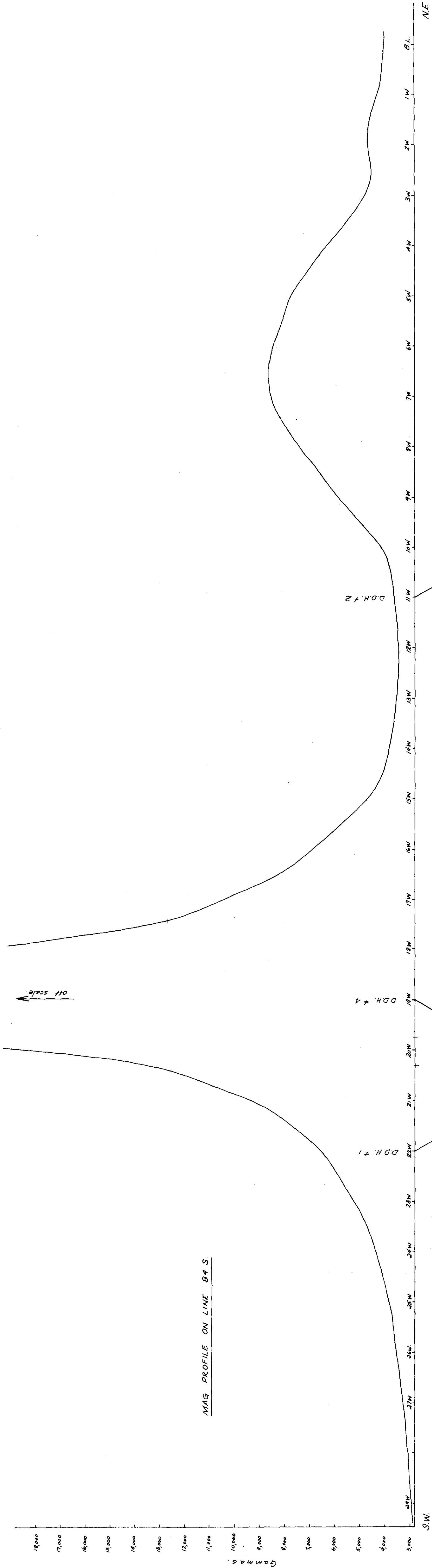
● DRILL HOLES KEY MAP

SURVEY BY H.O. SEIGEL & ASSOCIATES, LIMITED



SAMPLE NUMBER	FOOTAGE FROM	TO	LENGTH	% Fe
4601	319.0	325.0	10.0	11.77
4602	329.0	339.0	10.0	5.13
4603	339.0	349.5	10.5	9.00
4604	349.5	353.0	3.5	16.28
4605	353.0	358.0	5.0	22.17
4606	358.0	361.0	3.0	11.70
4607	361.0	366.0	5.0	23.00
4608	366.0	371.0	5.0	21.84
4609	371.0	376.0	5.0	24.56
4610	376.0	385.0	9.0	11.42
4611	385.0	390.0	5.0	17.39
4612	390.0	395.0	5.0	17.66
4613	395.0	399.5	4.5	23.12
4614	399.5	404.0	4.5	22.18
4615	404.0	409.0	5.0	21.16
4616	409.0	414.0	5.0	15.28
4617	414.0	419.0	5.0	12.24
4618	419.0	424.0	5.0	13.80
4619	424.0	429.0	5.0	18.77
4620	429.0	434.0	5.0	20.17
4621	434.0	439.0	5.0	18.55
4622	439.0	444.0	5.0	14.12
4623	444.0	449.0	5.0	13.29
4624	449.0	454.0	5.0	13.59
4625	454.0	459.0	5.0	14.63
4626	459.0	464.0	5.0	15.73
4627	464.0	469.0	5.0	12.10
4628	469.0	474.0	5.0	12.83
4629	474.0	479.0	5.0	17.21
4630	479.0	484.0	5.0	26.56
4631	484.0	489.0	5.0	17.21
4632	489.0	494.0	5.0	14.70
4633	494.0	499.0	5.0	17.41
4634	499.0	504.0	5.0	23.77
4635	504.0	509.0	5.0	7.37

MAG PROFILE ON LINE B9 S.



VERTICAL SECTION D.D.H. Nos. 1, 2, 4

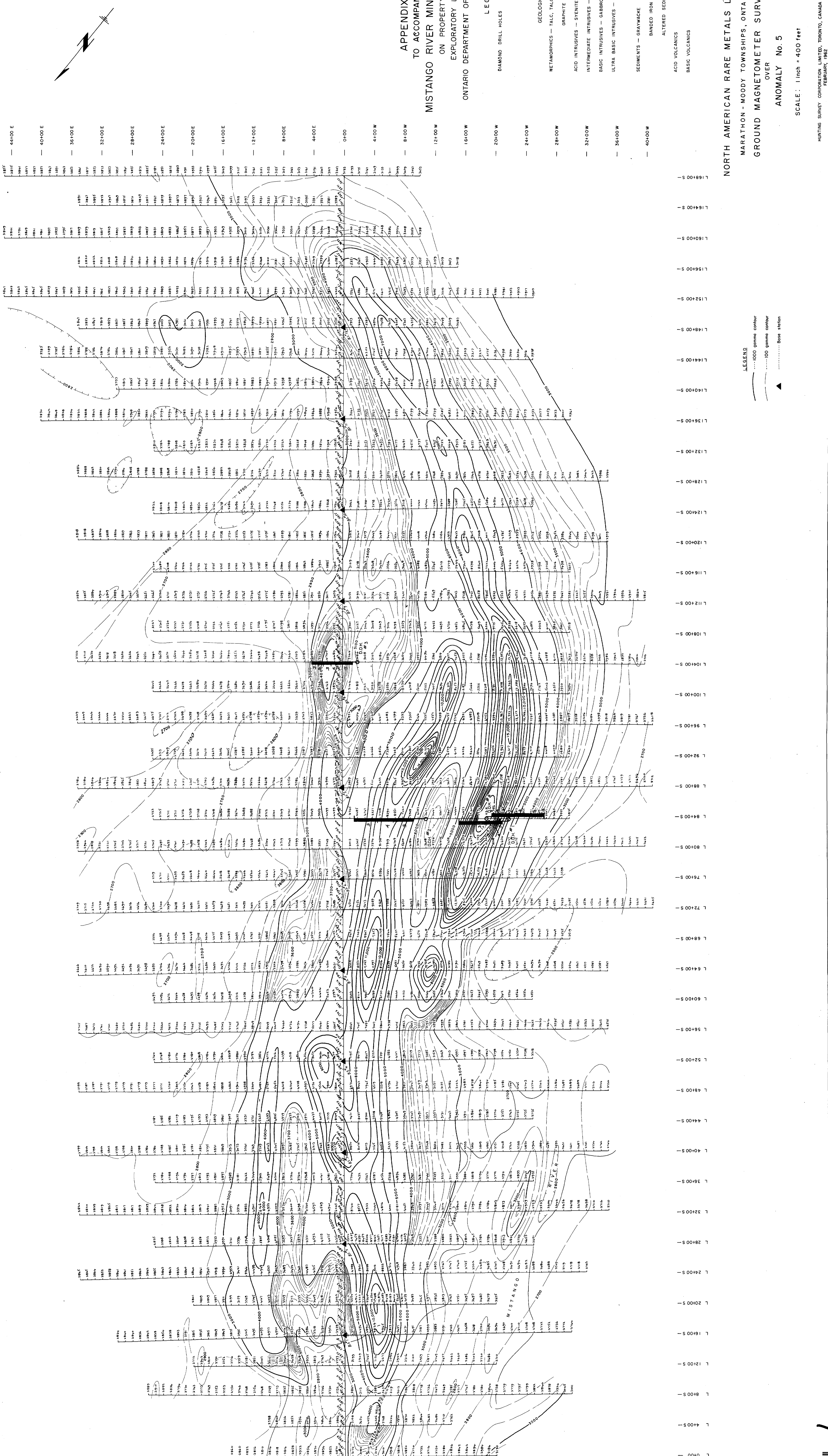
MISTANGO RIVER MINES LTD.

MOODY TWP. ONTARIO

Scales: 1" = 100'  
1" = 2000 gammas

K.H.C. Nov. 62





**APPENDIX MAP C**  
**TO ACCOMPANY REPORT TO**  
**MISTANGO RIVER MINES LIMITED BY**  
**ON PROPERTY COVERED BY**  
**EXPLORATORY LICENSE 13,302**  
**ONTARIO DEPARTMENT OF MINES NOVEMBER 16, 1961**

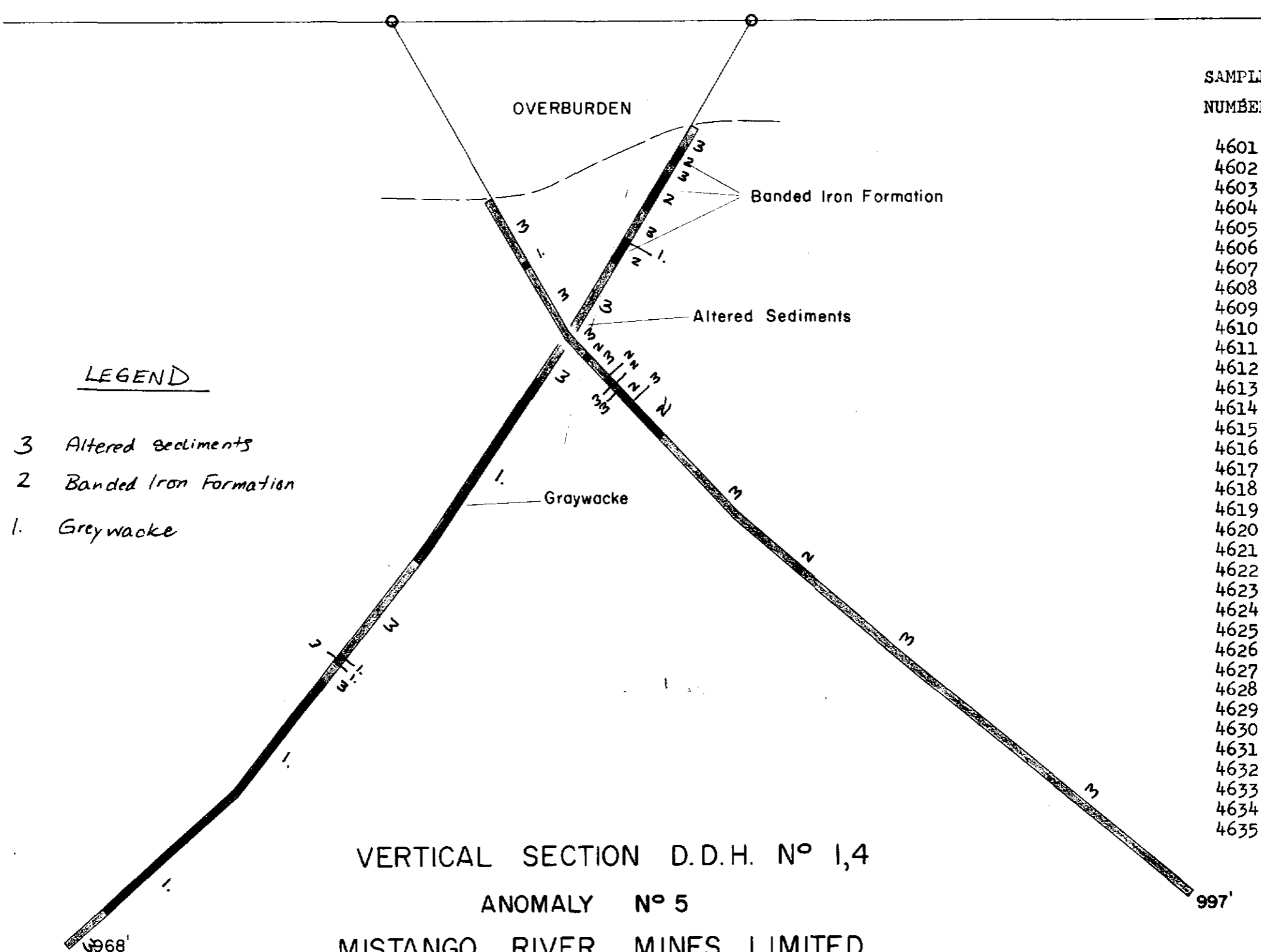
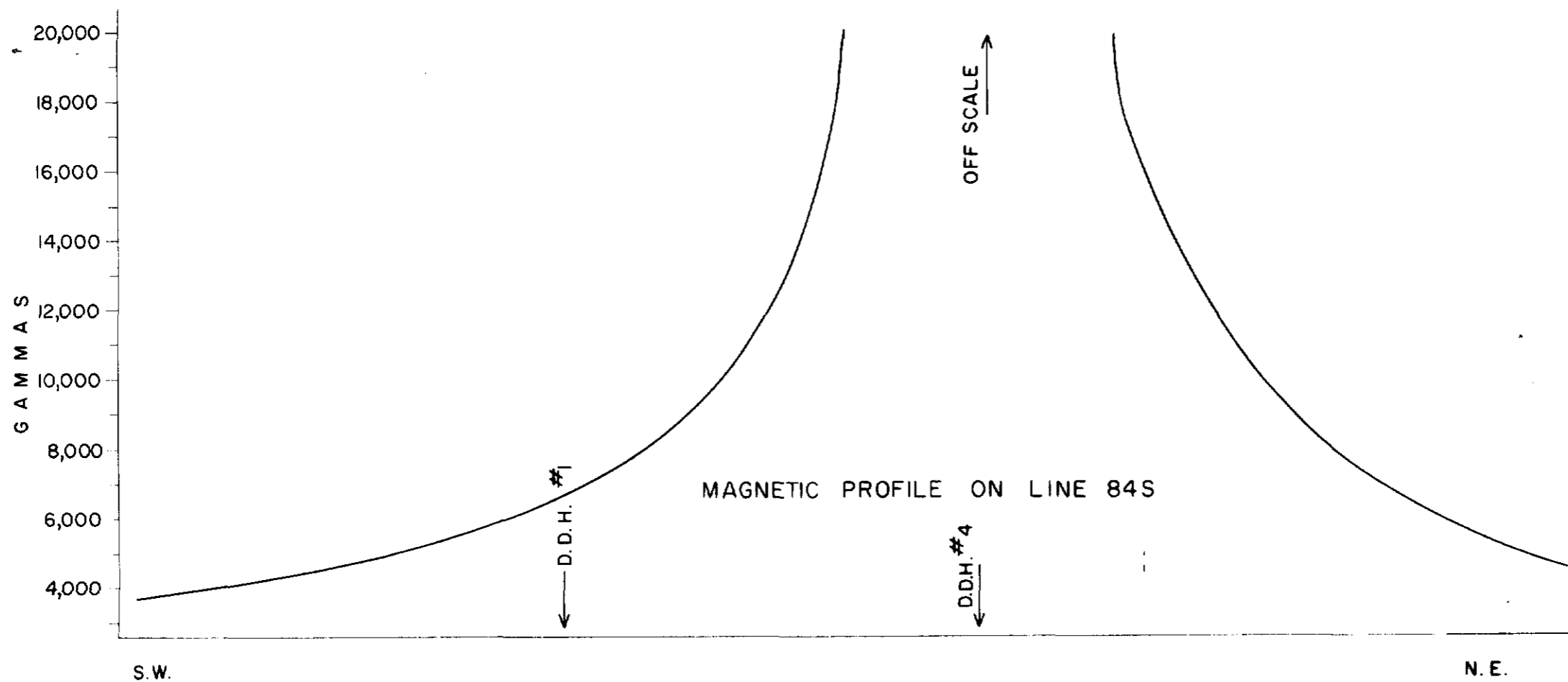
- LEGEND**
- DIAMOND DRILL HOLES
- GEOLOGICAL KEY
- 12 METAMORPHICS — TALC, TALC CHLORITE
  - 11 GRANITE
  - 10 ACID INTRUSIVES — SYENITE, GRANITE
  - 9 INTERMEDIATE INTRUSIVES — DIORITE
  - 8 BASIC INTRUSIVES — GABBRO, NORITE, DABASE
  - 7 ULTRA BASIC INTRUSIVES — PERidotite
  - 6 GUNITE
  - 5 SEDIMENTS — GRAYWACKE
  - 4 BANDED IRON FORMATION
  - 3 ALTERED SEDIMENTS
  - 2 ACID VOLCANICS
  - 1 BASIC VOLCANICS

NORTH AMERICAN RARE METALS LIMITED  
 MARATHON - WOODY TOWNSHIPS, ONTARIO  
**GROUND MAGNETOMETER SURVEY**  
 OVER  
**ANOMALY No. 5**  
 SCALE: 1 inch = 400 feet

**LEGEND**  
 ..... 1000 gamma contour  
 ..... 100 gamma contour  
 ..... Base station







- LEGEND
- 3 Altered sediments
  - 2 Banded Iron Formation
  - 1. Greywacke

ASSAYS FOR D.D.H. NO. 1

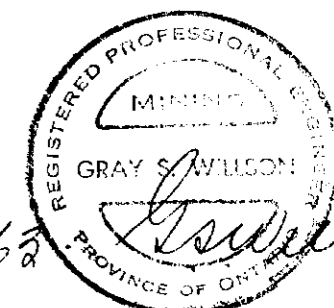
SAMPLE NUMBER	FOOTAGE		LENGTH	% F
	FROM	TO		
4601	319.0	329.0	10.0	11.
4602	329.0	339.0	10.0	5.
4603	339.0	349.5	10.5	9.
4604	349.5	353.0	3.5	16.
4605	355.0	358.0	3.0	22.
4606	358.0	361.0	3.0	11.
4607	361.0	366.0	5.0	25.
4608	366.0	371.0	5.0	21.
4609	371.0	376.0	5.0	24.
4610	376.0	380.0	4.0	4.
4611	380.0	385.0	5.0	11.
4612	385.0	390.0	5.0	17.
4613	390.0	395.5	5.5	17.
4614	395.5	399.0	3.5	23.
4615	399.0	404.0	5.0	22.
4616	404.0	409.0	5.0	22.
4617	409.0	414.0	5.0	19.
4618	414.0	424.0	10.0	12.
4619	424.0	434.0	10.0	9.
4620	434.0	444.0	10.0	16.
4621	444.0	454.0	10.0	24.
4622	454.0	464.0	10.0	18.
4623	464.0	474.0	10.0	18.
4624	474.0	484.0	10.0	13.
4625	484.0	494.0	10.0	14.
4626	494.0	504.0	10.0	15.
4627	504.0	514.0	10.0	12.
4628	514.0	524.0	10.0	5.
4629	524.0	534.0	10.0	17.
4630	534.0	539.0	5.0	26.
4631	539.0	549.0	10.0	14.
4632	549.0	559.0	10.0	15.
4633	559.0	569.0	10.0	10.
4634	569.0	579.0	10.0	23.
4635	579.0	589.0	10.0	7.

SCALES: DRILL SECTION - 1 inch = 100 feet  
MAGNETIC PROFILE - 1 inch = 4000 gammas

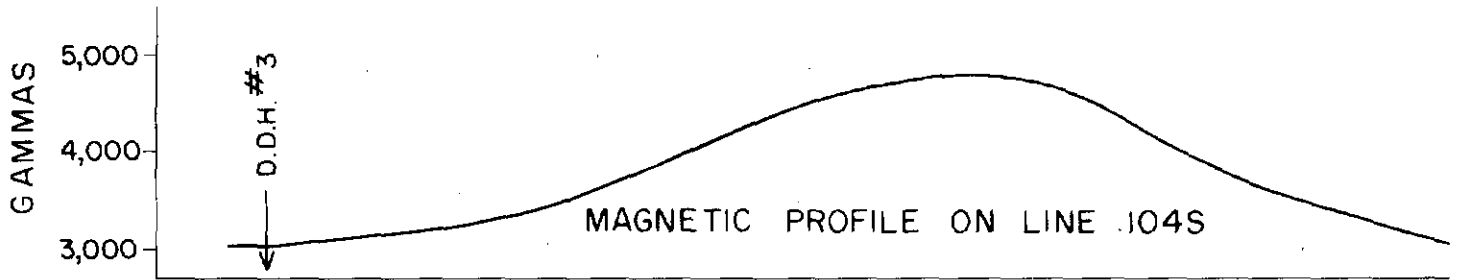


42H025E0001 83.1-29 FOX

290

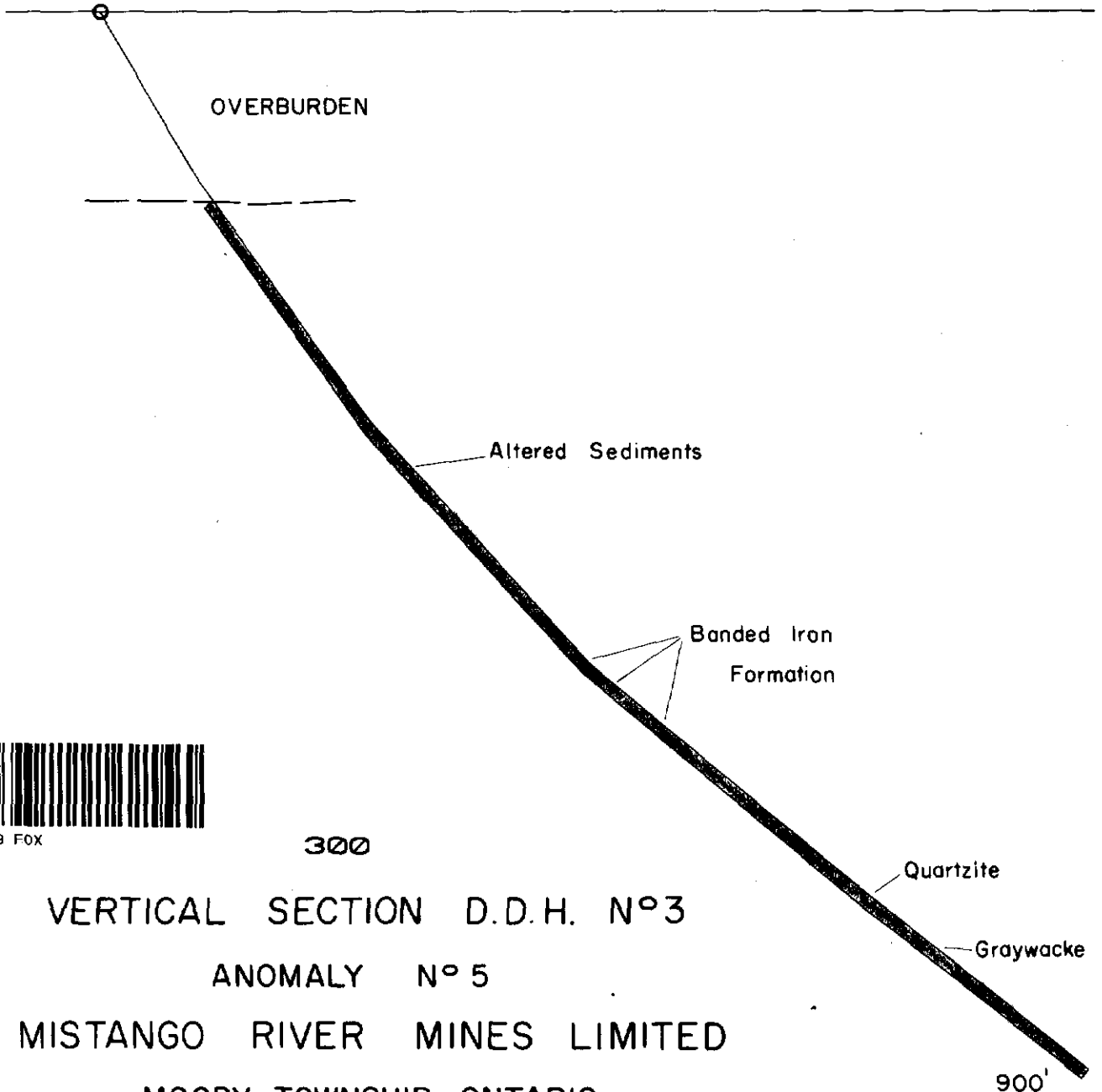


July 2, 1967



S.W.

N.E.

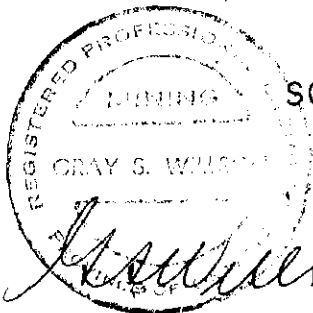


42H02SE0001 83.1-29 FOX

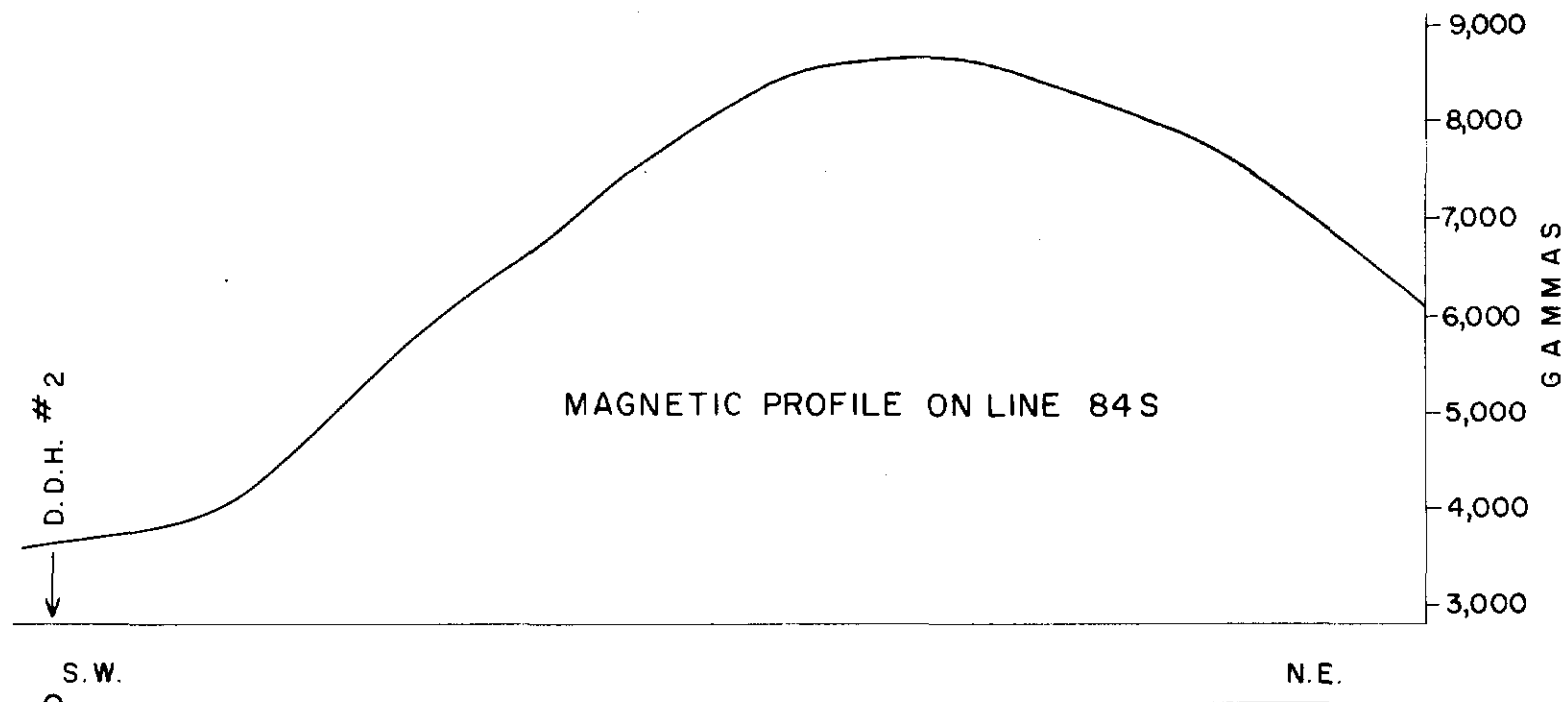
300

VERTICAL SECTION D.D.H. N<sup>o</sup>3  
 ANOMALY N<sup>o</sup>5  
 MISTANGO RIVER MINES LIMITED  
 MOODY TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet  
 MAGNETIC PROFILE - 1 inch = 2000 gammas



*Gray S. Wilson July 2, 1963*



S.W. N.E.

OVERBURDEN

Altered Sediments

Banded Iron Formation



42H02SE0001 83.1-29 FOX

310

VERTICAL SECTION D.D.H. N°2

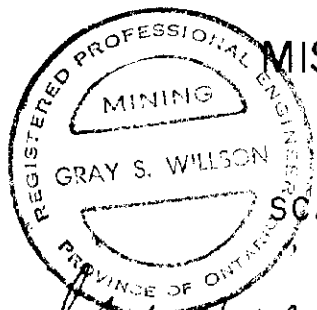
ANOMALY N° 5

MISTANGO RIVER MINES LIMITED

MOODY TOWNSHIP ONTARIO

SCALES: DRILL SECTION - 1 inch = 100 feet

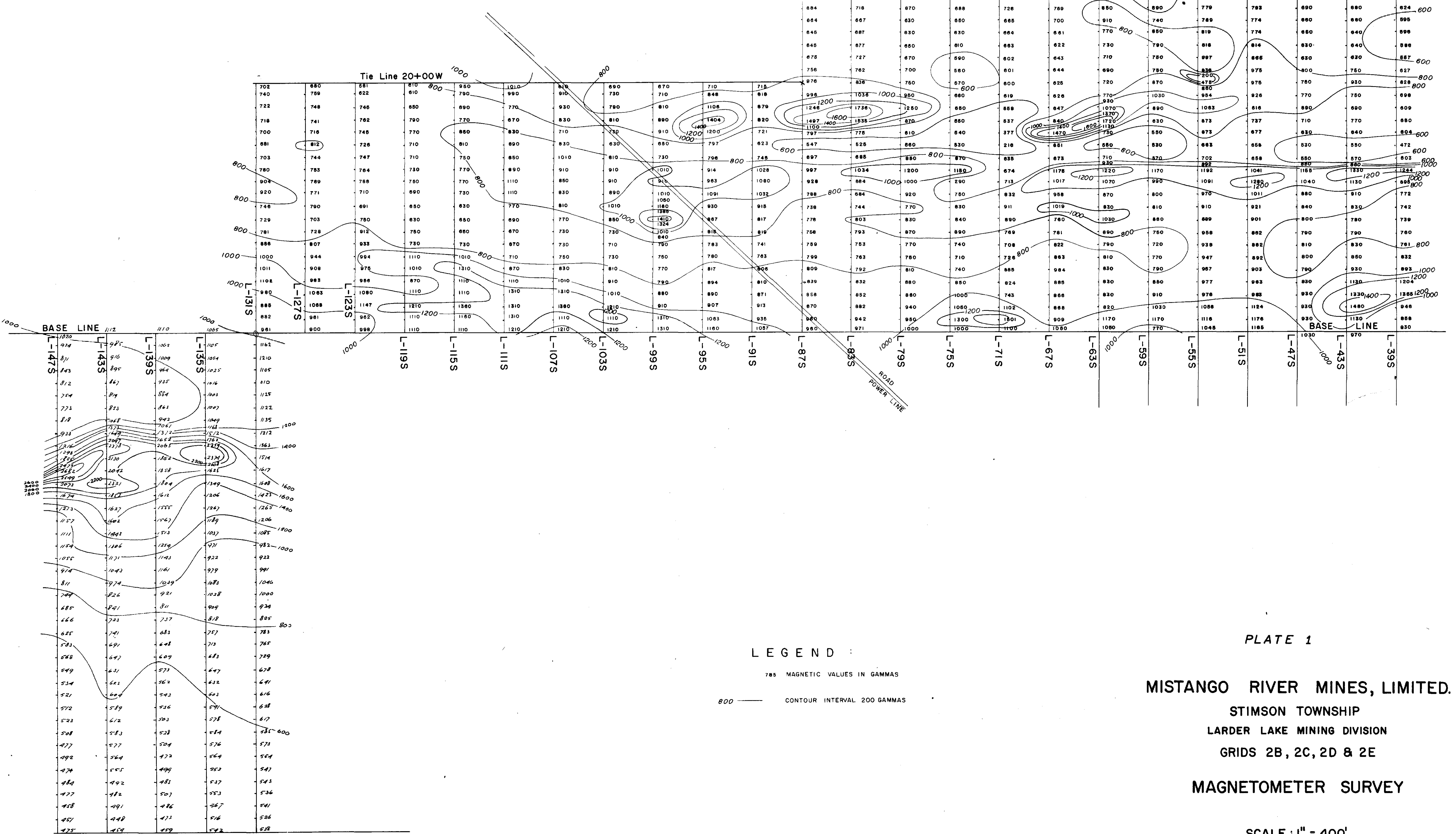
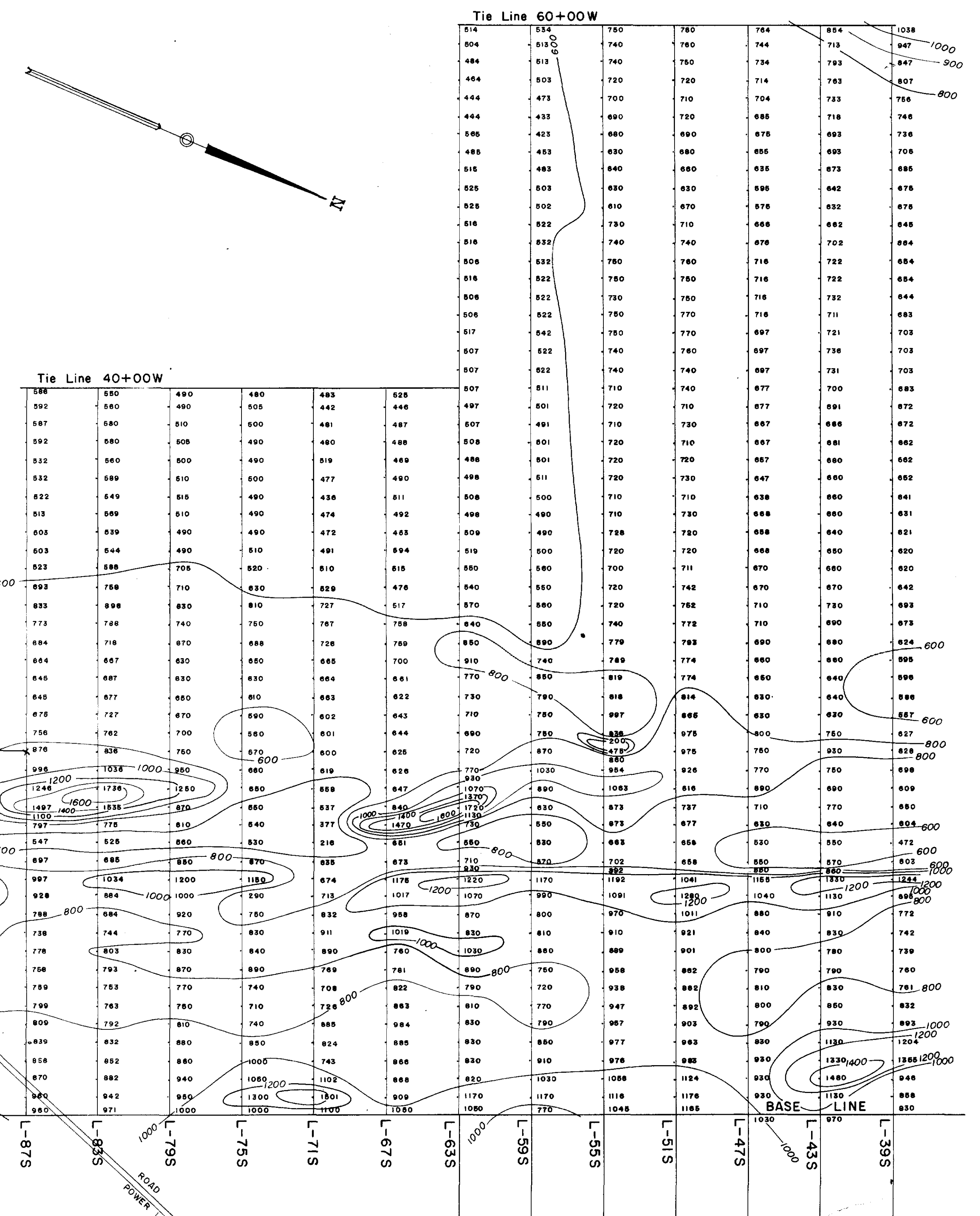
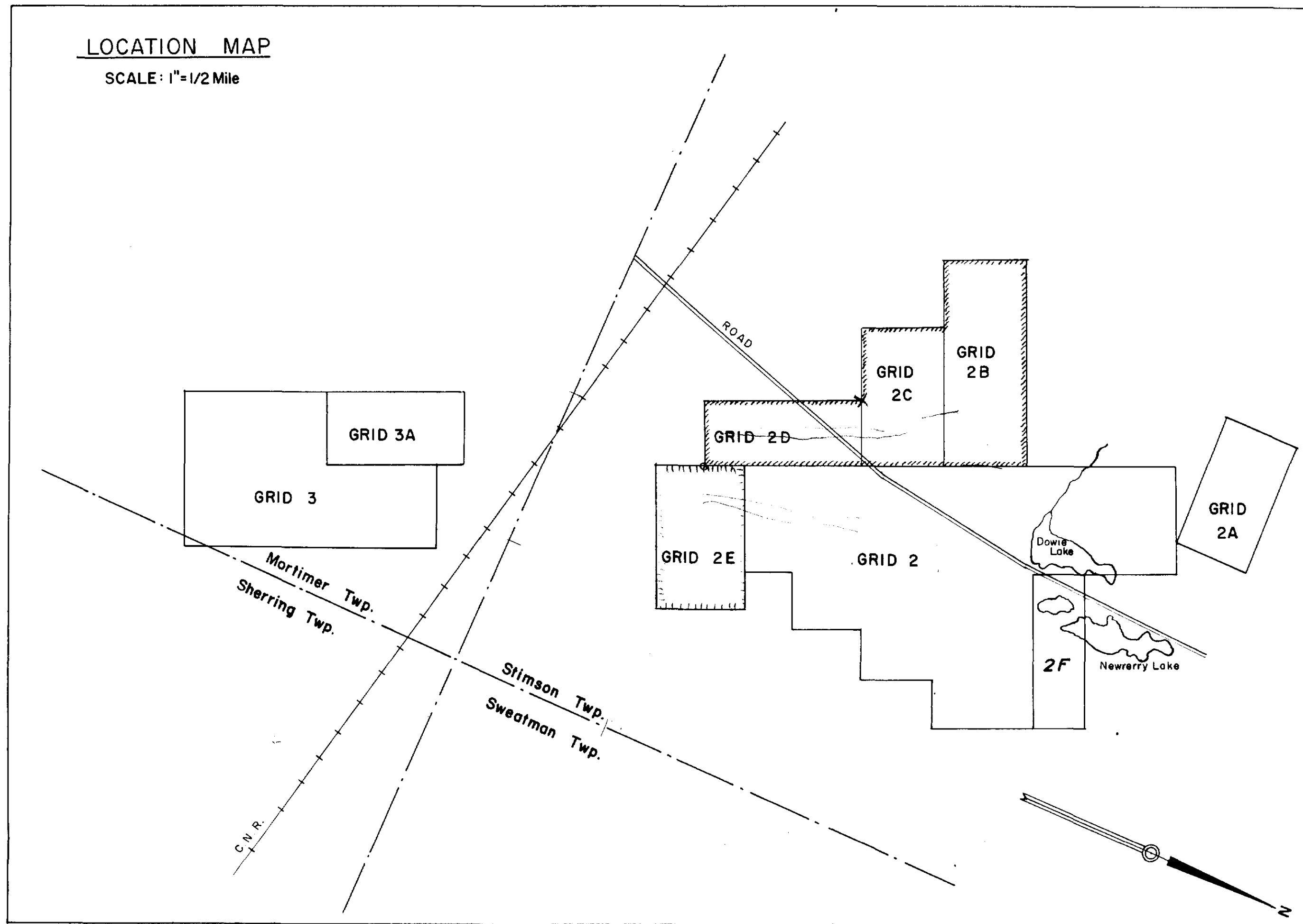
MAGNETIC PROFILE - 1 inch = 2000 gammas



*Gray S. Willson July 2, 1962.*

999'

LOCATION MAP  
SCALE: 1"=1/2 Mile



LEGEND  
785 MAGNETIC VALUES IN GAMMAS  
800 ——— CONTOUR INTERVAL 200 GAMMAS

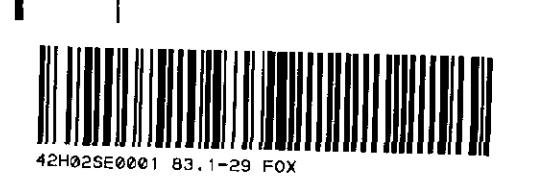
PLATE 1

MISTANGO RIVER MINES, LIMITED.  
STIMSON TOWNSHIP  
LARDER LAKE MINING DIVISION  
GRIDS 2B, 2C, 2D & 2E  
MAGNETOMETER SURVEY

SCALE: 1" = 400'

SURVEY BY HAROLD O. SEIGEL & ASSOCIATES, LIMITED

JANUARY 1965

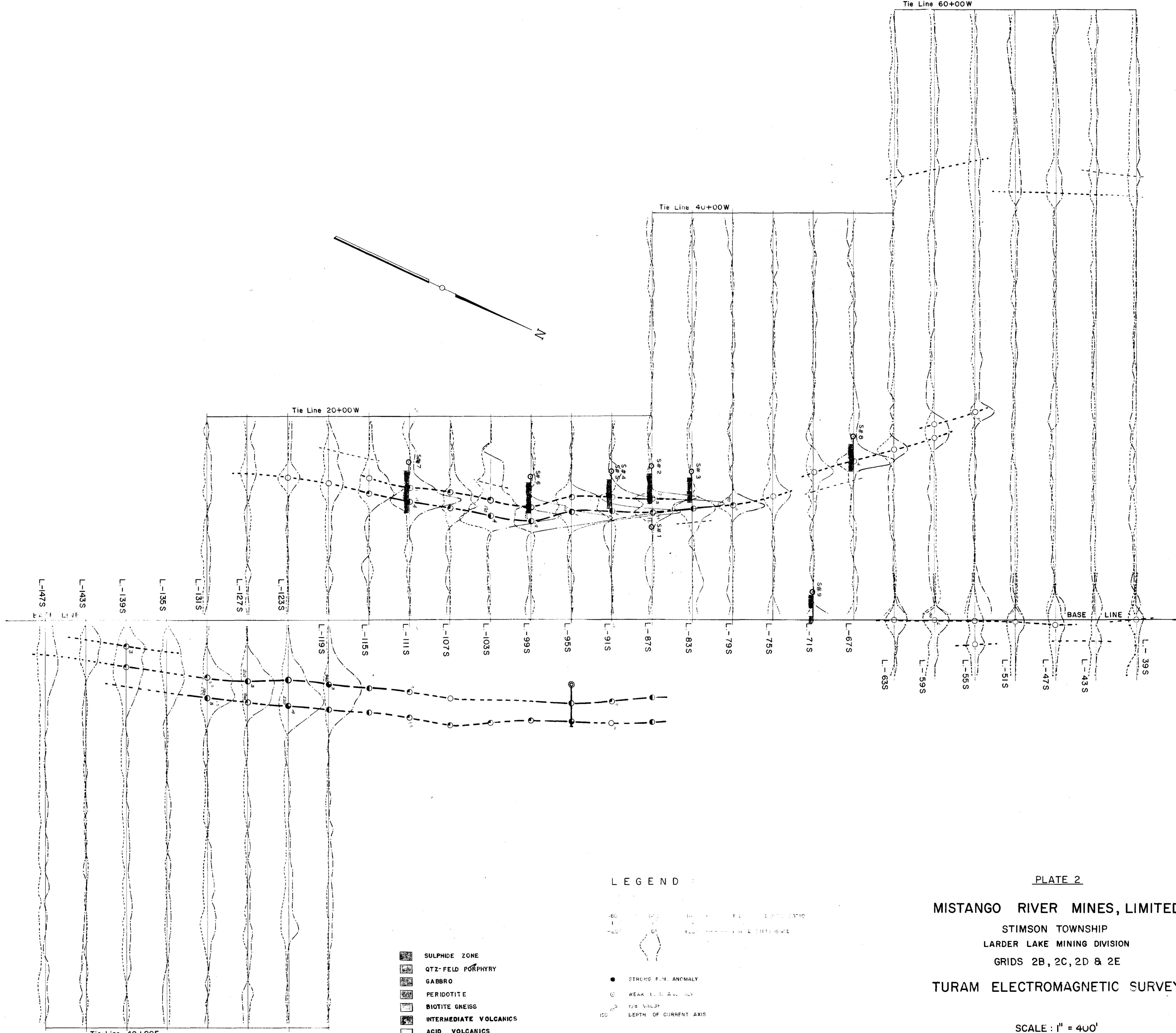
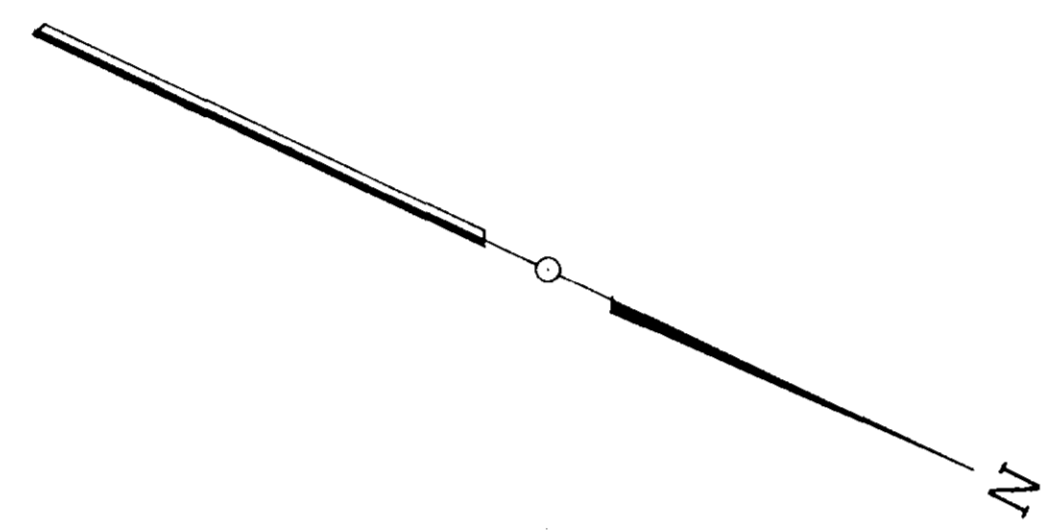


Tie Line 60+00W

Tie Line 40+00W

Tie Line 20+00W

Tie Line 40+00E



LEGEND

- SULPHIDE ZONE
- QTZ-FELD PORPHYRY
- GABBRO
- PERIDOTITE
- BIOTITE GNEISS
- INTERMEDIATE VOLCANICS
- ACID VOLCANICS

- STRONG F.M. ANOMALY
- WEAK F.M. ANOMALY
- 1/2 VALLEY
- DEPTH OF CURRENT AXIS

PLATE 2

MISTANGO RIVER MINES, LIMITED.

STIMSON TOWNSHIP  
LARDER LAKE MINING DIVISION

GRIDS 2B, 2C, 2D & 2E

TURAM ELECTROMAGNETIC SURVEY

SCALE: 1" = 400'

SURVEY BY HAROLD O. SEIGEL & ASSOCIATES, LIMITED

JANUARY 1965



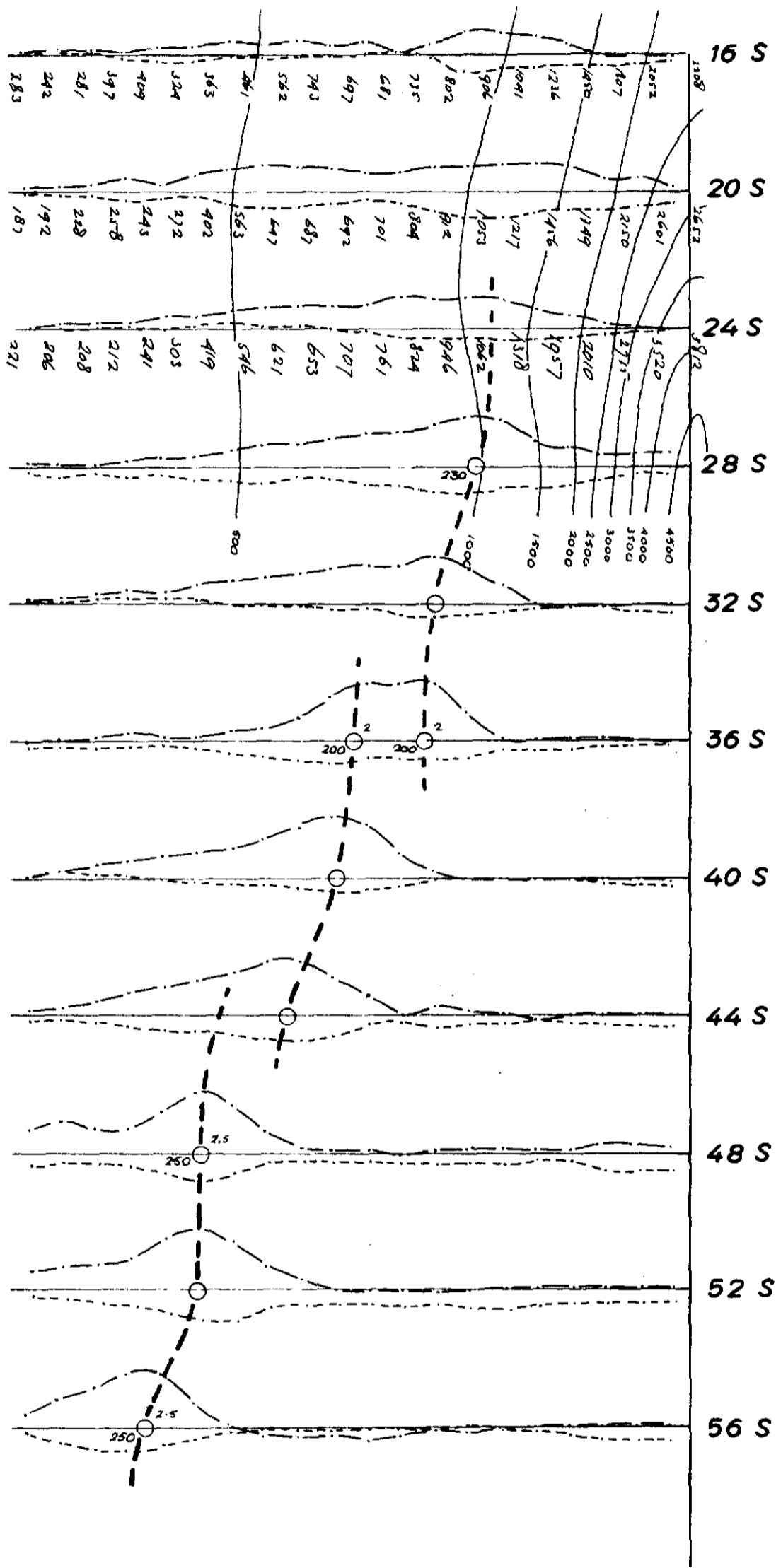
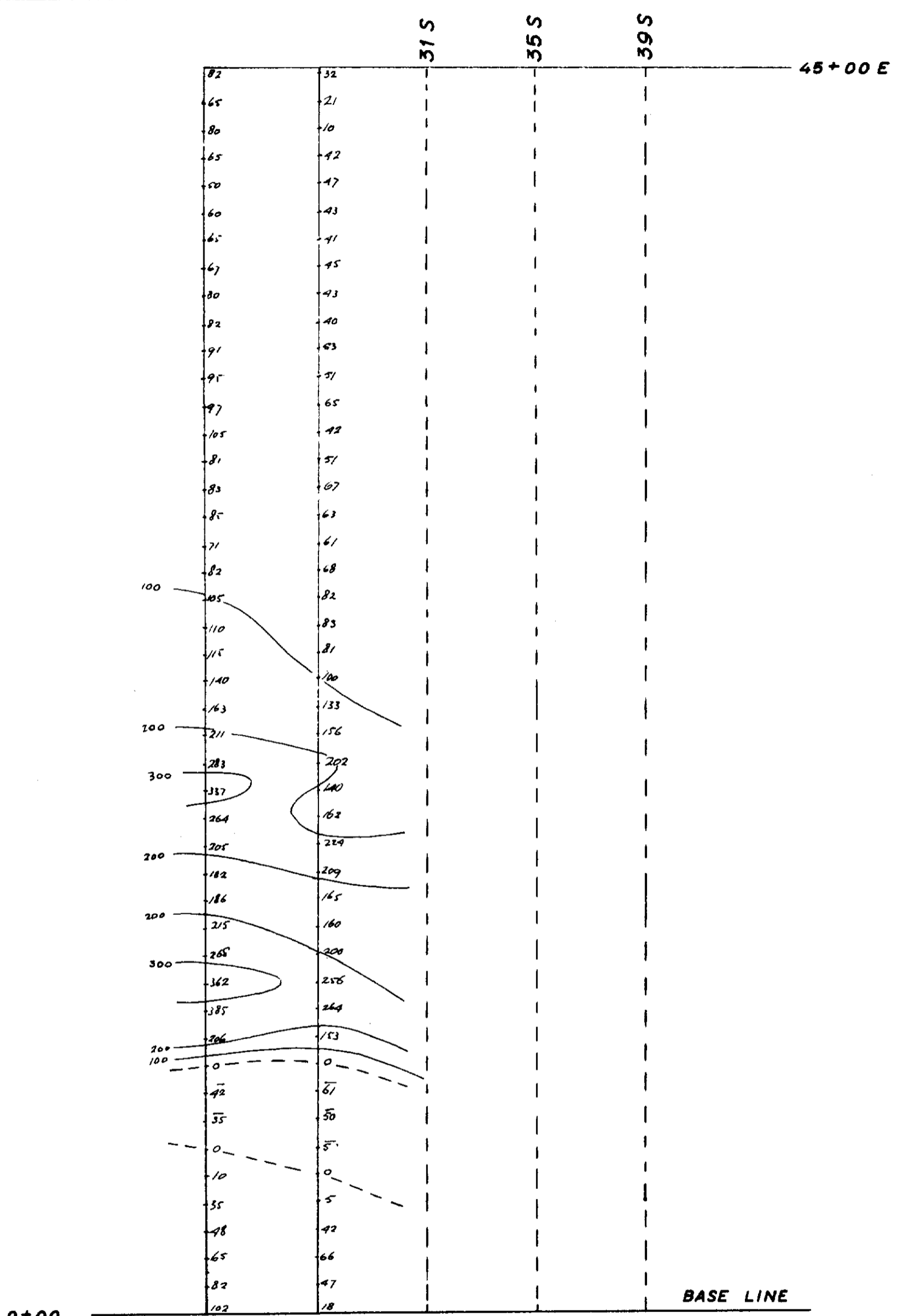


PLATE 3

HAROLD O. SEIGEL & ASSOCIATES, LIMITED		
PROJECT MISTANGO RIVER MINES LTD.		
SUBJECT <del>STIMSON</del> <sup>Martimer</sup> TOWNSHIP, GRID 3A.		
SURVEY	TURAM	400 cps
Scales:		Legend:
1" = 400'		F.S. RATIO ——— 1" = 40%
		PHASE DIFF. - - - - 1" = 20°
		○ <sup>1</sup> / <sub>d</sub> VALUE
		DEPTH ○
WORK BY:	PLOT BY: R.A.B.	DATE MARCH '65





0+00

PLATE 4

HAROLD O. SEIGEL & ASSOCIATES, LIMITED  
 PROJECT MISTANGO RIVER MINES LTD.  
 SUBJECT STIMSON TOWNSHIP GRID 2F.  
 SURVEY MAGNETOMETER

Scales: Legend:

1" = 400'

WORK BY: PLOT BY: R.A.B. DATE MARCH '65



42H02SE0001 83.1-29 FOX

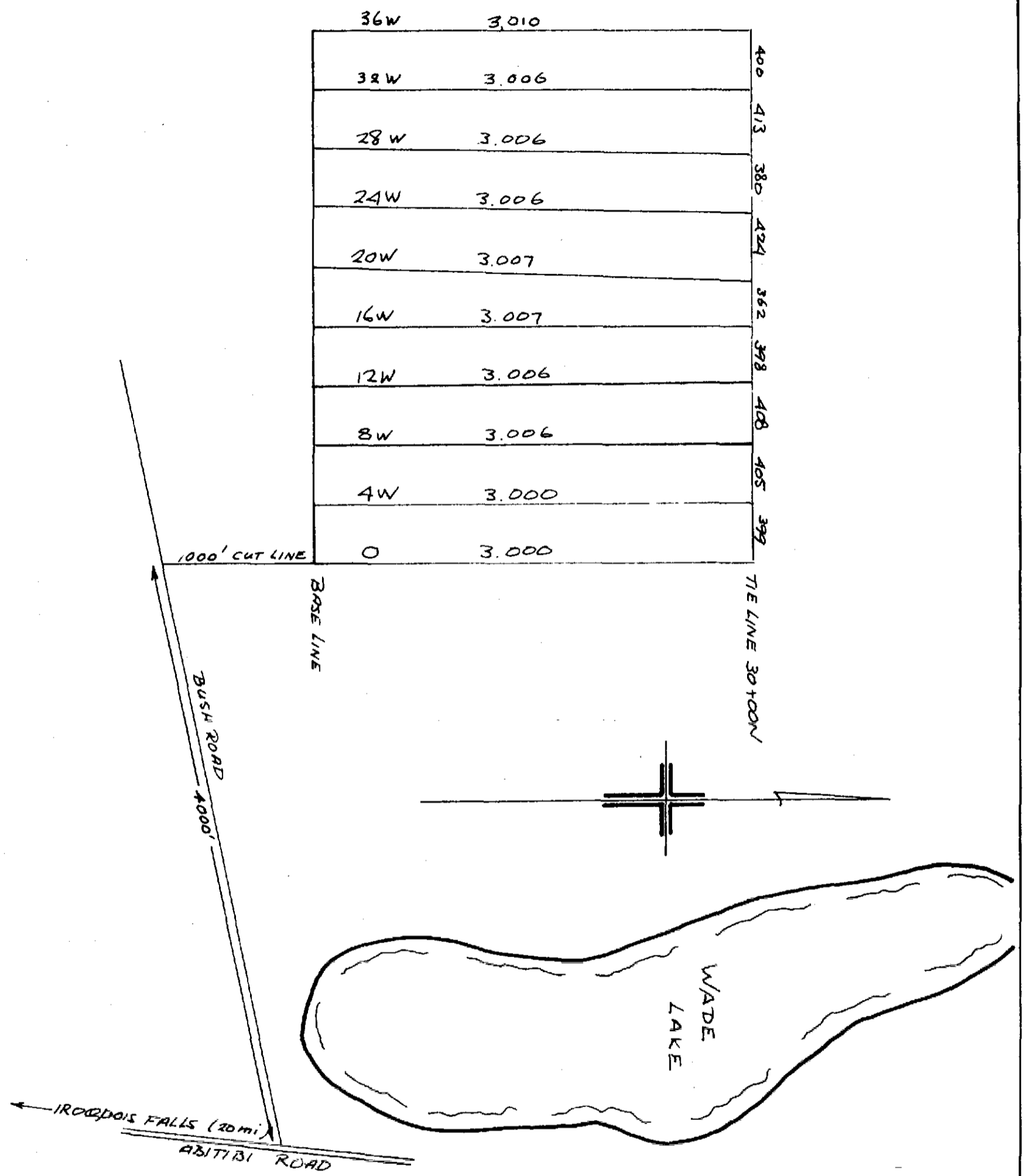


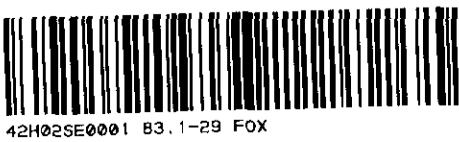
PLATE 5

HAROLD O. SEIGEL & ASSOCIATES, LIMITED  
 PROJECT MISTANGO RIVER MINES LTD.  
 SUBJECT STIMSON TWP. GRID 2G.  
 SURVEY LINES CUT

Scales: Legend:

1" = 800'

WORK BY: J.B. PLOT BY: R.A.B. DATE MARCH '65





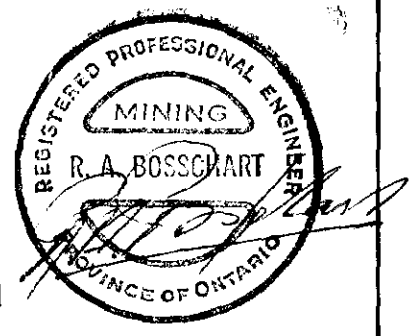
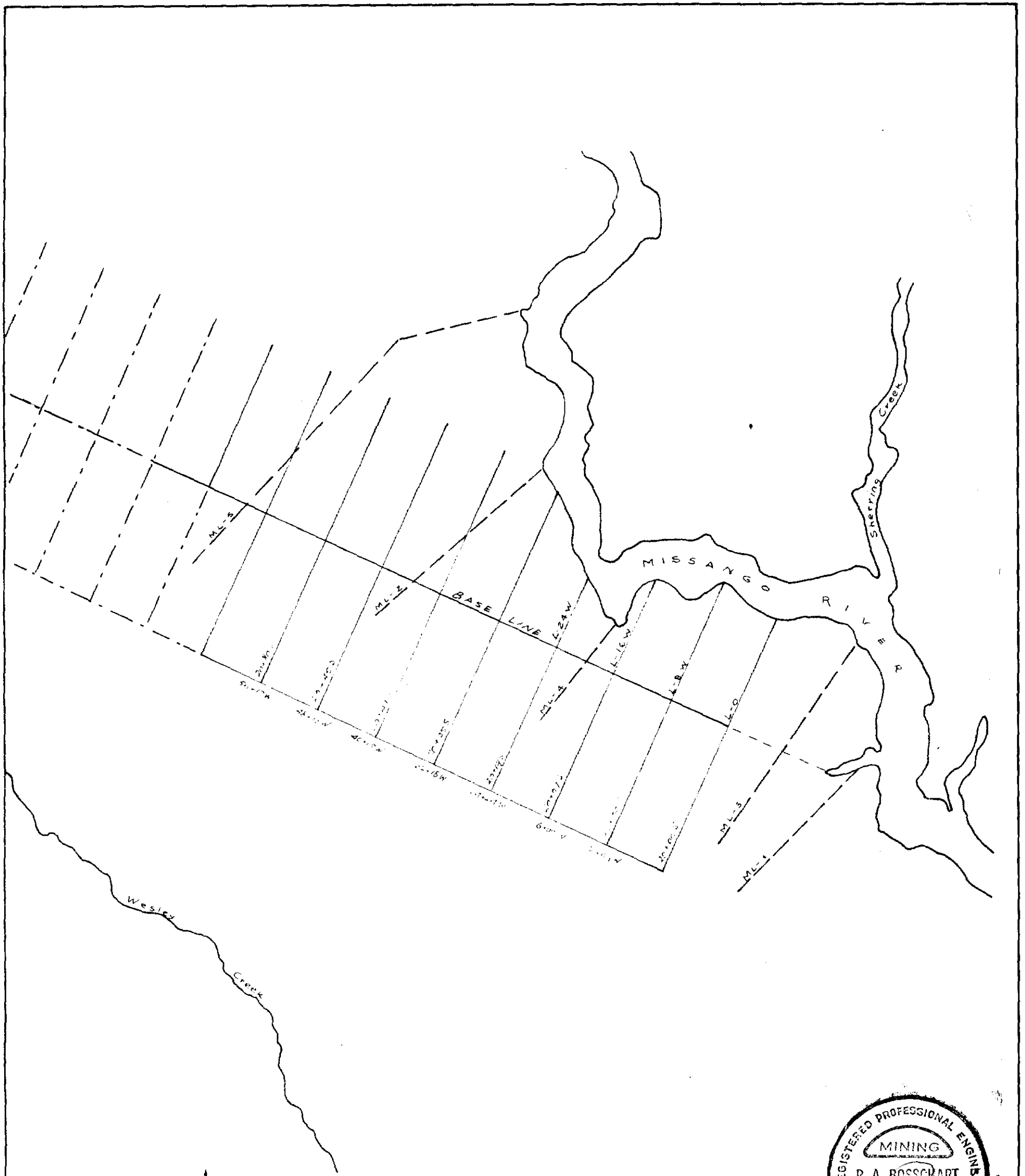


PLATE I

HAROLD O. SEIGEL & ASSOCIATES, LIMITED		
PROJECT MISTANGO RIVER MINES, LIMITED		
SUBJECT ANOMALY No. 4 SHERRING TWP		
SURVEY LINE CUTTING, MAG. RECON.		
<b>Scales:</b>	<b>Legend:</b>	
1" = 1320'	-----	Projected grid
	—————	Cut grid
	-----	Mag. reconnaissance lines.
WORK BY:	PLOT BY:	DATE Nov. 1964



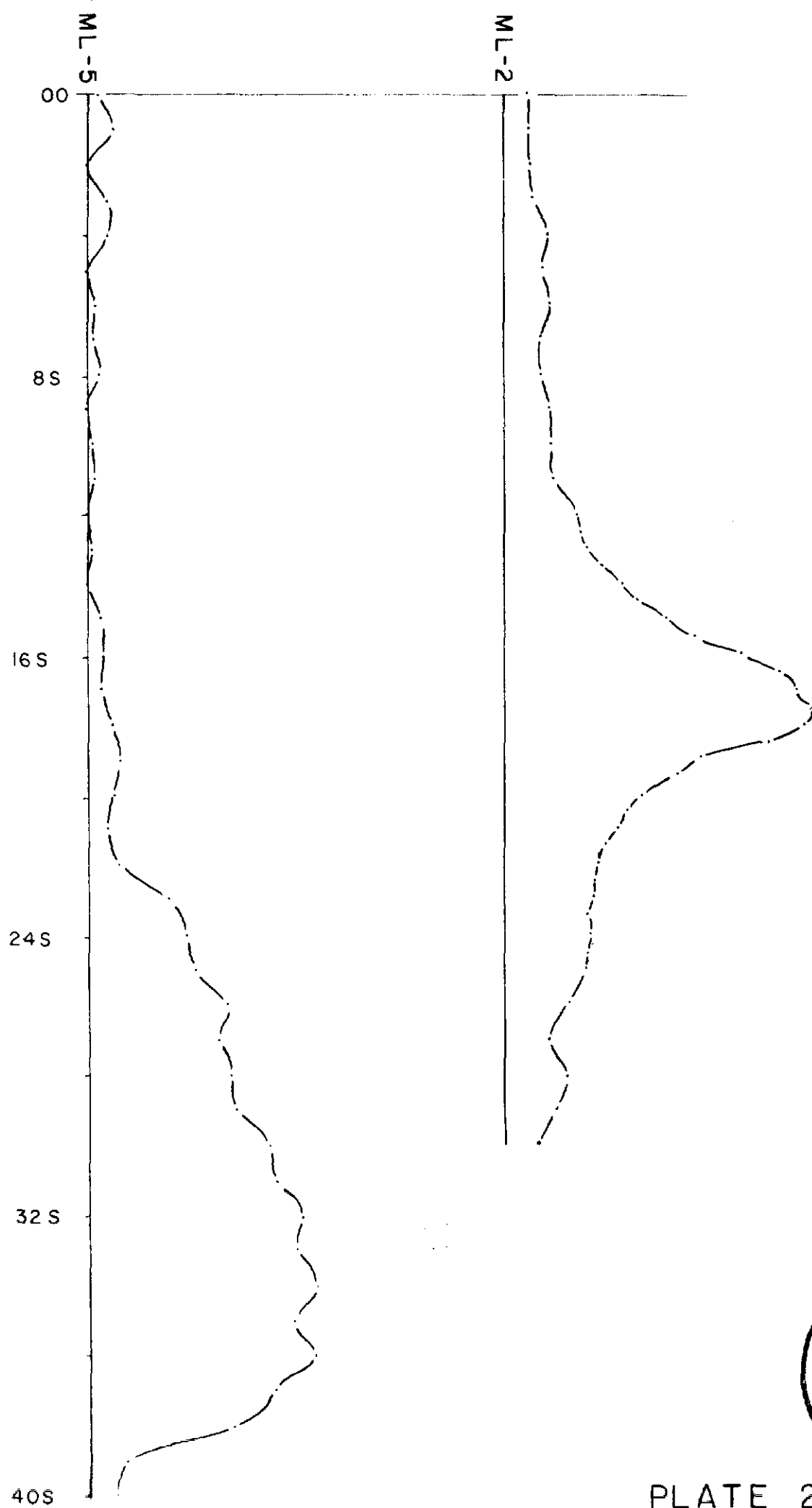


PLATE 2

HAROLD O. SEIGEL & ASSOCIATES, LIMITED  
 PROJECT MISTANGO RIVER MINES, LIMITED  
 SUBJECT ANOMALY No. 4 SHERRING TWP  
 SURVEY MAGNETOMER RECONNAISSANCE

Scales: Legend:  
 HOR. 1" = 400'  
 VERT. 1" = 1000 gammas

WORK BY: PLOT BY: DATE Nov. 1964



42H02SE0001 83.1-29 FOX

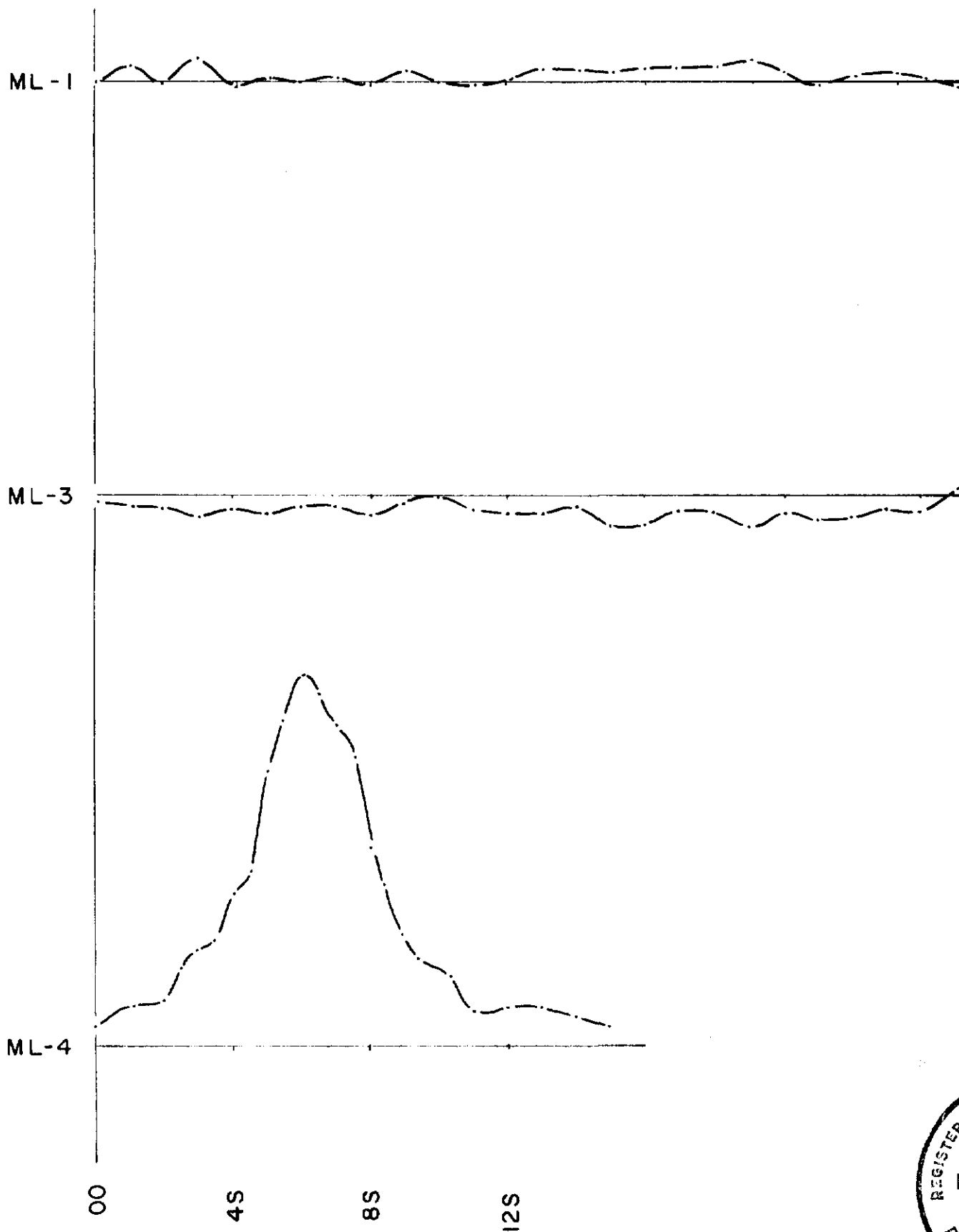


PLATE 3

HAROLD O. SEIGEL & ASSOCIATES, LIMITED  
 PROJECT MISTANGO RIVER MINES, LIMITED  
 SUBJECT ANOMALY No. 4 SHERRING TWP  
 SURVEY MAGNETOMER RECONNAISSANCE

Scales:                      Legend:  
 HOR. 1" = 400'  
 VERT. 1" = 1000 gammas

WORK BY:                      PLOT BY:                      DATE Nov. 1964



42H02SE0001 83.1-29 FOX

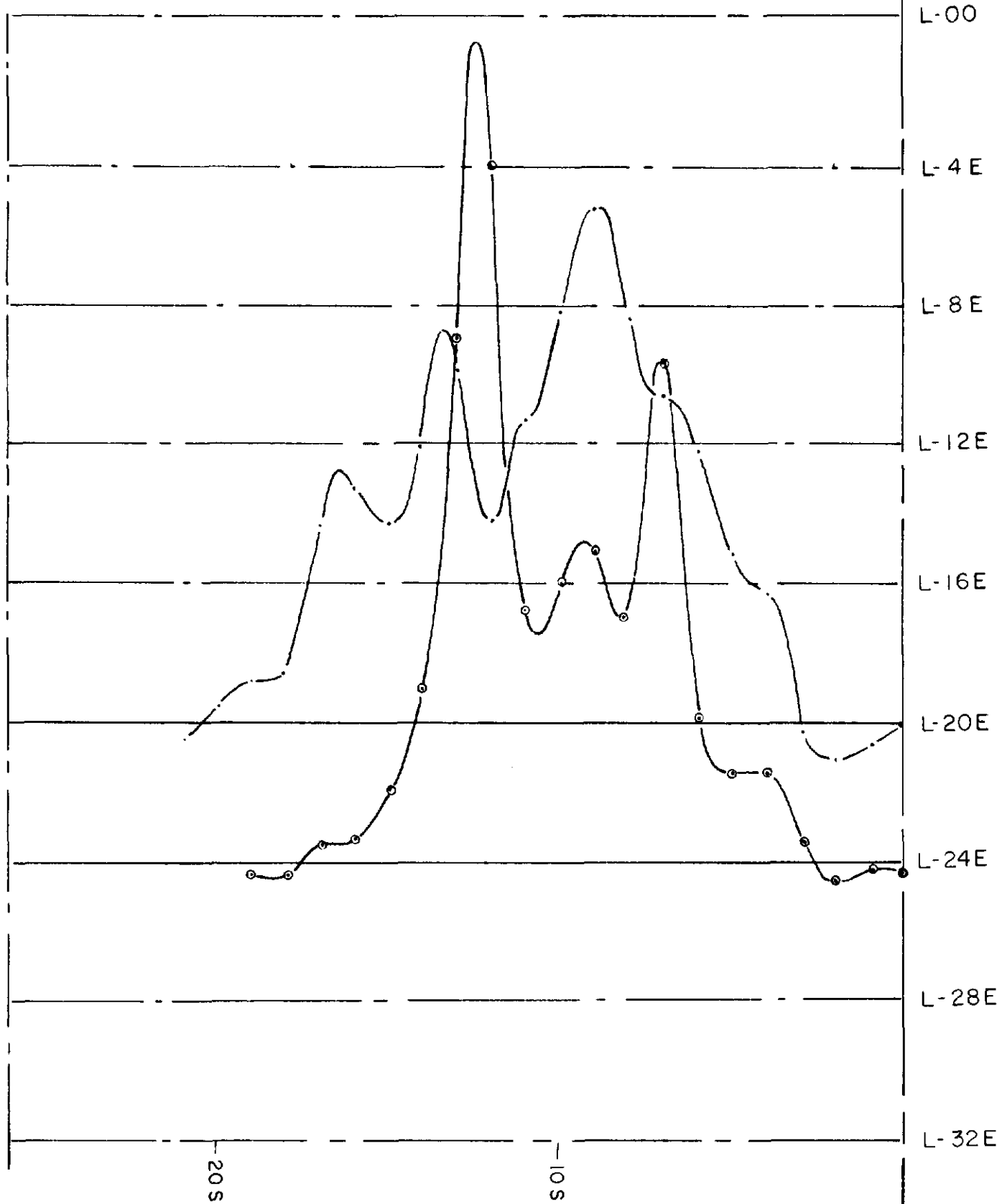


PLATE 4

HAROLD O. SEIGEL & ASSOCIATES, LIMITED  
 PROJECT MISTANGO RIVER MINES, LIMITED  
 SUBJECT ANOMALY No. 1 STIMSON TWP  
 SURVEY MAGNETOMER RECONNAISSANCE

Scales:

HOR 1" = 400'  
 VERT. 1" = 1000 gammas

Legend:



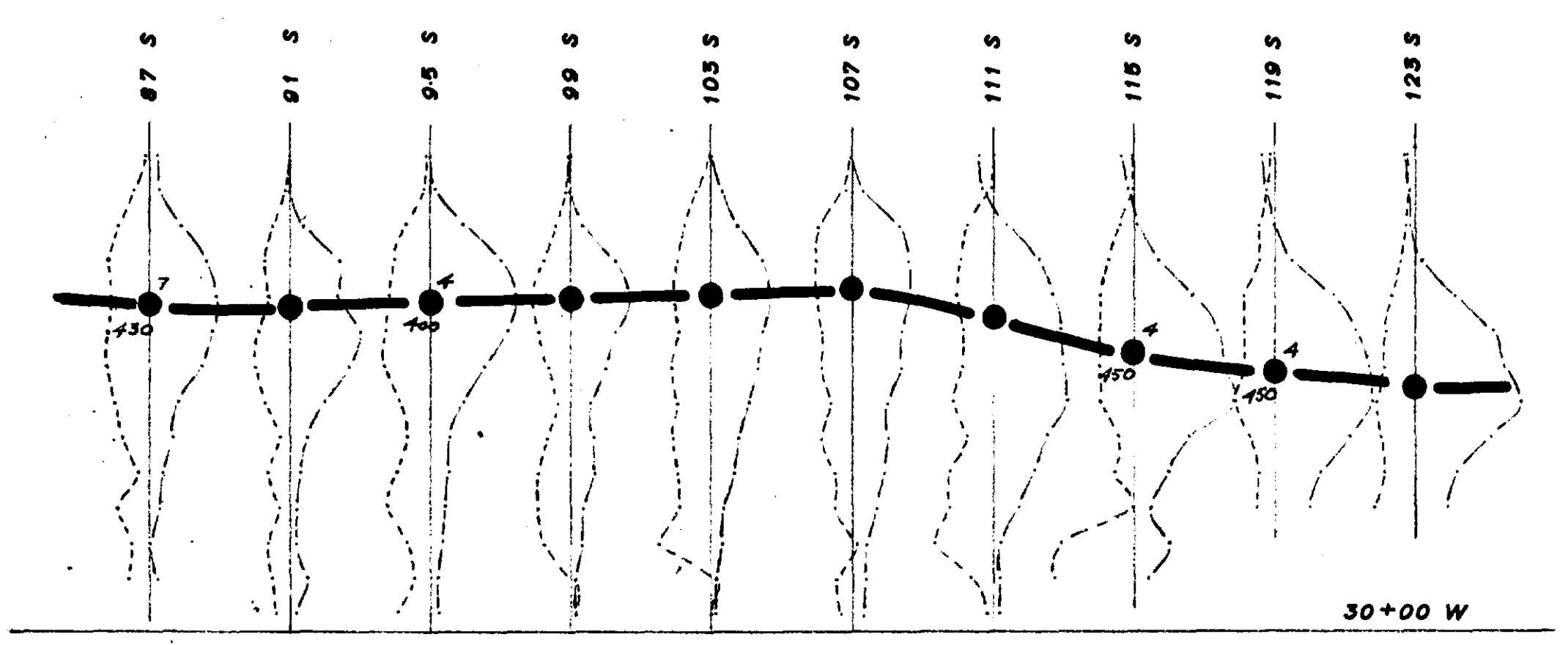
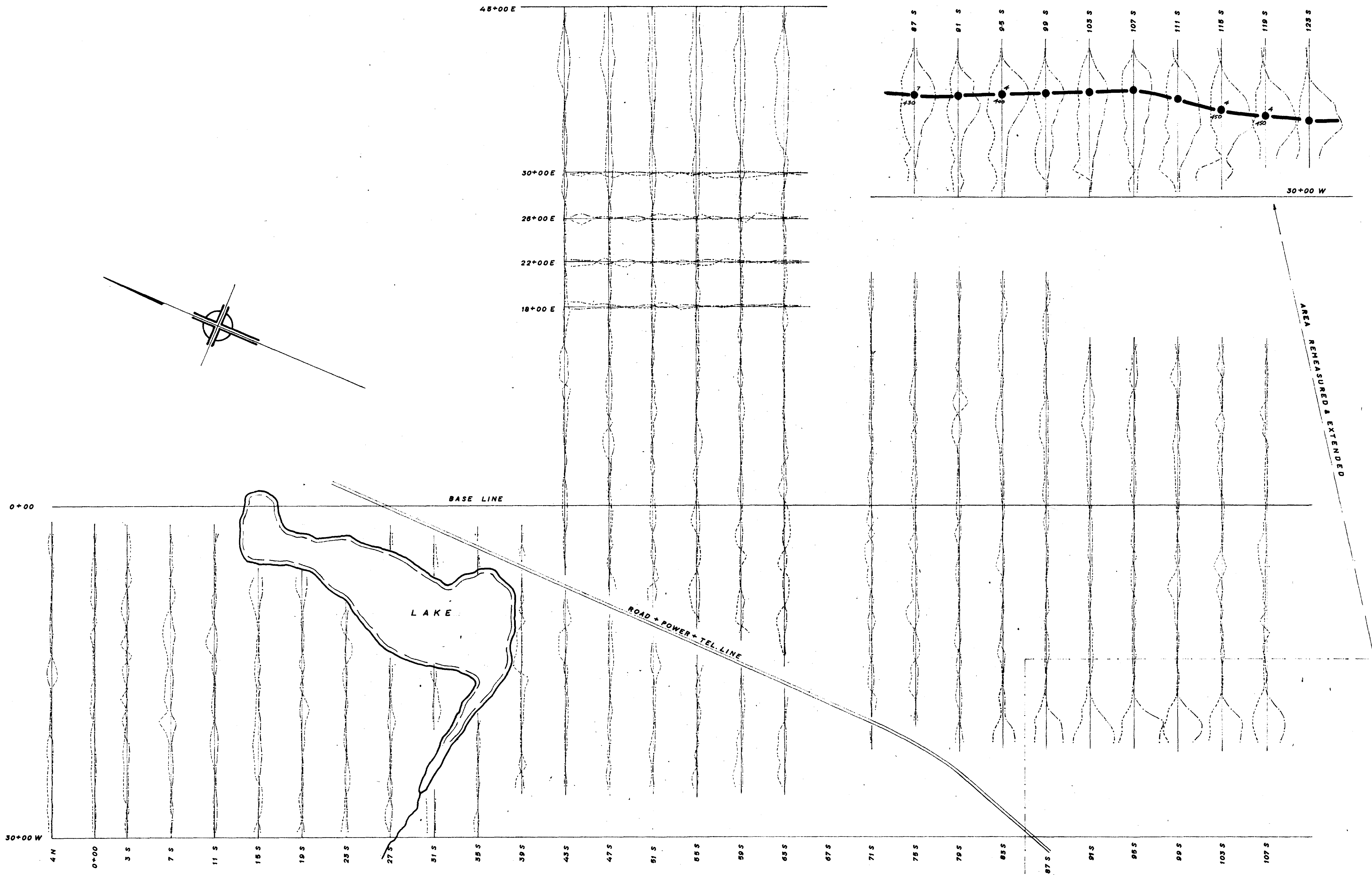
42H02SE0001 83.1-29 FOX

400

WORK BY :

PLOT BY :

DATE

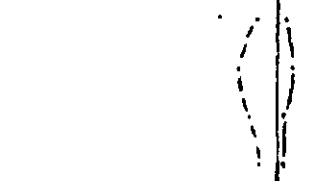


AREA REMEASURED & EXTENDED

GRID 2

LEGEND:

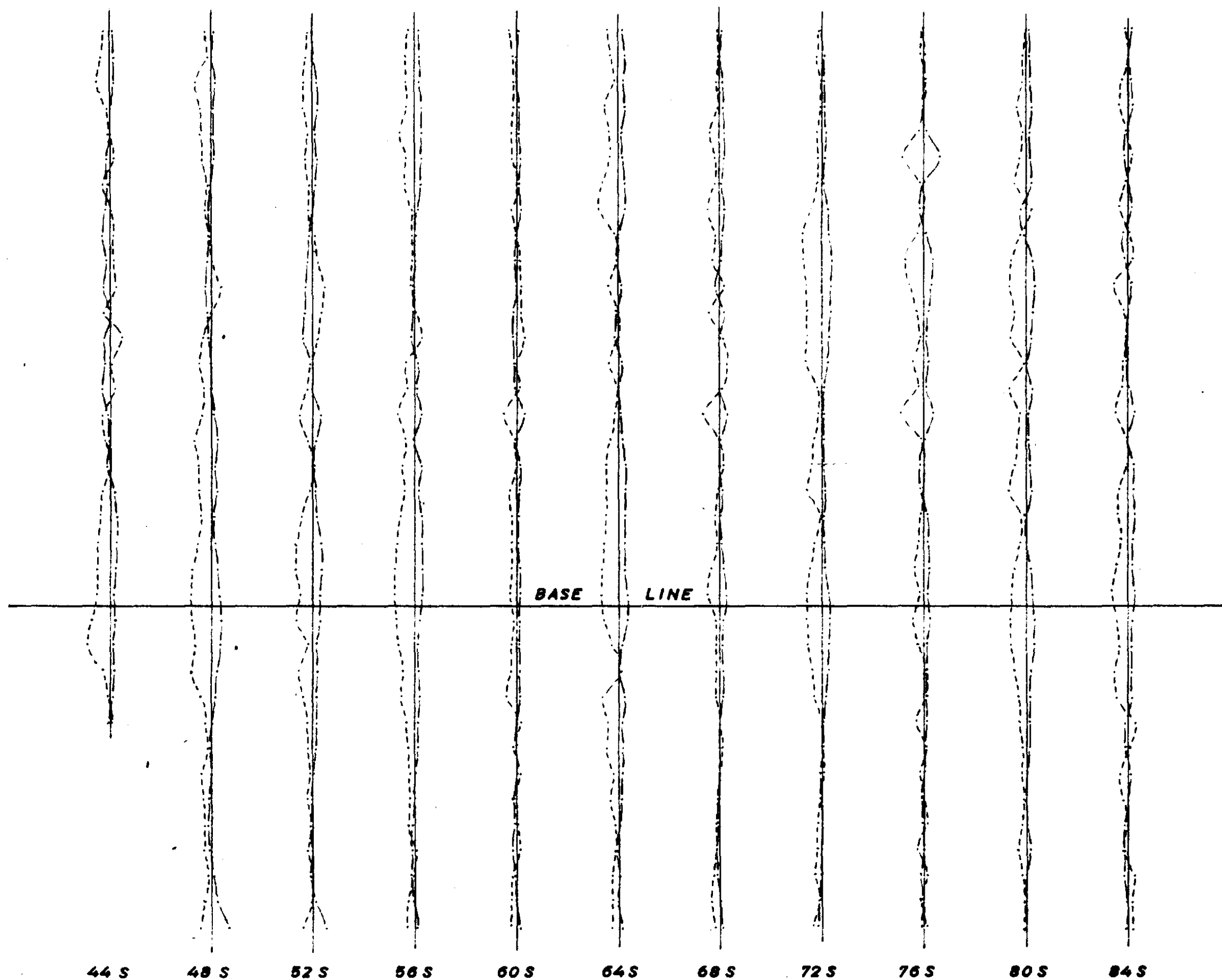
RATIO  $\frac{100}{100}$   $\frac{100}{100}$   $\frac{100}{100}$   
 PHASE  $-10^\circ$   $0$   $+10^\circ$



$\rho$  = RESISTIVITY ( $\Omega\text{cm}$ )  
 $d$  = THICKNESS (m)  
 VALUE  $\frac{10}{100}$   
 DEPTH TO CURRENT AXIS (ft)

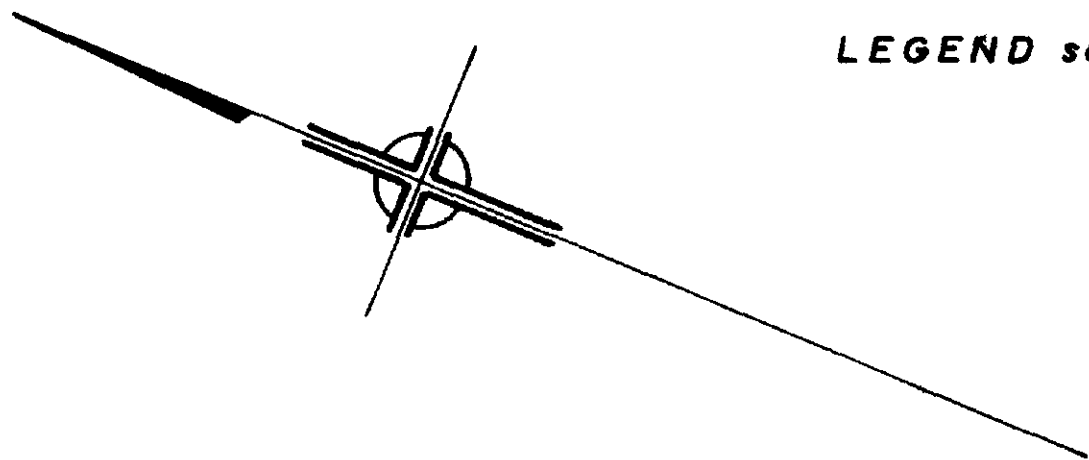
TURAM ELECTROMAGNETIC SURVEY  
 by  
 MOREAU, WOODARD & CO LTD.  
 for  
**STIMSON SYNDICATE**  
 on the  
 STIMSON CONCESSION  
 STIMSON & MORTIMER TWPS. ONTARIO  
 SCALE: 1" = 400' DATE: JUNE 26, 1952  
 MAP NO: 63-15- & DRAWN: [Signature]





GRID 3

LEGEND see 63-12-a



TURAM ELECTROMAGNETIC SURVEY

by

MOREAU, WOODARD & CO LTD.

for

**STIMSON SYNDICATE**

on the

STIMSON CONCESSION

STIMSON & MORTIMER TWPS. ONTARIO

SCALE: 1" = 400'

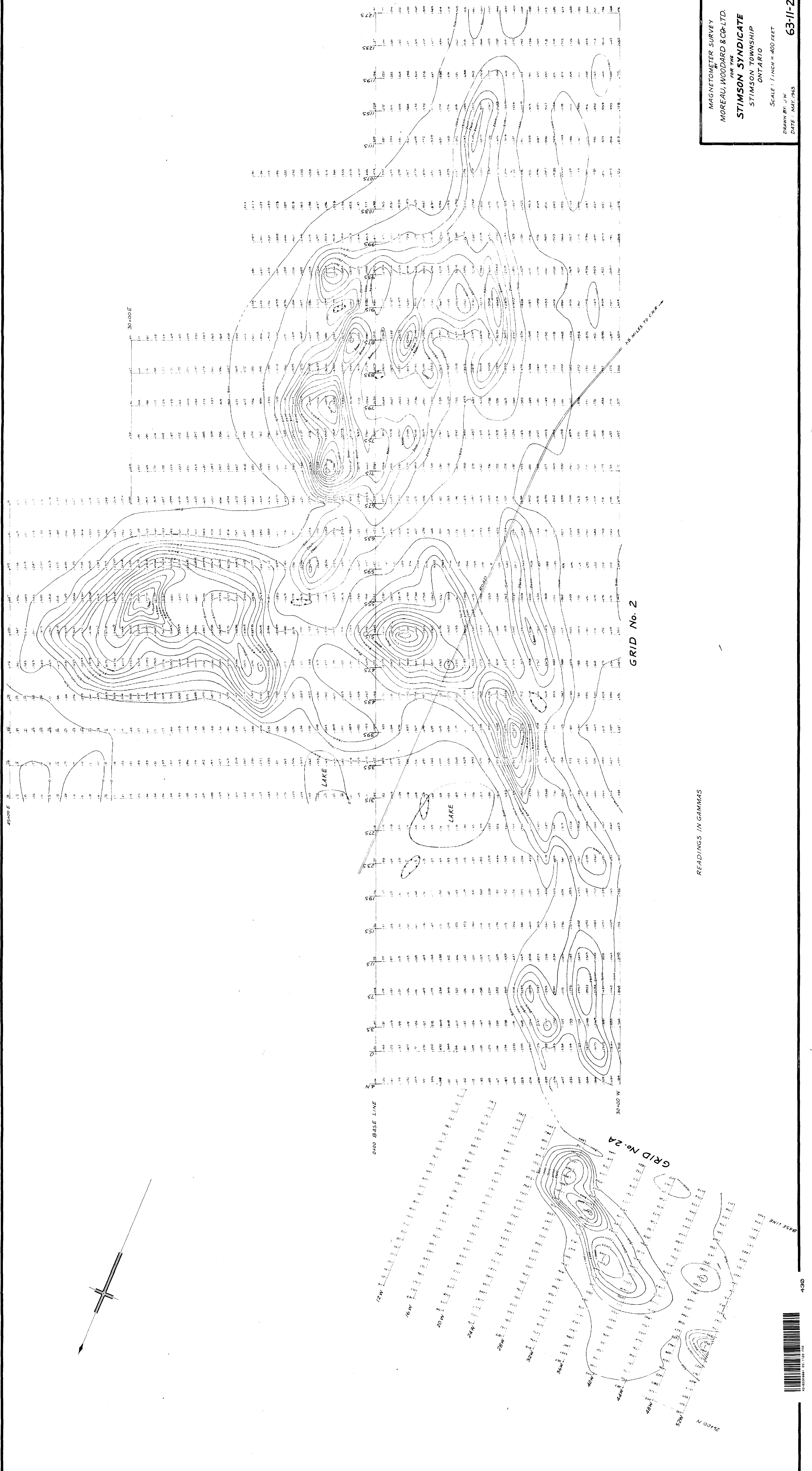
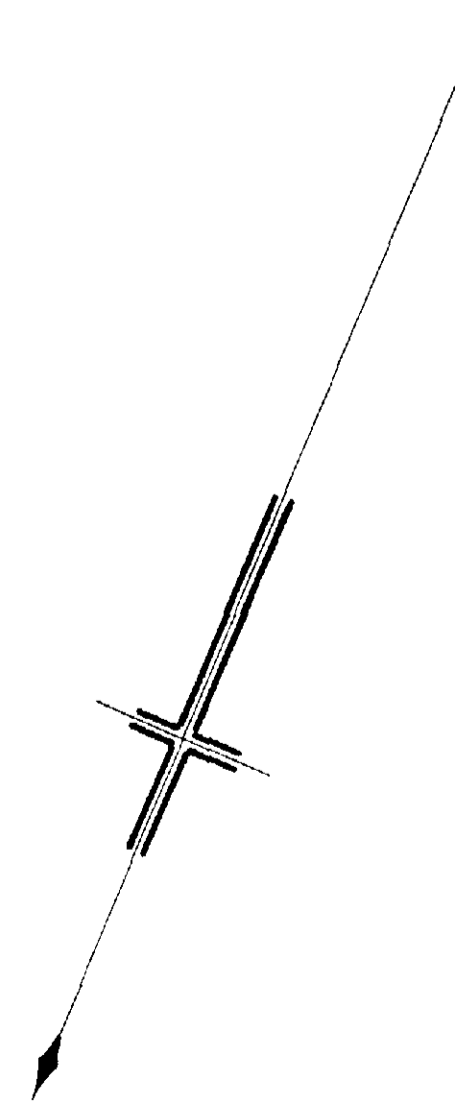
MAP NO: 63-15-b

DATE: JUNE 29, 1963

DRAWN: *[Signature]*



42H025E0001 83.1-29 FOX



READINGS IN GAMMAS

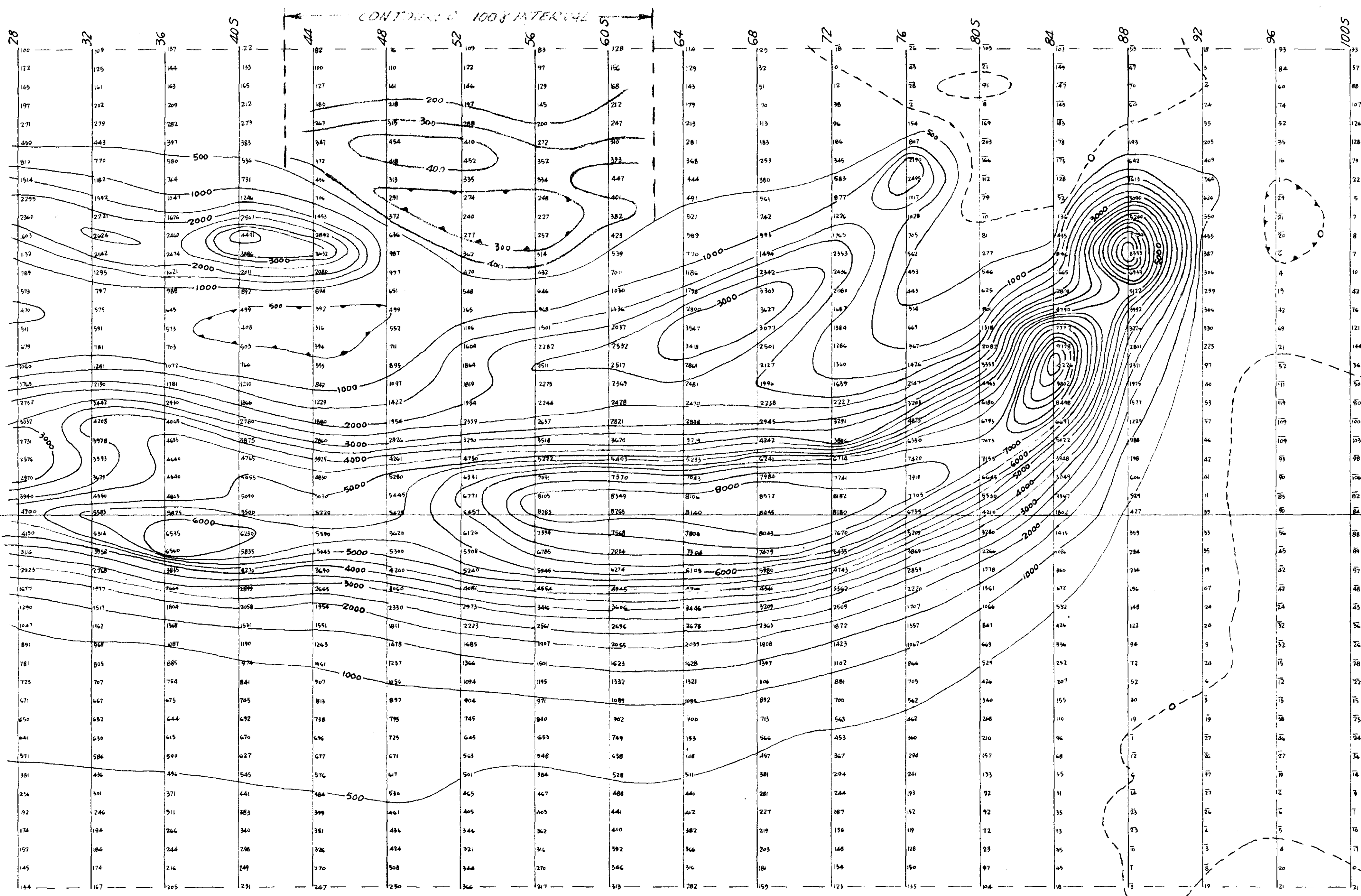
GRID No. 2

MAGNETOMETER SURVEY  
MOREAU, WOODARD & CO. LTD.  
FOR THE  
**STIMSON SYNDICATE**  
STIMSON TOWNSHIP  
ONTARIO  
SCALE: 1 INCH = 400 FEET  
DRAWN BY: J.W.  
DATE: MAY, 1963

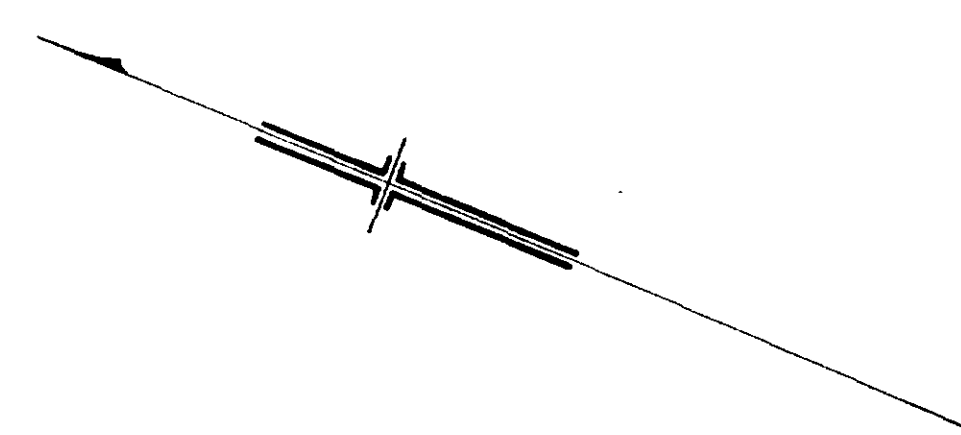
63-11-2



430



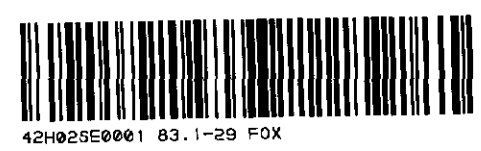
GRID No 3



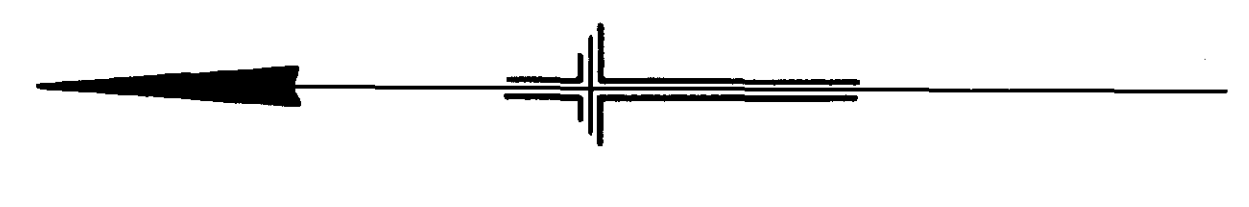
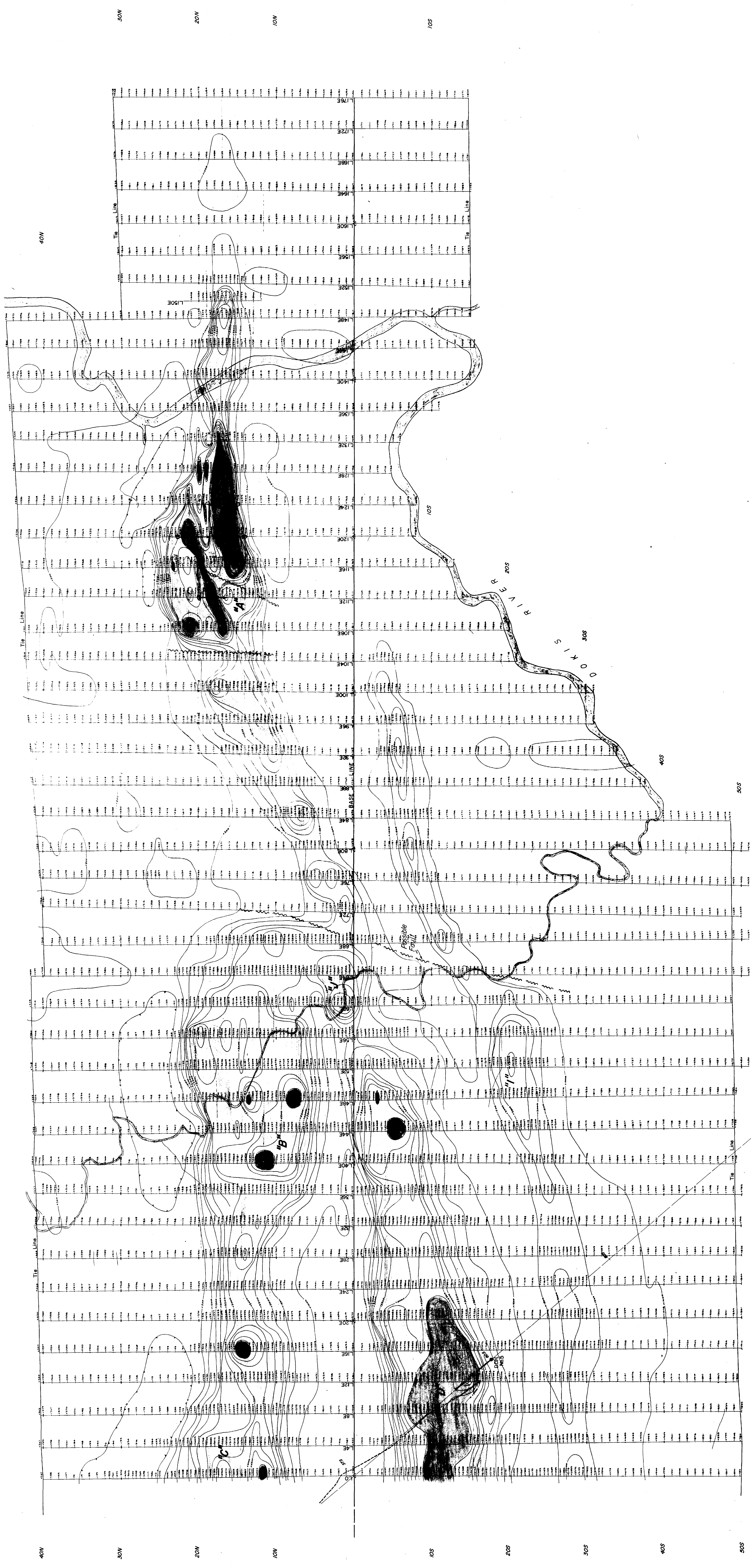
CONTOUR INTERVAL 500'

MAGNETOMETER SURVEY  
 BY  
 MOREAU, WOODARD & CO. LTD.  
 FOR  
**STIMSON SYNDICATE**  
 ON THE  
 STIMSON CONCESSION  
 STIMSON & MORTIMER T.W.P.S.  
 COCHRANE AREA, ONT.

SCALE: 1 INCH = 400 FEET  
 DRAWN: M.F.M.  
 DATE: April 1963  
 MAP No 63-11-3





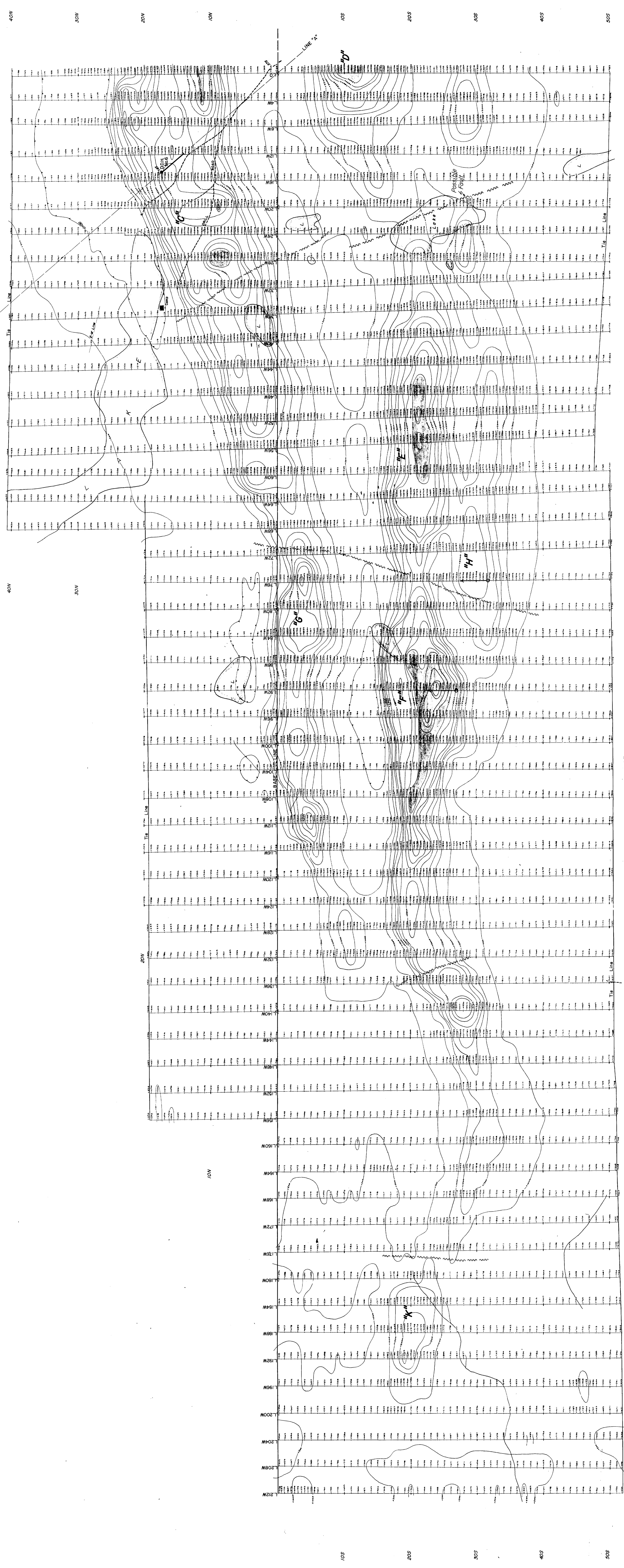


- LEGEND**
- MEASUREMENT STATIONS ALONG PICKET LINES
  - RELATIVE VALUES OF THE VERTICAL COMPONENT FORCE OF THE EARTH'S MAGNETIC FIELD (in Gammas)
    - 5000 TO 35000 GAMMAS
    - 35000 TO 45000 GAMMAS
    - 45000 TO 55000 GAMMAS
  - MAGNETIC CONTOURS (500 gamma interval)
  - MAGNETIC BASE STATION
  - MAGNETIC DEPRESSION
  - POSSIBLE FAULT
  - PROPOSED DIAMOND DRILL HOLE

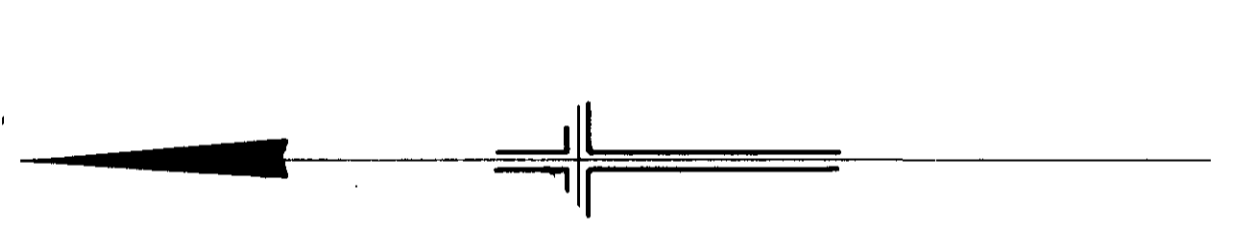
MAGNETOMETER SURVEY  
—FOR—  
**MISTANGO RIVER MINES LTD.**  
—ON—  
**ANOMALY NO. 6—EAST HALF**  
—MOODY and GALNA Townships, ONTARIO—  
—BY—  
**PROSPECTING GEOPHYSICS LIMITED**

NOVEMBER—DECEMBER 1982  
SCALE—1:4000





- LEGEND**
- MEASUREMENT STATIONS ALONG PICKET LINES
  - RELATIVE VALUES OF THE VERTICAL COMPONENT FORCE OF THE EARTH'S MAGNETIC FIELD (in gammas)
  - MAGNETIC CONTOURS (500 gamma interval)
  - MAGNETIC BASE STATION
  - +1000 TO +3000 GAMMAS
  - +3000 TO +5000 GAMMAS
  - 5000 TO GAMMAS
  - MAGNETIC DEPRESSION
  - POSSIBLE FAULT
  - PROPOSED DIAMOND DRILL HOLE



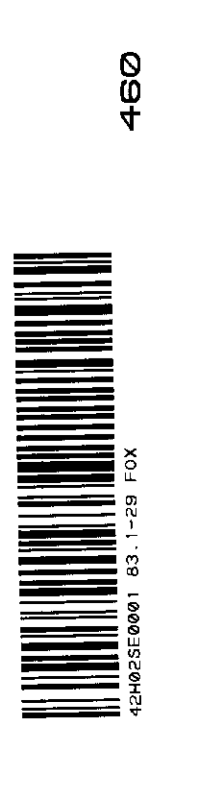
MAGNETOMETER SURVEY

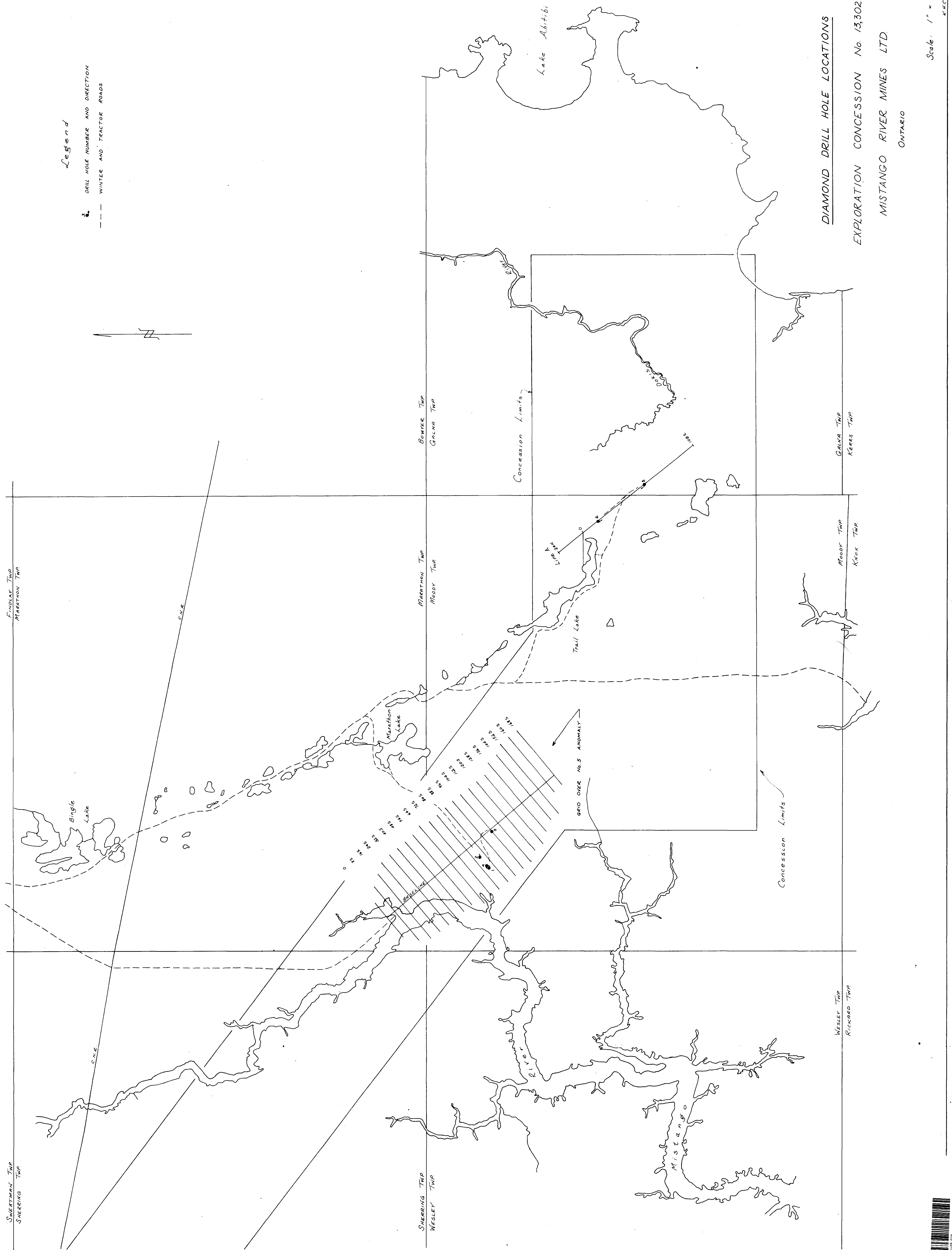
**MISTANGO RIVER MINES LTD.**

ANOMALY NO. 6 — WEST HALF  
— MOODY and GALNA Townships, ONTARIO —

PROSPECTING GEOPHYSICS LIMITED

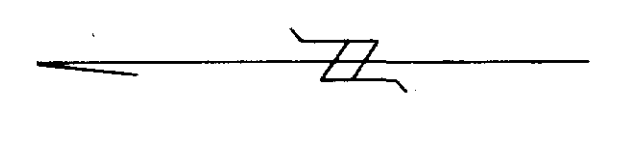
NOVEMBER—DECEMBER 1962 SCALE—1"=400'





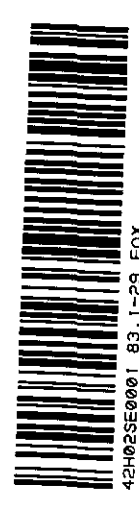
Legend

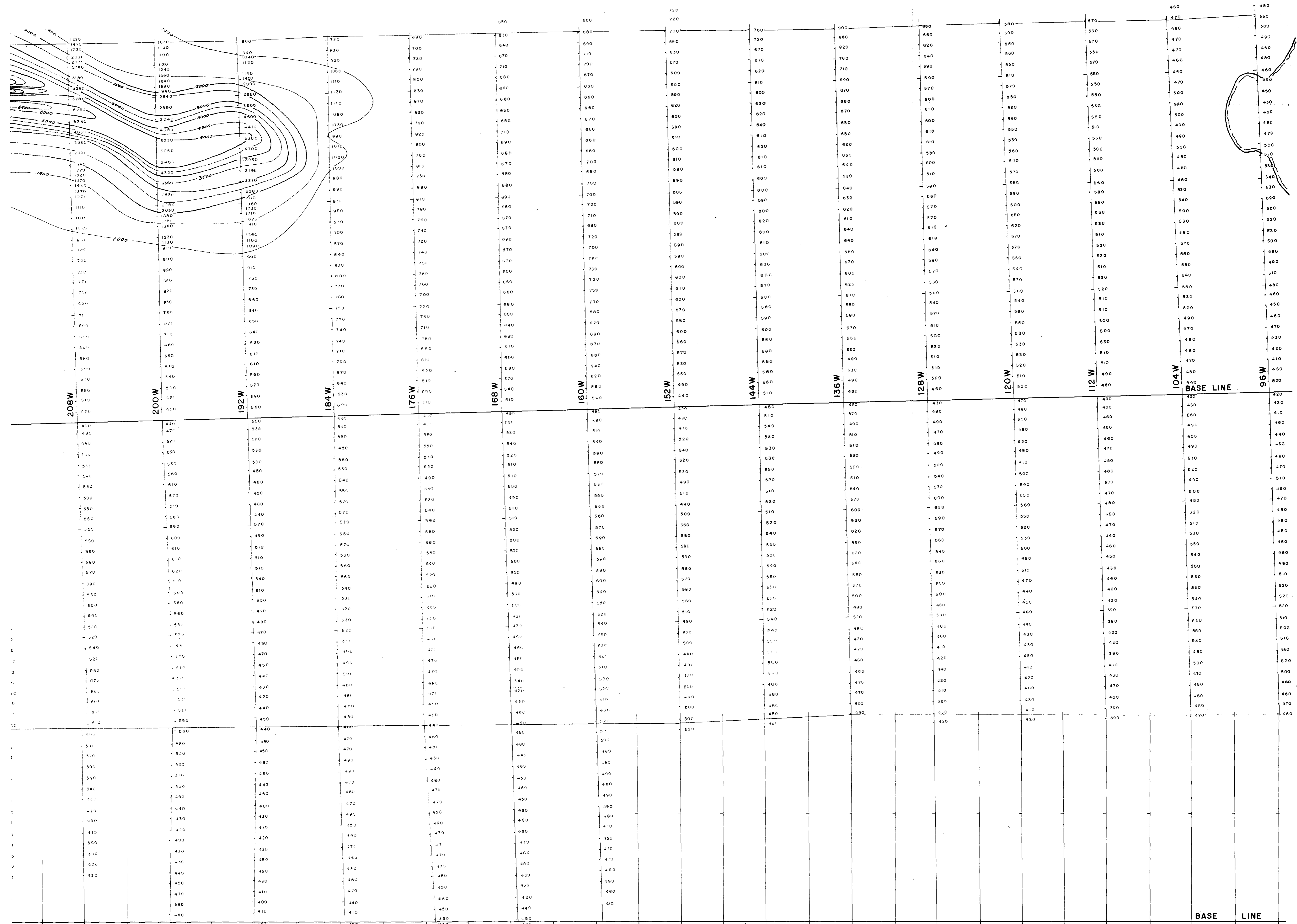
- DRILL HOLE NUMBER AND DIRECTION
- - - WINTER AND TRACTOR ROADS



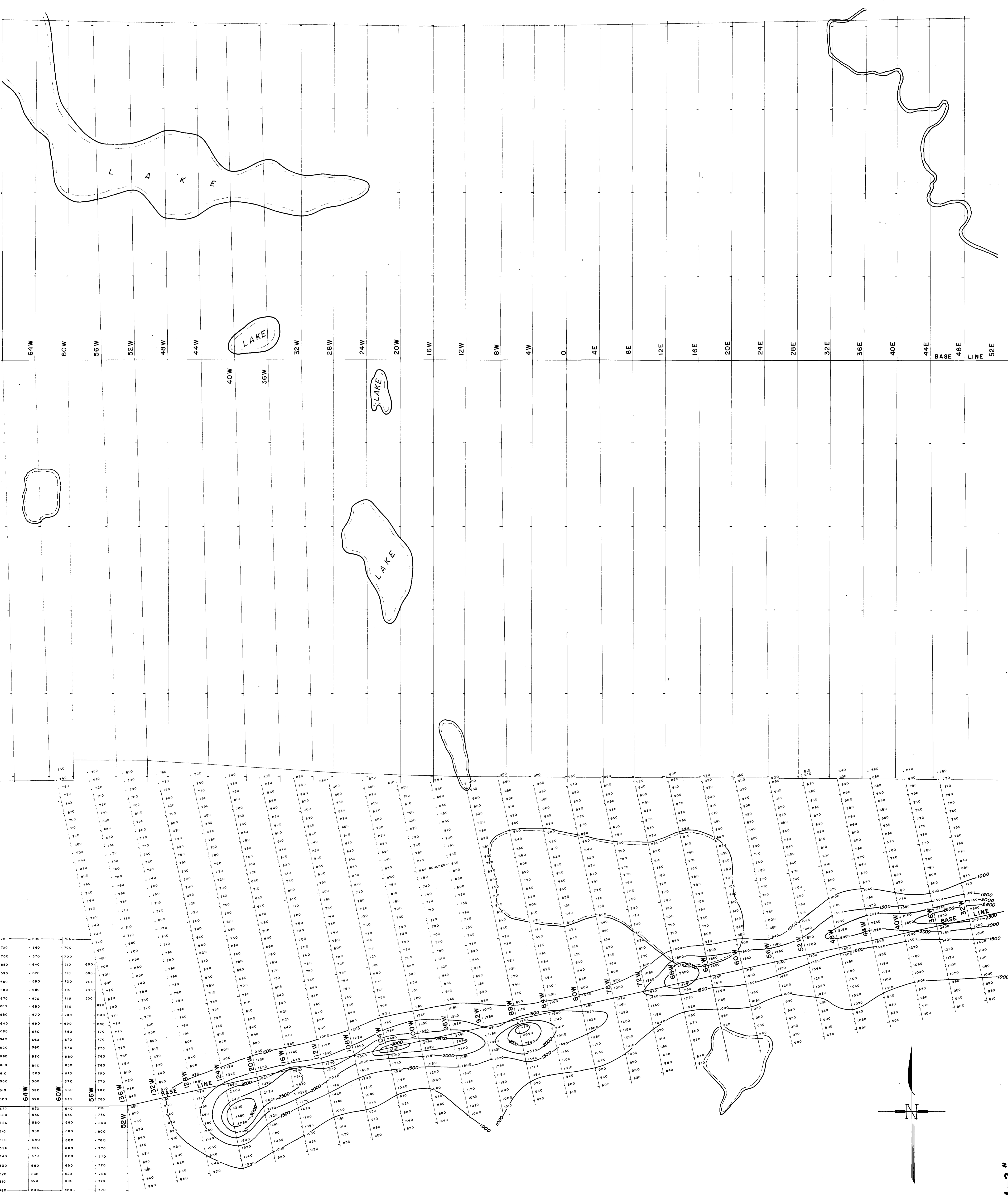
**DIAMOND DRILL HOLE LOCATIONS**  
 EXPLORATION CONCESSION No. 13,302  
 MISTANGO RIVER MINES LTD.  
 ONTARIO

Scale: 1" = 1/2 mile  
 K.V.C. Nov. 62





212 W	208 W	204 W	200 W	196 W	192 W	188 W	184 W	180 W	176 W	172 W	168 W	164 W	160 W	156 W	152 W	148 W	144 W	140 W	136 W	132 W	128 W	124 W	120 W	116 W	112 W	108 W	104 W	100 W	96 W																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
430	435	440	445	450	455	460	465	470	475	480	485	490	495	500	505	510	515	520	525	530	535	540	545	550	555	560	565	570	575	580	585	590	595	600	605	610	615	620	625	630	635	640	645	650	655	660	665	670	675	680	685	690	695	700	705	710	715	720	725	730	735	740	745	750	755	760	765	770	775	780	785	790	795	800	805	810	815	820	825	830	835	840	845	850	855	860	865	870	875	880	885	890	895	900	905	910	915	920	925	930	935	940	945	950	955	960	965	970	975	980	985	990	995	1000	1005	1010	1015	1020	1025	1030	1035	1040	1045	1050	1055	1060	1065	1070	1075	1080	1085	1090	1095	1100	1105	1110	1115	1120	1125	1130	1135	1140	1145	1150	1155	1160	1165	1170	1175	1180	1185	1190	1195	1200	1205	1210	1215	1220	1225	1230	1235	1240	1245	1250	1255	1260	1265	1270	1275	1280	1285	1290	1295	1300	1305	1310	1315	1320	1325	1330	1335	1340	1345	1350	1355	1360	1365	1370	1375	1380	1385	1390	1395	1400	1405	1410	1415	1420	1425	1430	1435	1440	1445	1450	1455	1460	1465	1470	1475	1480	1485	1490	1495	1500	1505	1510	1515	1520	1525	1530	1535	1540	1545	1550	1555	1560	1565	1570	1575	1580	1585	1590	1595	1600	1605	1610	1615	1620	1625	1630	1635	1640	1645	1650	1655	1660	1665	1670	1675	1680	1685	1690	1695	1700	1705	1710	1715	1720	1725	1730	1735	1740	1745	1750	1755	1760	1765	1770	1775	1780	1785	1790	1795	1800	1805	1810	1815	1820	1825	1830	1835	1840	1845	1850	1855	1860	1865	1870	1875	1880	1885	1890	1895	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070	2075	2080	2085	2090	2095	2100	2105	2110	2115	2120	2125	2130	2135	2140	2145	2150	2155	2160	2165	2170	2175	2180	2185	2190	2195	2200	2205	2210	2215	2220	2225	2230	2235	2240	2245	2250	2255	2260	2265	2270	2275	2280	2285	2290	2295	2300	2305	2310	2315	2320	2325	2330	2335	2340	2345	2350	2355	2360	2365	2370	2375	2380	2385	2390	2395	2400	2405	2410	2415	2420	2425	2430	2435	2440	2445	2450	2455	2460	2465	2470	2475	2480	2485	2490	2495	2500	2505	2510	2515	2520	2525	2530	2535	2540	2545	2550	2555	2560	2565	2570	2575	2580	2585	2590	2595	2600	2605	2610	2615	2620	2625	2630	2635	2640	2645	2650	2655	2660	2665	2670	2675	2680	2685	2690	2695	2700	2705	2710	2715	2720	2725	2730	2735	2740	2745	2750	2755	2760	2765	2770	2775	2780	2785	2790	2795	2800	2805	2810	2815	2820	2825	2830	2835	2840	2845	2850	2855	2860	2865	2870	2875	2880	2885	2890	2895	2900	2905	2910	2915	2920	2925	2930	2935	2940	2945	2950	2955	2960	2965	2970	2975	2980	2985	2990	2995	3000	3005	3010	3015	3020	3025	3030	3035	3040	3045	3050	3055	3060	3065	3070	3075	3080	3085	3090	3095	3100	3105	3110	3115	3120	3125	3130	3135	3140	3145	3150	3155	3160	3165	3170	3175	3180	3185	3190	3195	3200	3205	3210	3215	3220	3225	3230	3235	3240	3245	3250	3255	3260	3265	3270	3275	3280	3285	3290	3295	3300	3305	3310	3315	3320	3325	3330	3335	3340	3345	3350	3355	3360	3365	3370	3375	3380	3385	3390	3395	3400	3405	3410	3415	3420	3425	3430	3435	3440	3445	3450	3455	3460	3465	3470	3475	3480	3485	3490	3495	3500	3505	3510	3515	3520	3525	3530	3535	3540	3545	3550	3555	3560	3565	3570	3575	3580	3585	3590	3595	3600	3605	3610	3615	3620	3625	3630	3635	3640	3645	3650	3655	3660	3665	3670	3675	3680	3685	3690	3695	3700	3705	3710	3715	3720	3725	3730	3735	3740	3745	3750	3755	3760	3765	3770	3775	3780	3785	3790	3795	3800	3805	3810	3815	3820	3825	3830	3835	3840	3845	3850	3855	3860	3865	3870	3875	3880	3885	3890	3895	3900	3905	3910	3915	3920	3925	3930	3935	3940	3945	3950	3955	3960	3965	3970	3975	3980	3985	3990	3995	4000	4005	4010	4015	4020	4025	4030	4035	4040	4045	4050	4055	4060	4065	4070	4075	4080	4085	4090	4095	4100	4105	4110	4115	4120	4125	4130	4135	4140	4145	4150	4155	4160	4165	4170	4175	4180	4185	4190	4195	4200	4205	4210	4215	4220	4225	4230	4235	4240	4245	4250	4255	4260	4265	4270	4275	4280	4285	4290	4295	4300	4305	4310	4315	4320	4325	4330	4335	4340	4345	4350	4355	4360	4365	4370	4375	4380	4385	4390	4395	4400	4405	4410	4415	4420	4425	4430	4435	4440	4445	4450	4455	4460	4465	4470	4475	4480	4485	4490	4495	4500	4505	4510	4515	4520	4525	4530	4535	4540	4545	4550	4555	4560	4565	4570	4575	4580	4585	4590	4595	4600	4605	4610	4615	4620	4625	4630	4635	4640	4645	4650	4655	4660	4665	4670	4675	4680	4685	4690	4695	4700	4705	4710	4715	4720	4725	4730	4735	4740	4745	4750	4755	4760	4765	4770	4775	4780	4785	4790	4795	4800	4805	4810	4815	4820	4825	4830	4835	4840	4845	4850	4855	4860	4865	4870	4875	4880	4885	4890	4895	4900	4905	4910	4915	4920	4925	4930	4935	4940	4945	4950	4955	4960	4965	4970	4975	4980	4985	4990	4995	5000	5005	5010	5015	5020	5025	5030	5035	5040	5045	5050	5055	5060	5065	5070	5075	5080	5085	5090	5095	5100	5105	5110	5115	5120	5125	5130	5135	5140	5145	5150	5155	5160	5165	5170	5175	5180	5185	5190	5195	5200	5205	5210	5215	5220	5225	5230	5235	5240	5245	5250	5255	5260	5265	5270	5275	5280	5285	5290	5295	5300	5305	5310	5315	5320	5325	5330	5335	5340	5345	5350	5355	5360	5365	5370	5375	5380	5385	5390	5395	5400	5405	5410	5415	5420	5425	5430	5435	5440	5445	5450	5455	5460	5465	5470	5475	5480	5485	5490	5495	5500	5505	5510	5515	5520	5525	5530	5535	5540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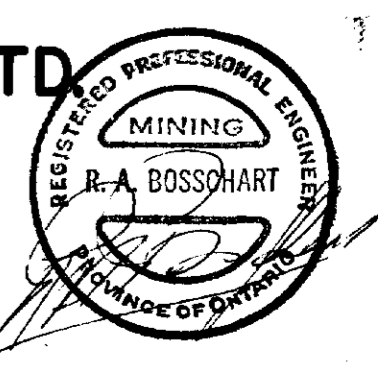
**LEGEND**

- 1800 MAGNETIC VALUES IN GAMMAS
- 500 CONTOUR INTERVAL 500 GAMMAS
- 1000
- 2000

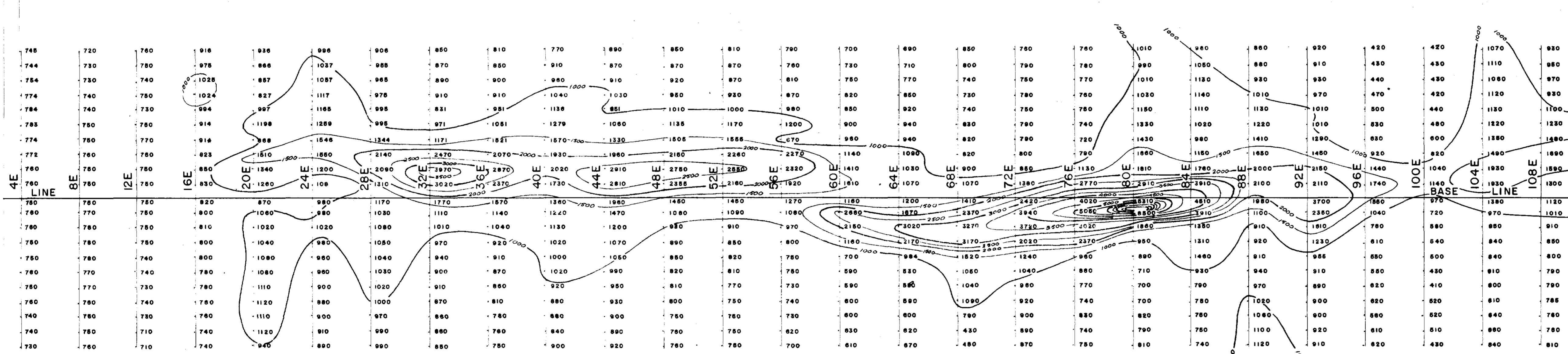
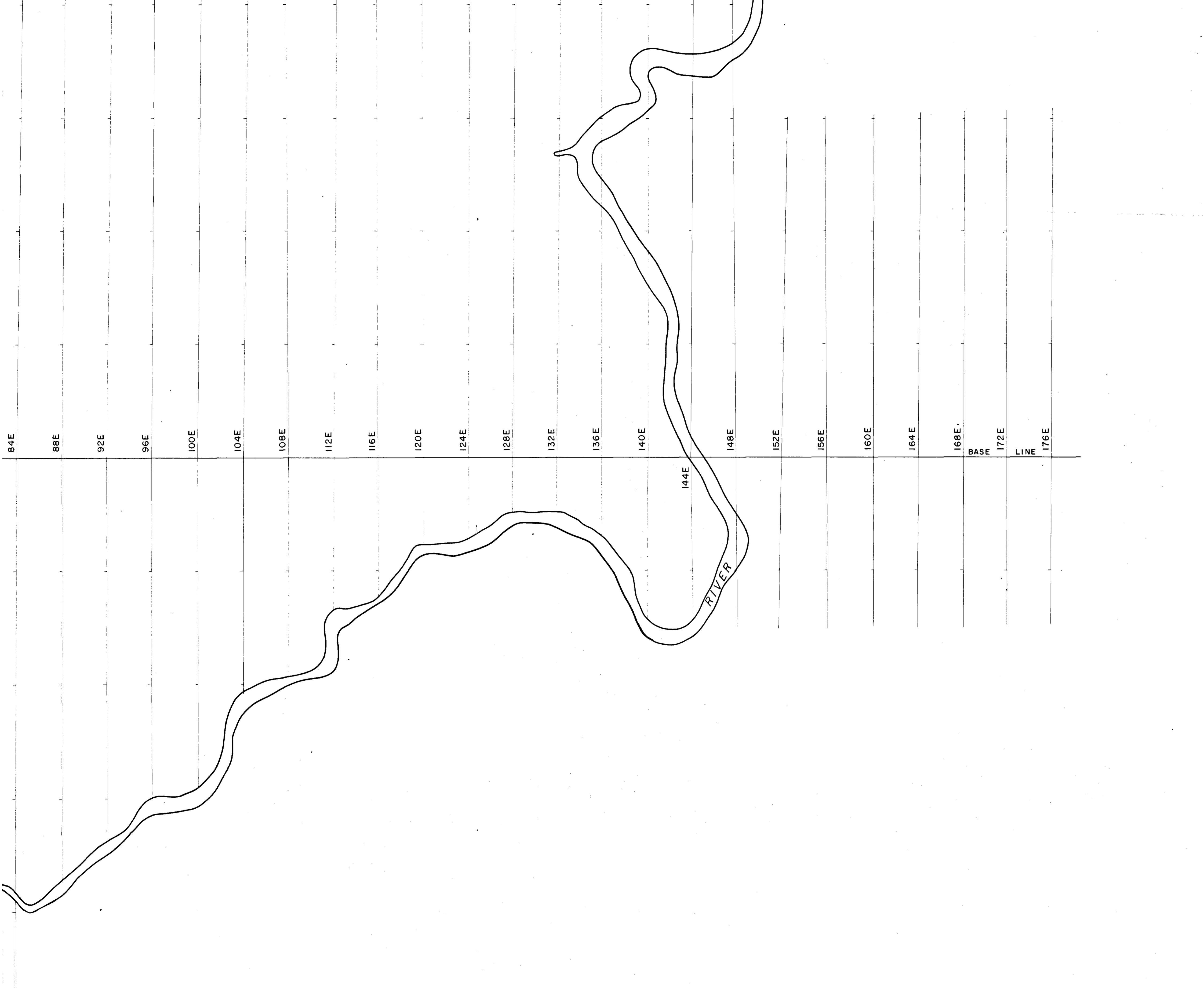
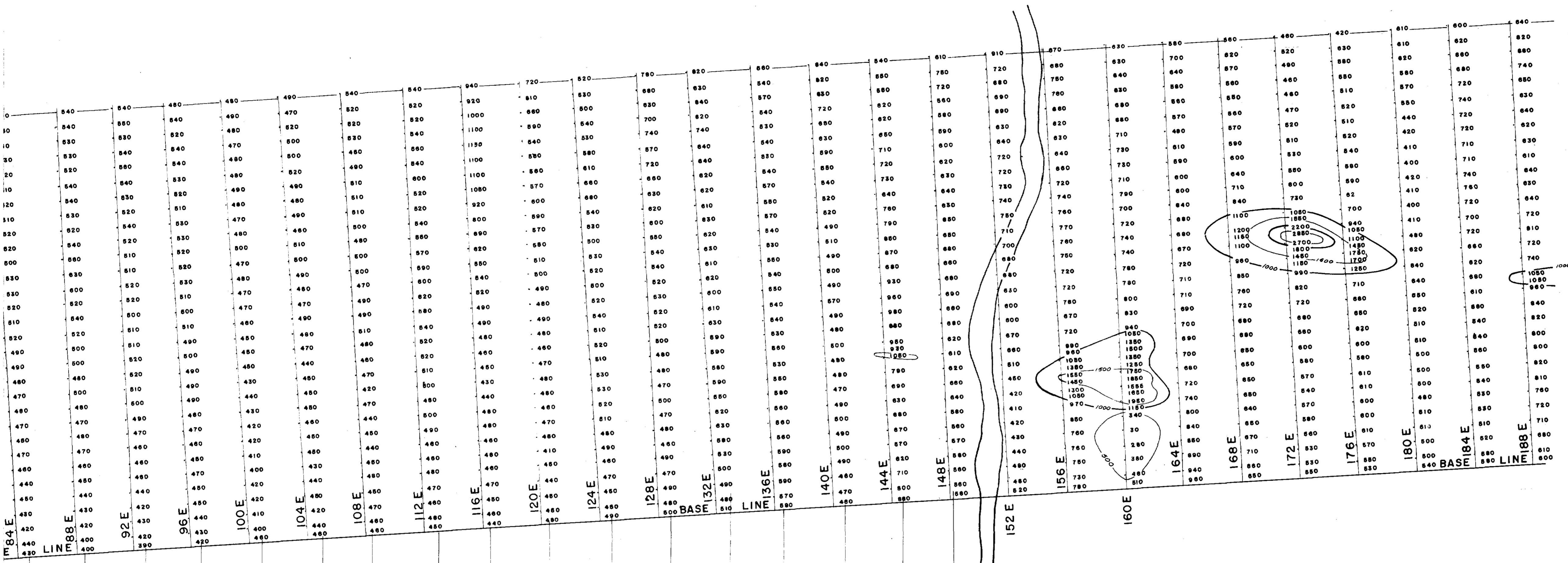
**MISTANGO RIVER MINES, LTD**  
 MOODY & GALNA TOWNSHIPS, ONTARIO  
 PORCUPINE MINING DIVISION

**MAGNETOMETER SURVEY**

SCALE: 1" = 400'  
 SURVEY BY HAROLD O. SEIGEL & ASSOCIATES, LIMITED  
 APRIL 1965



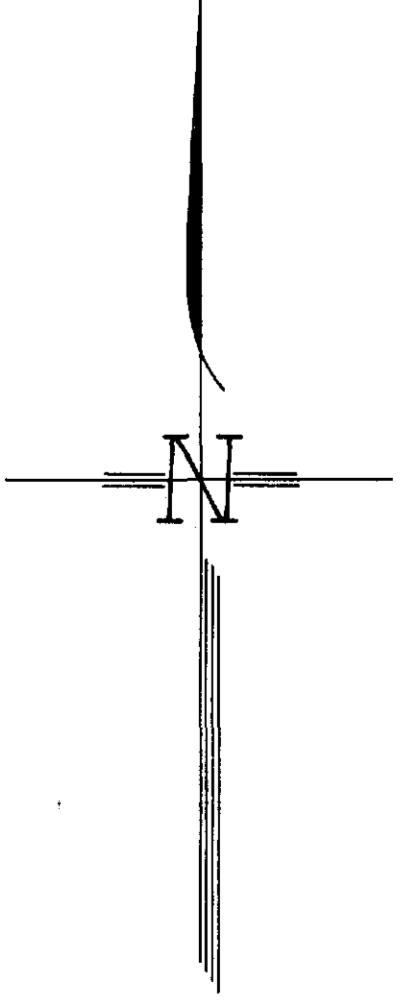
SHEET "M-2"

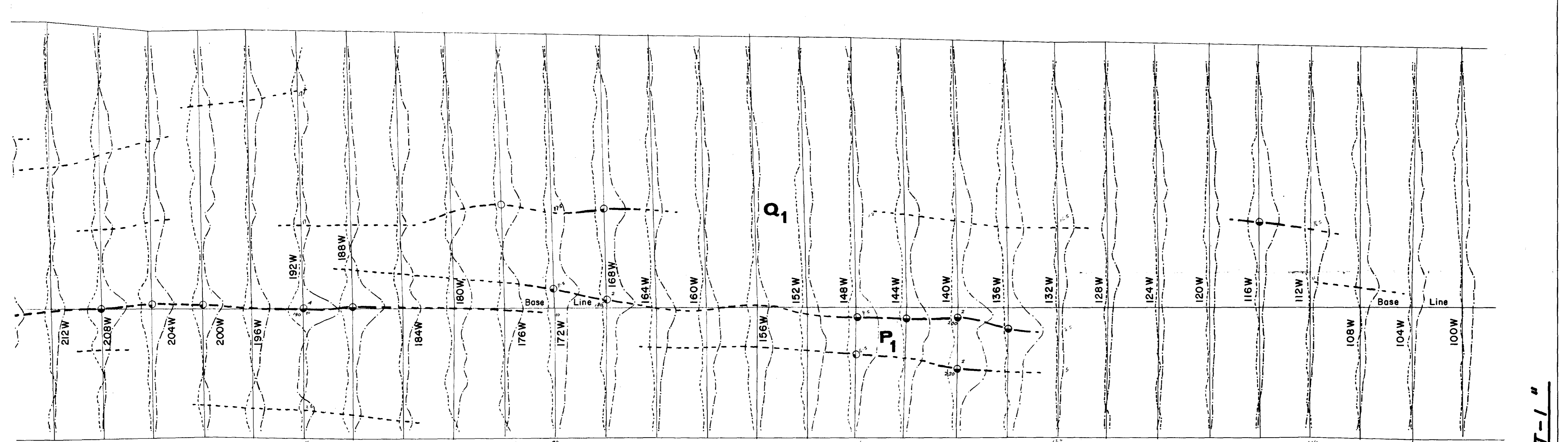


LEGEND :

- 1720 MAGNETIC VALUES IN GAMMAS
- 1000 CONTOUR INTERVAL 500 GAMMAS
- 1500
- 2000
- 2500

MISTANGO RIVER MINES, LTD.  
 GALNA TOWNSHIP, ONTARIO  
 PORCUPINE MINING DIVISION  
**MAGNETOMETER SURVEY**  
 SCALE: 1" = 400'  
 SURVEY BY HAROLD O. SEIGEL & ASSOCIATES, LIMITED.  
 APRIL 1965





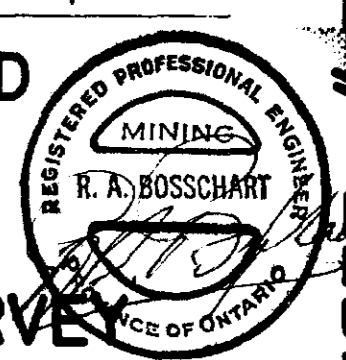
LEGEND: see "T-3"

MISTANGO RIVER MINES, LTD  
 MOODY TOWNSHIP, ONTARIO  
 PORCUPINE MINING DIVISION

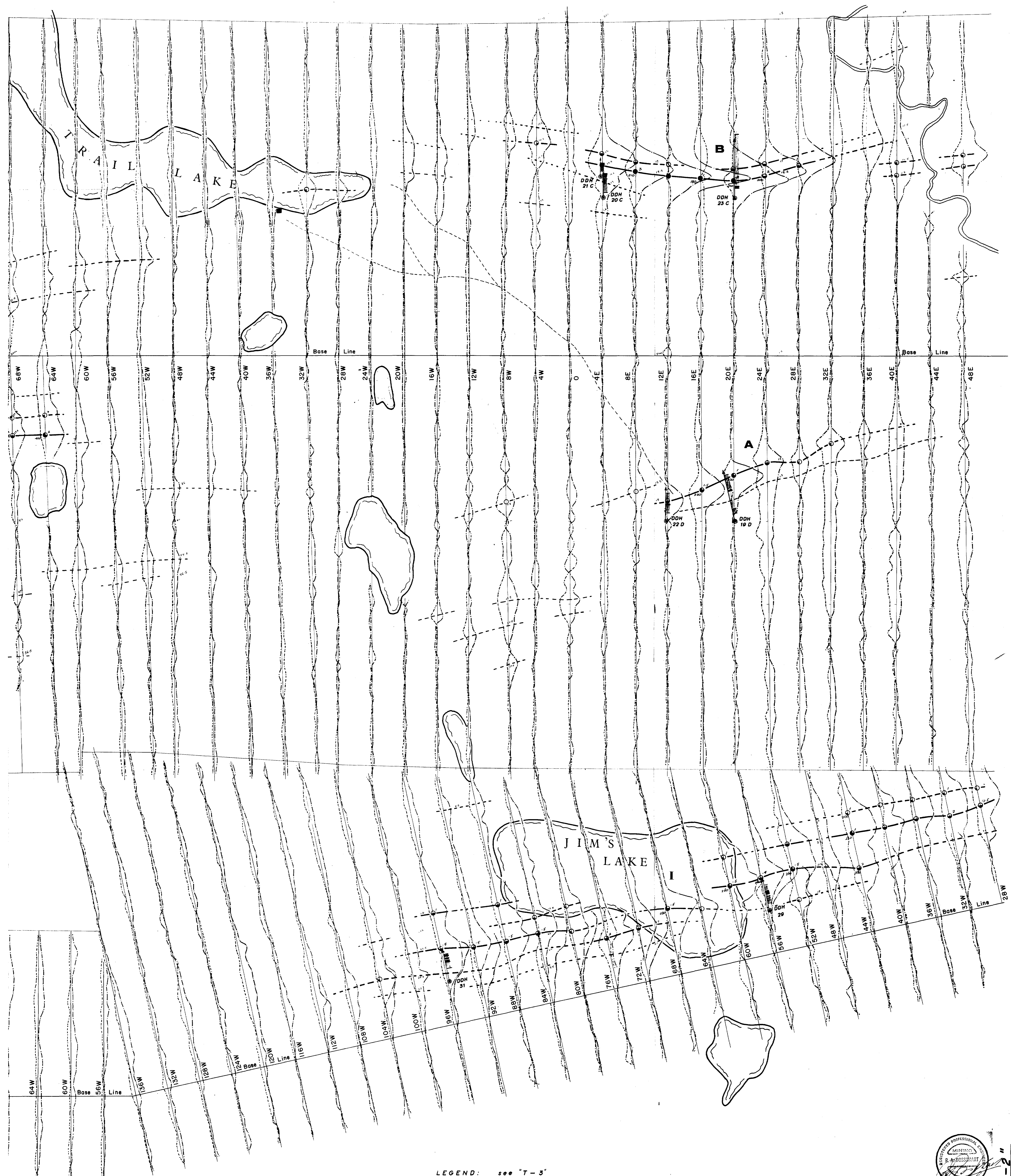
TURAM ELECTROMAGNETIC SURVEY

SCALE: 1" = 400'

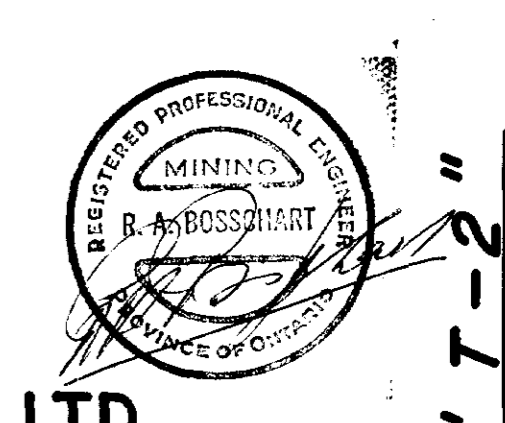
SURVEY BY HAROLD O. SEIGEL & ASSOCIATES, LIMITED  
 APRIL 1968



SHEEX # 7-1



LEGEND: see "T-3"

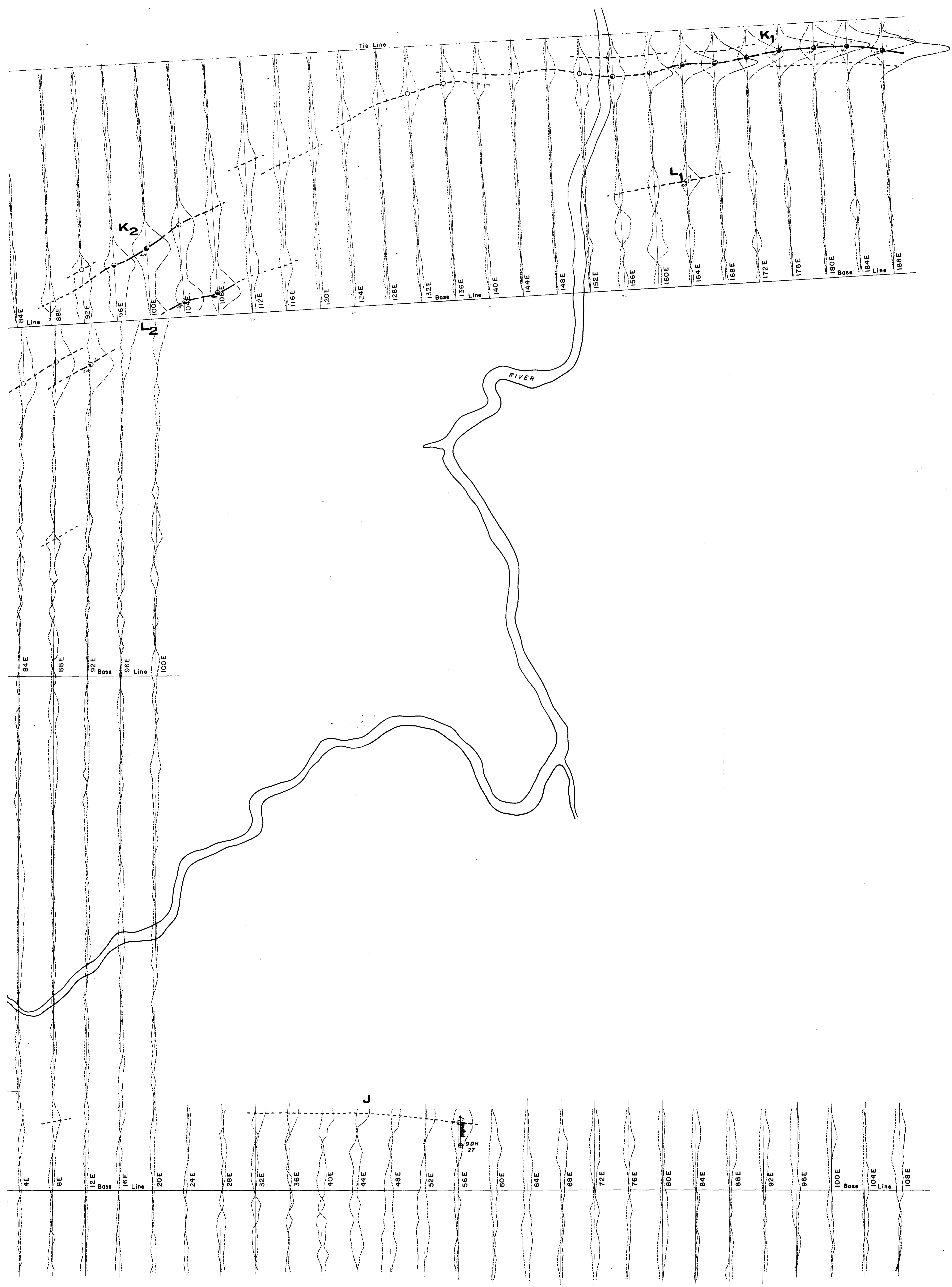


**MISTANGO RIVER MINES, LTD.**  
 MOODY & GALNA TOWNSHIPS, ONTARIO  
 PORCUPINE MINING DIVISION

**TURAM ELECTROMAGNETIC SURVEY**  
 SCALE: 1" = 400'  
 SURVEY BY HAROLD O. SEIGEL & ASSOCIATES, LIMITED  
 APRIL 1968

SHEET "T-2"





**LEGEND :**

F.S. RATIO 80 100 140  
 PHASE DIFF. -20° 0° +20°

EL. CONDUCTOR —○— VALUE (ohmcm/m)  
 —○— DEPTH of CURRENT AXIS (ft)

**MISTANGO RIVER MINES, LTD.**  
 GALNA TOWNSHIP, ONTARIO  
 PORCUPINE MINING DIVISION  
**TURAM ELECTROMAGNETIC SURVEY**  
 SCALE: 1" = 400'  
 SURVEY BY HAROLD O. SEIGEL & ASSOCIATES, LIMITED.  
 APRIL 1968



SHEET "T-3"