

2.761

Geological Survey
Ogden #2 Group

Hollinger Mines Limited



42A06NW0235 2.761 OGDEN

010

Introduction:

In the summer of 1970, a geological survey was conducted over the Ogden #2 Group in Ogden Township. The group consists of thirteen claims numbered:

P 101174-180 incl.; P 217754-757 incl. and
P 218485-486 incl.

Location and Access:

The property is located approximately four miles south of Timmins in east central Ogden Township. A bush road, approximately one quarter mile east of the property, meets the Papakomeka Road which provides access from Timmins. The property is easily accessible under both summer and winter conditions.

Topography:

West of an open swamp, which lies on the eastern boundary of the property, is an outcrop ridge which covers most of the group. The southern portion of the property shows some topographic relief, but there are no outcrops. The vegetation is mainly spruce and poplar with some alder swamps in the far western portion, near the Mountjoy River. Overburden depths are considered to be relatively shallow since the area is mainly outcrop.

Previous Work:

The first compilation of Ogden Township was released through the Ontario Department of Mines in 1957, by B. M. Lea. Later, more detailed mapping by H. D. Carlson resulted in a second publication by the ODM in 1966.

Carlson's mapping showed that the property was underlain by interbedded andesites, carbonate-chlorite schists and iron formations, all intruded by a younger serpentinite body.

JANUARY, 1972

Southwest of the property, E. O. Wise drilled one hole into the talc-chlorite schist. No other work is recorded on these two claims.

Part of what is presently the Hollinger #1 group in Ogden was previously held by Waser Porcupine Mines Limited. In 1946-47, seven holes were drilled to cross section the property in a north-south direction. Neither assays nor conductive material were recorded in the drilling results. Rocks encountered include acid and andesitic flows and pyroclastics with some later serpentinite. The volcanics are often sheared and altered to chlorite schists, talc schists and carbonatized lavas.

Later, the Waser property was acquired by Brabar Mines Limited in 1965. Numerous local magnetic anomalies were outlined; however, electromagnetic (Ronka MK III) responses were rather poor. The group was presumed to be underlain by andesite with the southwest portion simply identified as porphyry.

Still later work by Hollinger (Ogden #1 group), indicates that some of the electromagnetic responses are due to graphite in a zone of fragmental dacites. The magnetic features encountered are attributed to serpentinite.

To the north of the Ogden #2 group lies the sixteen claim Kenilworth property which extends eastward into Deloro Township. The near east-west trending Destor-Porcupine fault traverses the central portion of the group. To the north of the fault two ore zones are outlined although data to the south of the fault is sketchy. Of the two gold zones outlined, one is found in a chlorite schist and the second is confined to a zone of green carbonate. A mass of quartz porphyry is associated with the second zone.

Magnetic surveys have previously been filed by Hollinger on the Ogden #2 group. Most of the results can be directly related to surface geology.

Personnel:

The field survey was performed by D. R. Alexander assisted by B. M. Laine. Final drafting of the plans was done by W. B. Caughell and interpretation by the author. All are employed with Hollinger Mines Limited.

General Geology:

The surface geology consists of two broad formations:

2. Basic-ultrabasic complex of Early Algomian age.
1. Interbedded sequence of acid to intermediate volcanics and iron formation - all of probable Keewatin age.

The rhyolitic volcanics can best be described as layered lavas. Although there are occasional fragments, they are too rare to indicate the existence of a tuffaceous unit. These lavas are greenish grey in colour, weathering whitish to rusty due to the presence of ankerite. The rhyolite contains numerous small quartz phenocrysts in a matrix that is highly carbonatized. There are two main units of rhyolite, each containing an intervening iron formation which suggests that there are at least four periods of extrusion.

The andesitic volcanics are further subdivided into two individual flows on the property. The older flow, in the center of the grid, is represented by a thin band of medium to coarse grained andesite which becomes very massive near the contact with the rhyolite. The mineralogy of the andesite consists of a few quartz and feldspar phenocrysts in a matrix that contains chlorite, carbonate and minor amphibole. The andesite is greenish in colour, weathering grey-brown to rusty.

The younger andesitic flow is located in the northwest corner of the property, in contact with an underlying rhyolite and an overlying iron formation. The contact with the rhyolite is well defined, and the andesite is very siliceous at that point. This flow is much more massive than the older andesitic unit, with only local sections where quartz and feldspar phenocrysts can be depicted. There is some minor copper staining locally in the thicker flow.

The iron formation units on the property are usually characterized by a high magnetic attraction. The magnetic survey, however, shows that these units are rather discontinuous, any may only be traced over a short strike length. Mineralogically, they consist of alternating quartz and magnetite rich bands. The quartz is occasionally reddish jasper but usually it is whitish in colour, stained rusty. Locally magnetite is converted to hematite and

pyrite, decreasing the normally high magnetic attraction and possibly accounting for the resulting discontinuous magnetic trends. Several pits into the iron formation may be found in the area, often with an overlying gossan. The gossan is a semiconsolidated assemblage of quartz pebbles or fragments, covered with rust and often sprinkled with pyrite.

The basic-ultrabasic complex may be subdivided into four individual rock types including dunite, serpentinite, peridotite and gabbro.

The dunitic composition is confined to the easternmost exposures of the ultrabasics. Both outcrops are almost completely olivine with accessory magnetite and a few small stringers of magnesite.

The serpentinite is found on the southwest portion of the large ultrabasic outcrop. This exposure is very local and consists mainly of soft blue-black serpentine.

The main body of ultramafics is peridotite, composed of olivine, pyroxene and magnetite with occasional small stringers of chrysotile. The rock is dark green to black in colour weathering orange.

The gabbroic member is only exposed in a small area just north of the ultrabasic outcrops and is believed to be a differentiate of the main ultramafic body. The high calcic feldspar content of the gabbro distinguishes it from the ultramafic rocks. The gabbro is predominately white feldspar crystals in a fine grained greenish matrix. Megascopically this rock appears completely non-magnetic.

Structure:

Structurally, the group is presumed to lie on the northerly limb of an easterly trending anticline. The fold is interpreted mainly through accessory information available on the Ontario Department of Mines preliminary map of Ogden Township. The axial plane of the fold appears to lie near the southern part of the group. The ultrabasic intrusions may, in part, be related to this phase of folding.

Conclusions:

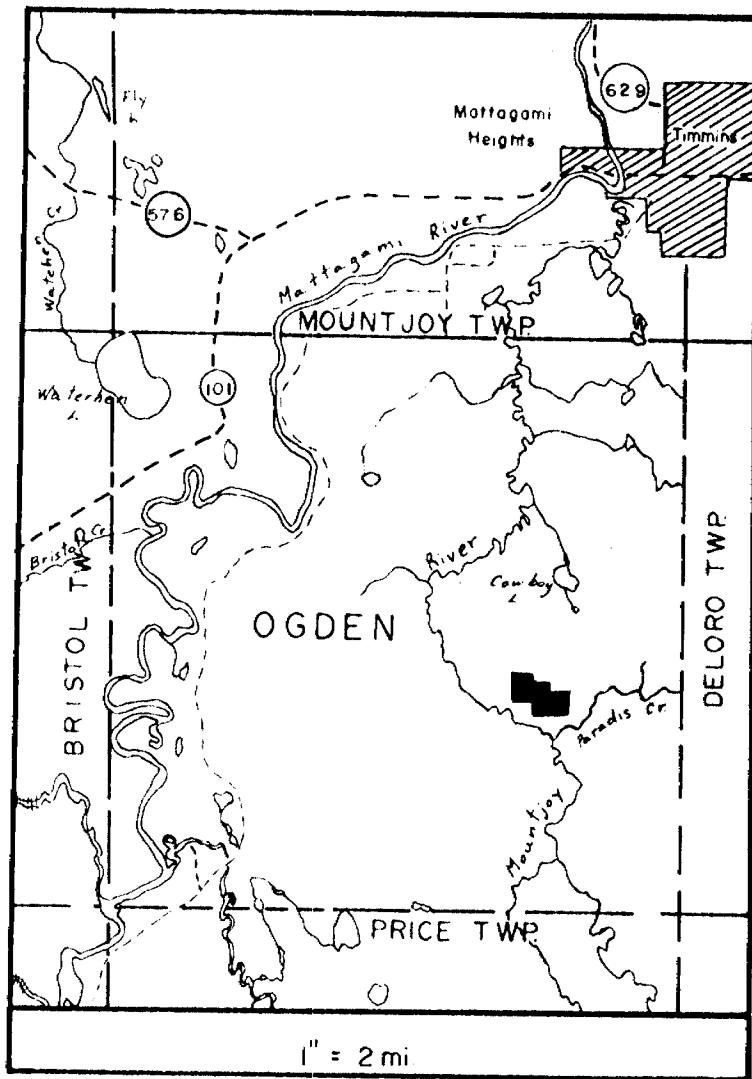
In areas of lack of exposure geology is interpreted through magnetic associations. This provides the simplest picture of the geology of the group.

To date electromagnetic, magnetic and geological surveys have been conducted over the property, with negative results. One test drill hole, however, may be warranted in the ultrabasic complex to test for disseminated mineralization.

Bibliography:

1. Ontario Department of Mines Preliminary Map P.341;
"Ogden Township", 1" = $\frac{1}{4}$ mile; 1967.
...H. D. Carlson.
2. Assessment files - resident geologist's office.

Dale R. Alexander
HOLLINGER MINES LIMITED
TIMMINS, ONTARIO



Em-16 Survey
Ogden #2 Group

Hollinger Mines Limited



42A06NW0235 2.761 OGDEN

020

Introduction:

On November 21 and 22, 1970, an electromagnetic survey was conducted over the Ogden #2 Group in Ogden Township. An EM-16, electromagnetic receiver was used as a reconnaissance unit, to rapidly outline zones of ground conductivity.

The group consists of thirteen claims numbered:

P-101174-180 incl.; P-217754-757 incl.;

P-218485-486 incl.

Location and Access:

The property is located approximately four miles south of Timmins, in east central Ogden Township. A bush road, approximately one quarter mile east of the property, meets the Papakomeka Road, providing access from Timmins. The property is easily accessible under both summer and winter conditions.

Topography:

An outcrop ridge covers most of the central portion of the group terminated on the east and west by swampy ground. The southern portion of the group shows some topographic relief but there are no outcrops. The vegetation is mainly spruce and poplar with some alder swamps in the western portion, near the Mountjoy River. Overburden depths are considered to be relatively shallow since the area is mainly outcrop.

Geology:

The property is underlain by Keewatin lavas and iron formations, intruded by a younger gabbro-peridotite complex.

The Keewatin lavas consist of interbedded units of rhyolite and andesite which trend in an easterly direction.

JANUARY, 1972

Previous Work:

Southwest of the property, E.O. Wise drilled one hole into a talc-chlorite schist. No other work is recorded on these two claims.

Part of what is presently the Hollinger #1 group in Ogden was previously held by Wasu Porcupine Mines Limited. In 1946-47, seven holes were drilled to cross section the property in a north-south direction. Neither assays, nor conductive material were recorded in the drilling results. Rocks encountered include acid and andesitic flows and pyroclastics with some younger serpentinite. The volcanics are often sheared and altered to chlorite schists, talc schists and carbonatized lavas.

Later, the Wasu property was acquired by Brabar Mines Limited in 1965. Numerous local magnetic anomalies were outlined; however, electromagnetic (Ronka MK III) responses were poor. The group was presumed to be underlain by andesite with the southwest portion simply identified as porphyry.

Still later work by Hollinger (Ogden #1 Group), indicates that some of the electromagnetic responses are due to graphite in a zone of fragmental dacites. The magnetic features encountered were attributed to serpentinite.

To the north of the Ogden #2 Group lies the sixteen claim Kenilworth property which extends eastward into Deloro Township. The near east-west trending Destor-Porcupine fault traverses the central portion of the group. To the north of the fault two ore zones are outlined, although data to the south of the fault are sketchy. Of the two gold zones outlined, one is found in a chlorite schist and the second is confined to a zone of green carbonate. A mass of quartz-porphyry is associated with the second zone.

Magnetic and electromagnetic surveys have previously been filed by Hollinger on this Ogden #2 Group. Most of the results of the magnetic survey can be directly correlated with surface geology. The electromagnetic survey showed negative results.

Personnel:

The field survey was performed by R.C. Humphrey and P.M. Daly on the dates previously disclosed. Drafting of the plans was done by W.B. Caughell and interpretation by the author. All are employed by Hollinger Mines Limited.

Instruments Used:

The survey was performed using two EM-16 units (serial numbers 36 and 48), manufactured by Geonics Limited of Toronto.

For further information see accompanying brief on the instrument.

Survey Method:

All of the instrument readings were taken along cut and measured picket lines spaced 400 feet apart and striking at 10 degrees. Individual readings were taken at 100-foot intervals.

Since the predominating structure is east-west, NAA, in Cutler, Maine was used as the transmitting station. NAA bears approximately 100 degrees from the survey area. Because the transmitter is fixed it is necessary to maintain a consistent orientation with the transmitter by facing north at every station.

The datum is plotted with the negative readings towards the transmitting station. Thus, a true cross over is noted by a change from positive to negative in the inphase component, while proceeding north.

Results of the Survey:

The survey depicts 47 crossovers, out of which 14 individual anomalies are interpreted. Unfortunately the resulting map is more indicative of topographic relief than ground conductivity. Twelve of the fourteen anomalies found are directly attributed to the slope of the bedrock-overburden interface.

Only two anomalies, "A" and "B" may warrant further discussion. Both anomalies have poor crossovers and erratic quadrature responses. "A" is not duplicated by the horizontal

loop survey and is, therefore, discarded as a slope conductor. "B" is coincident with a zone of magnetite-bearing iron formation. The horizontal loop survey over this zone indicates the presence of conductivity, through the anomalous inphase readings. These one-reading anomalies, however, generally occur when the receiver coil is set up over a very magnetic body, in this case magnetite bearing iron formation.

Conclusions:

To date, magnetic, electromagnetic and geological surveys have been conducted over the property with negative results. Other than testing the ultrabasic complex for possible disseminated mineralization, no further exploration appears to be warranted.

Bibliography:

Assessment files - Resident Geologist's Office.

Dale E. Alexander
HOLLINGER MINES LIMITED
TIMMINS, ONTARIO

TYPE OF INSTRUMENT USED - EM-16

The survey was performed using an EM-16 (electromagnetometer) receiver. The instrument has two receiving coils built into it (one coil has normally vertical axis and the other has normally horizontal axis). The signal from the vertical axis coil is read on an "in phase" inclinometer and the signal from the horizontal axis coil is read from a "quadrature" dial. The range of measurements are $\pm 150\%$ on the "in phase" inclinometer and $\pm 40\%$ on the "quadrature" dial.

Principle of Operation

The EM-16 uses very low frequency transmitting stations operating for communication with submarines for the transmitted signal. These V.L.F. stations have a vertical antenna which creates a concentric horizontal magnetic field around them. When these magnetic fields meet conductive bodies, there are secondary fields set up around these bodies. The EM-16 measures the vertical component of these secondary fields ("in phase" measures the vertical real component and the "quadrature" measures the vertical component shifted through 90°).

Three transmitting stations are used in performing surveys in central Canada. These stations are NAA Cutler, Maine, NPG Seattle, Washington, and NSS Annapolis, Maryland, with frequencies of 17.8 kc, 18.6 kc and 21.4 kc respectfully.

The station selected should be the station whose direction is parallel to the strike of geological structure in the area being surveyed.

The station used in this survey was NAA

Operation

When the selection of the station to be used in a survey is made the proper selector unit is plugged in and the instrument is turned until the signal is minimum (this will occur when the instrument is pointing towards the station) and then the instrument is turned 90° (instrument is now oriented along the lines of the primary magnetic field).

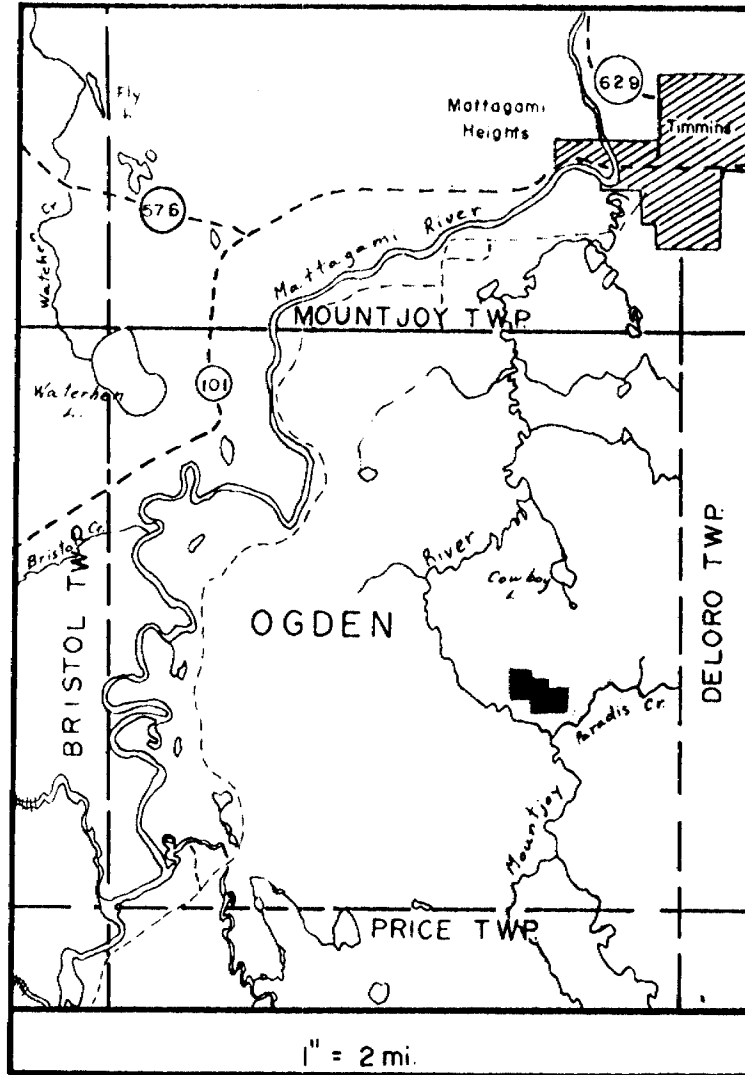
To take a reading the instrument is swung back and forth in a vertical plane to obtain minimum signal (sound) intensity in the earphone. When this position is obtained the "quadrature" dial is adjusted to obtain the minimum signal strength (null point). The readings on the inclinometer and the "quadrature" dial are recorded. Readings are normally taken at 100'

stations with intermediate readings in conductive areas. The readings should always be taken with the instrument oriented in the same direction for one survey.

Interpretation

A conductor occurs when a cross-over from positive in phase to negative in phase occurs (or when in phase increases above background to a maximum and decreases below background to a minimum). The instrument is so constructed that in general the lower end of the vertical axis coil will point towards conductor. The axis of a conductor occurs at a point half way between the maximum and minimum points on the in phase measured along the profile line. The depth from ground surface to a point close to the upper edge of the conductive body is determined by measuring the horizontal distance between the maximum and minimum point on the in phase.

The quadrature profile is used in determining the characteristics of the conductive body. A quadrature profile which follows the in phase profile (relatively) indicates a poor conductor. A quadrature profile which follows the in phase profile with a small change in absolute values indicates a good conductor. A quadrature component which shows a reverse polarity indicates conductive overburden on top of a deeper (better) conductor.





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

Type of Survey Geophysical E.M. Survey
Township or Area Ogden #2 Group, Ogden Township
Claim holder(s) Hollinger Mines Limited
Author of Report Dale R. Alexander
Address c/o Hollinger Mines Ltd., Timmins, Ont.
Covering Dates of Survey November 21, 22, 1970.
(linecutting to office)
Total Miles of Line cut _____

MINING CLAIMS TRAVERSED	
List numerically	
(prefix)	(number)
P.	101174
	101175
	101176
	101177
	101178
	101179
	101180
	217754
	217755
	217756
	217757
	218485
	218486
TOTAL CLAIMS <u>13</u>	

If space insufficient, attach list

<u>SPECIAL PROVISIONS</u> <u>CREDITS REQUESTED</u>		DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	Geophysical	
	-Electromagnetic	<u>20</u>
	-Magnetometer	
	-Radiometric	
	-Other	
ENTER 20 days for each additional survey using same grid.	Geological	<u>20</u>
	Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)
DATE: Feb. 14/72 SIGNATURE: Dale R. Alexander
Author of Report

OFFICE USE ONLY

PROJECTS SECTION
Res. Geol. _____ Qualifications _____
Previous Surveys L.D.
Checked by _____ date _____
GEOLOGICAL BRANCH
Approved by _____ date _____
GEOLOGICAL BRANCH
Approved by _____ date _____

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations 604 Number of Readings 604
Station interval 100 ft.
Line spacing 400 ft.
Profile scale or Contour intervals _____
(specify for each type of survey)

MAGNETIC

Instrument ~~EM 16 (VLF) Serial No. 48 and 36~~
Accuracy - Scale constant _____
Diurnal correction method _____
Base station location _____

ELECTROMAGNETIC

Instrument EM 16 (VLF) Serial No. 48 and 36
Coil configuration Station used - Cutler, Maine, U.S.A.
Coil separation _____
Accuracy see report
Method: Fixed transmitter Shoot back In line Parallel line
Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____
Scale constant _____
Corrections made _____
Base station value and location _____

Elevation accuracy _____

INDUCED POLARIZATION - RESISTIVITY

Instrument _____
Time domain _____ Frequency domain _____
Frequency _____ Range _____
Power _____
Electrode array _____
Electrode spacing _____
Type of electrode _____

**GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL
TECHNICAL DATA STATEMENT**

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

Type of Survey Geological
 Township or Area Ogden #2 Group, Ogden Township
 Claim holder(s) Hollinger Mines Limited
Box 320, Timmins, Ontario
 Author of Report D. R. Alexander
 Address c/o Hollinger Mines Limited
 Covering Dates of Survey July 6-16, 1970
 (linecutting to office)
 Total Miles of Line cut _____

MINING CLAIMS TRAVERSED	
List numerically	
(prefix)	(number)
P-	101174
	101175
	101176
	101177
	101178
	101179
	101180
	217754
	217755
	217757
	218485
	218486
	217756
TOTAL CLAIMS <u>13</u>	

If space insufficient, attach list

<u>SPECIAL PROVISIONS</u> <u>CREDITS REQUESTED</u>	Geophysical	DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	-Electromagnetic _____	
	-Magnetometer _____	
	-Radiometric _____	
	-Other _____	
ENTER 20 days for each additional survey using same grid.	Geological _____	<u>20</u>
	Geochemical _____	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
 Magnetometer _____ Electromagnetic _____ Radiometric _____
 (enter days per claim)
 DATE: Feb. 14/72 SIGNATURE: Dave R. Alexander
 Author of Report

OFFICE USE ONLY

PROJECTS SECTION
 Res. Geol. _____ Qualifications _____
 Previous Surveys L.D.

 Checked by _____ date _____

GEOLOGICAL BRANCH _____

 Approved by _____ date _____

GEOLOGICAL BRANCH _____

 Approved by _____ date _____

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations _____ Number of Readings _____

Station interval _____

Line spacing _____

Profile scale or Contour intervals _____
(specify for each type of survey)

MAGNETIC

Instrument _____

Accuracy - Scale constant _____

Diurnal correction method _____

Base station location _____

ELECTROMAGNETIC

Instrument _____

Coil configuration _____

Coil separation _____

Accuracy _____

Method: Fixed transmitter Shoot back In line Parallel line

Frequency _____
(specify V.L.F. station)

Parameters measured _____

GRAVITY

Instrument _____

Scale constant _____

Corrections made _____

Base station value and location _____

Elevation accuracy _____

INDUCED POLARIZATION -- RESISTIVITY

Instrument _____

Time domain _____ Frequency domain _____

Frequency _____ Range _____

Power _____

Electrode array _____

Electrode spacing _____

Type of electrode _____

27

AREA CODE - 705
TELE 267-1171



DEPARTMENT OF MINES AND NORTHERN AFFAIRS

MINING LANDS BRANCH
OFFICE OF THE MINING RECORDER

60 Wilson Avenue,
Timmins, Ontario,
January 6, 1972.

Fred W. Matthews,
Supervisor, Projects Section,
Ontario Department of Mines,
Whitney Block,
Parliament Buildings, Toronto.

NOTIFICATION OF RECORDING
OF ASSESSMENT WORK CREDITS

Date of Recording of Work January 6, 1972
Recorded Holder Hollinger Mines Limited,
P. O. Box 320,
Timmins, Ontario
(address)
Township or Area Ogden Township

Type of Survey and number of Assessment Days Credits per claim
GEOPHYSICAL Airborne <input type="checkbox"/> Ground <input checked="" type="checkbox"/>
Magnetometer days
Electromagnetic 20 days
Radiometric days
..... days
GEOLOGICAL 20 days
GEOCHEMICAL days
SECTION 86 (18) days

Mining Claims
P-101174-101180 incl.,
P-217754-217757 incl.,
P-218485-218486

NOTICE TO RECORDED HOLDER

- Survey reports and maps in duplicate must be submitted to the Projects Section, Toronto within 60 days from the date of recording of this work.
- Reports and maps are being forwarded to Projects Section with this letter.

.....
Mining Recorder.
c.c.
Hollinger Mines Limited

AREA CODE - 705
TELEPHONE - 267-1171



ONTARIO

DEPARTMENT OF MINES AND NORTHERN AFFAIRS

MINING LANDS BRANCH
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Type of Survey and number of Assessment Days Credits per claim
GEOPHYSICAL Airborne <input type="checkbox"/> Ground <input checked="" type="checkbox"/>
Magnetometer days
Electromagnetic 20 days
Radiometric days
..... days
GEOLOGICAL 20 days
GEOCHEMICAL days
SECTION 86 (18) days

Mining Claims
P-101174-101180 incl.,
P-217754-217757 incl.,
P-218485-218486

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- Reports and maps are being forwarded to Projects Section with this letter.

.....
Mining Recorder.

c.c.
Hollinger Mines Limited

MOUNTJOY TWP M-302

THE TOWNSHIP OF

OGDEN

Claim Map
DISTRICT OF COCHRANE

PORCUPINE
MINING DIVISION

SCALE: 1-INCH = 20 CHAINS

LEGEND

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

NOTES

- 400' Surface Rights Reservation around all lakes and rivers
- L.O. 6613 - Booming Grounds - covers the westerly half of the bed of the Mattagami River flowing through this township. File: 73543.

BRISTOL TWP M-264

DELORO TWP M-272

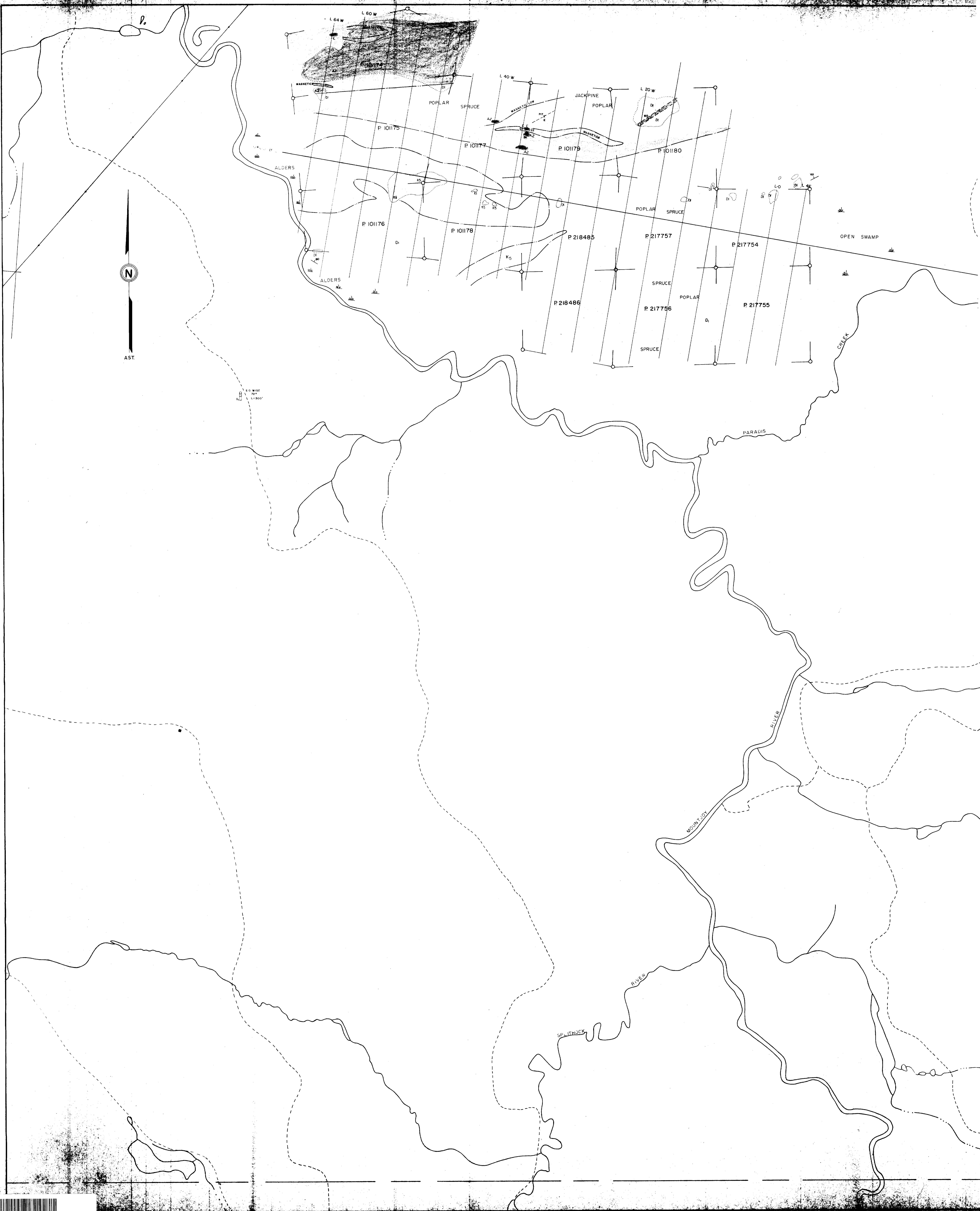
PRICE TWP M-307

PLAN NO. M-305

ONTARIO
DEPARTMENT OF MINES
AND NORTHERN AFFAIRS

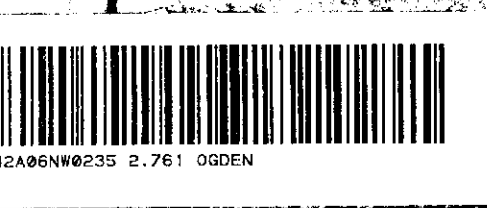
2.761

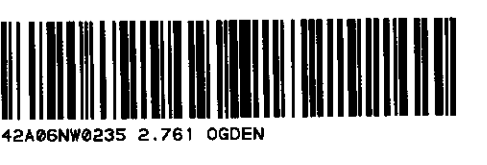
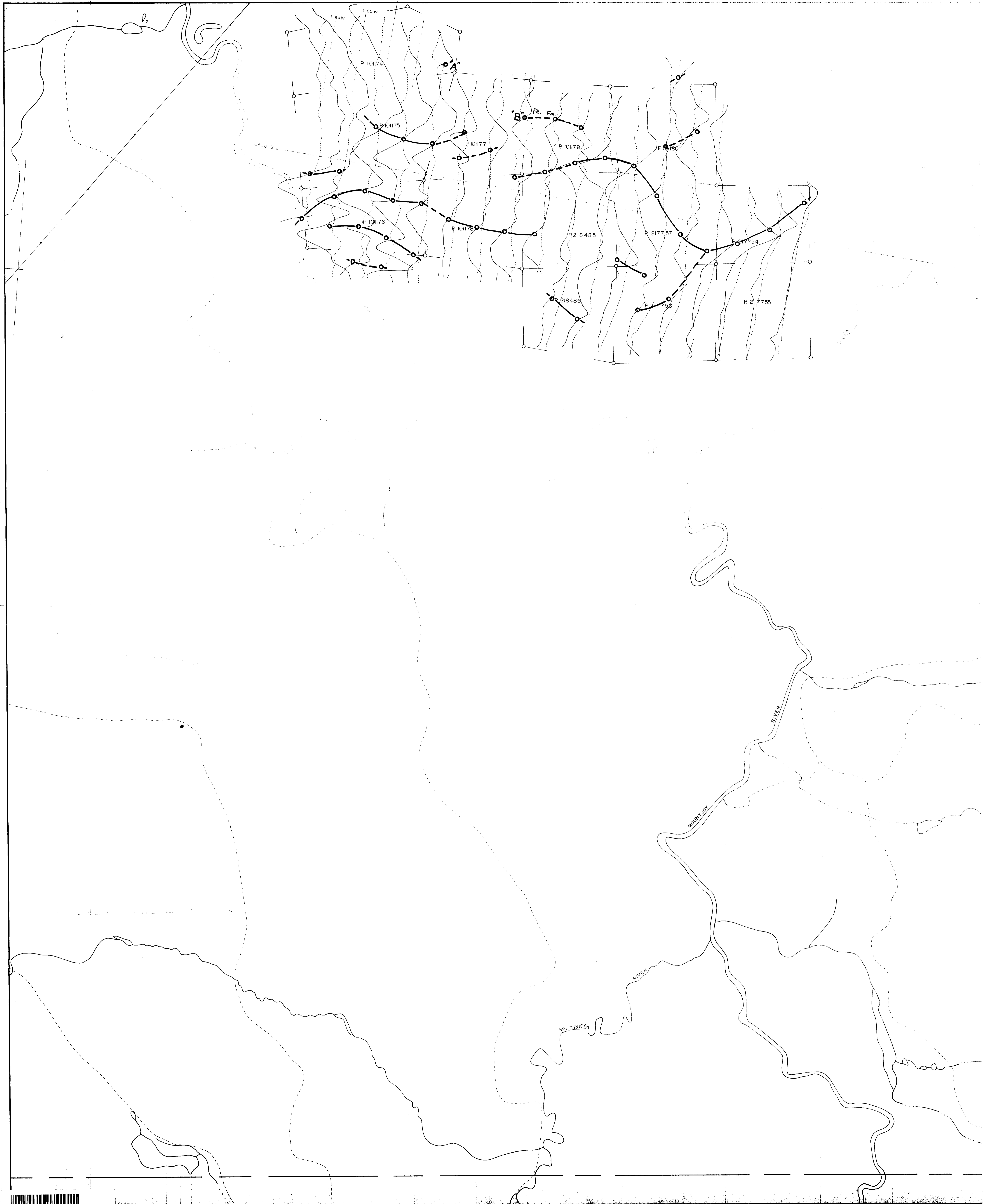


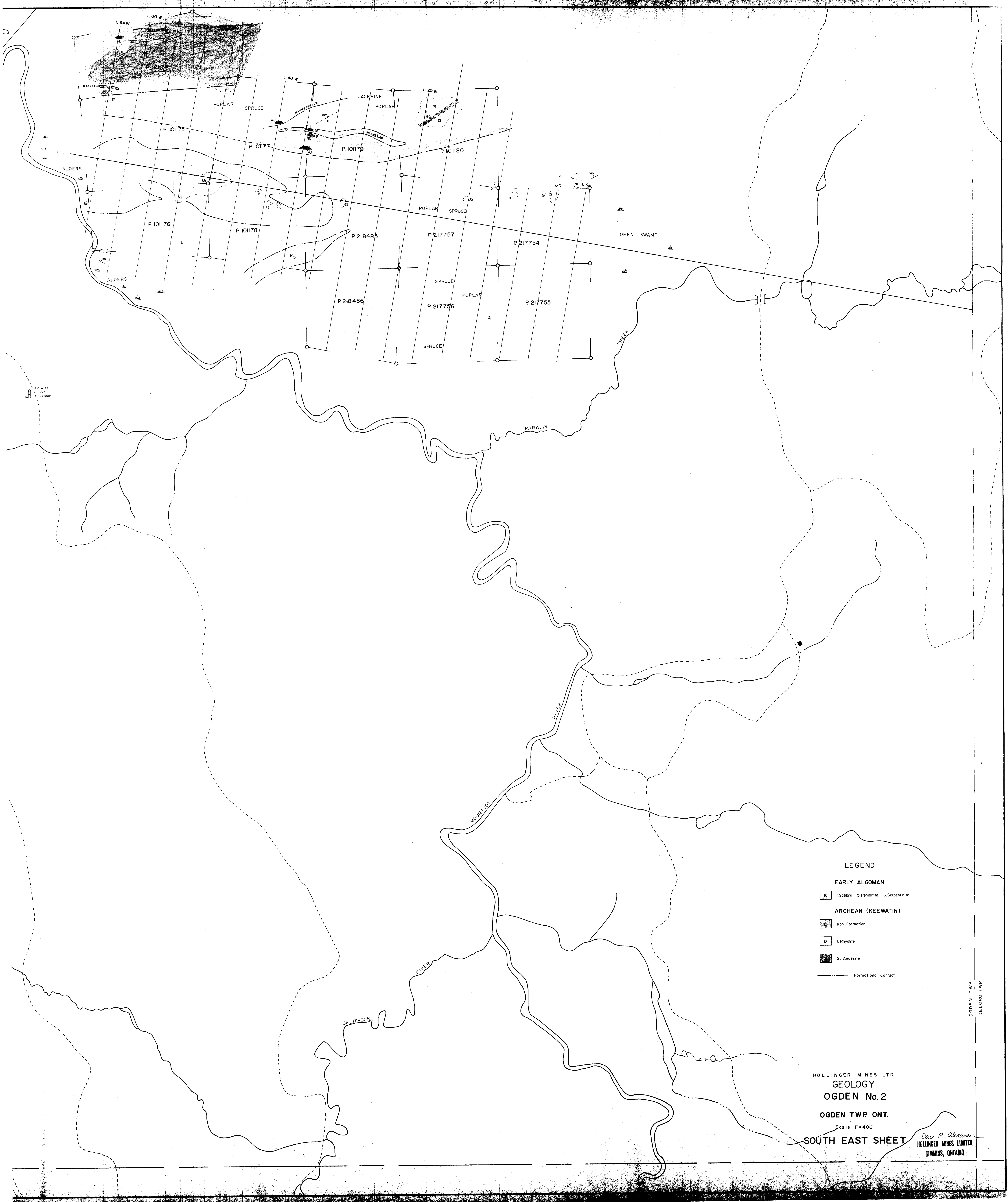


AST

60 WIDE
70 FT
L 1300'







LEGEND

EARLY ALGOMAN

- K 1. Gabbro 5. Peridotite 6. Serpentinite

ARCHEAN (KEEWATIN)

- I Iron Formation
- D 1. Rhyolite
- A 2. Andesite

--- Formational Contact

HOLLINGER MINES LTD
GEOLOGY
OGDEN No. 2

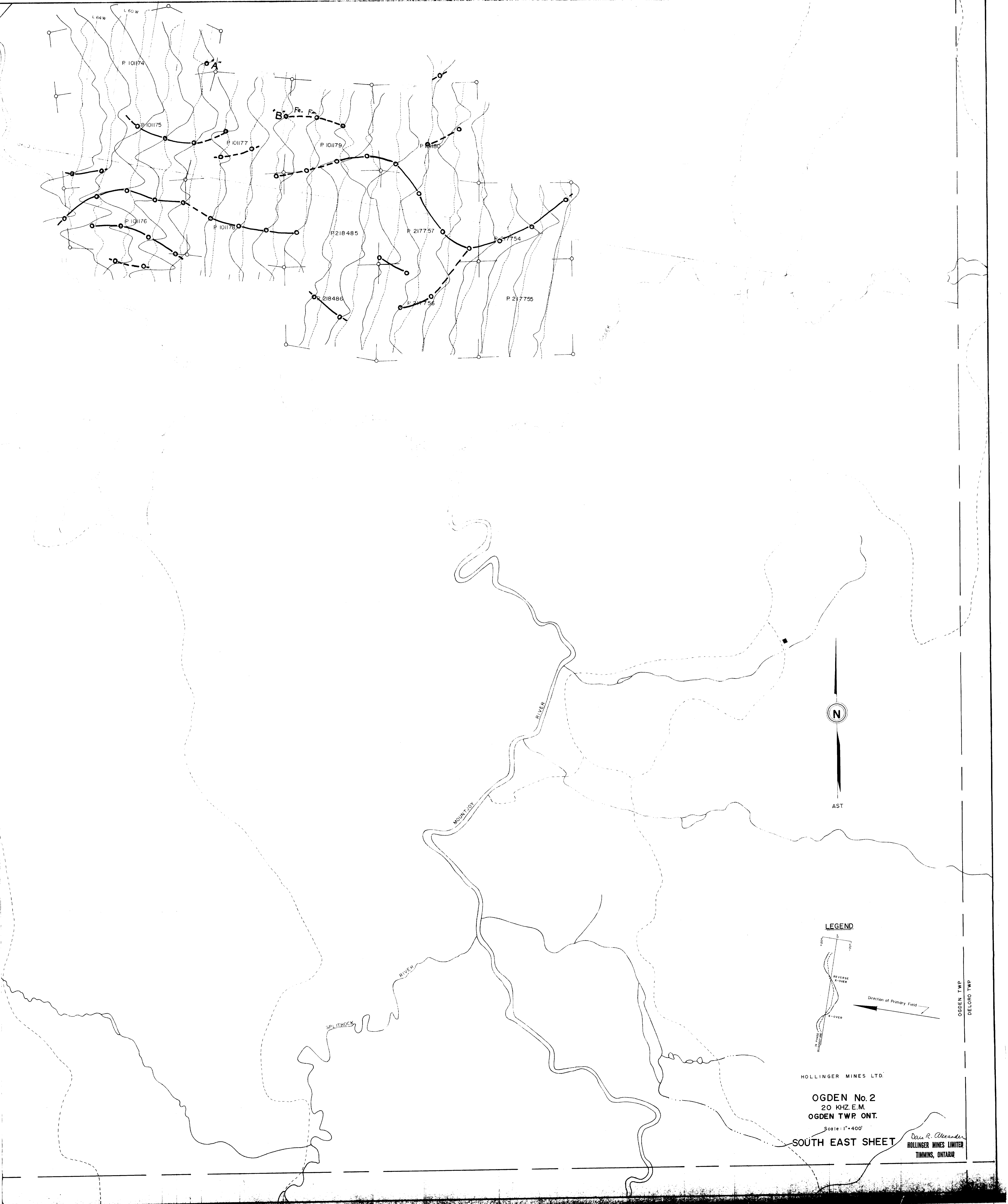
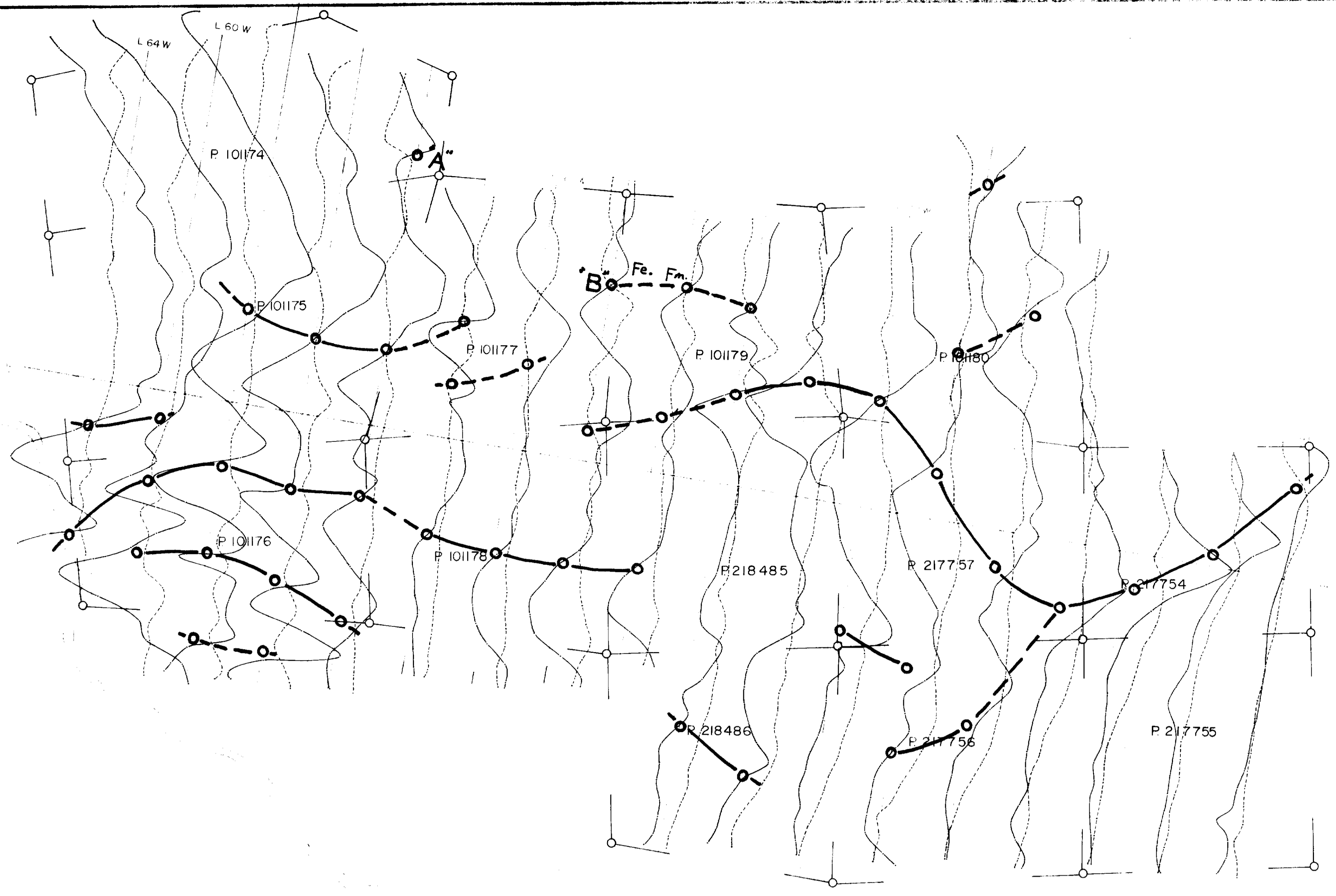
OGDEN TWP. ONT.

Scale - 1" = 400'

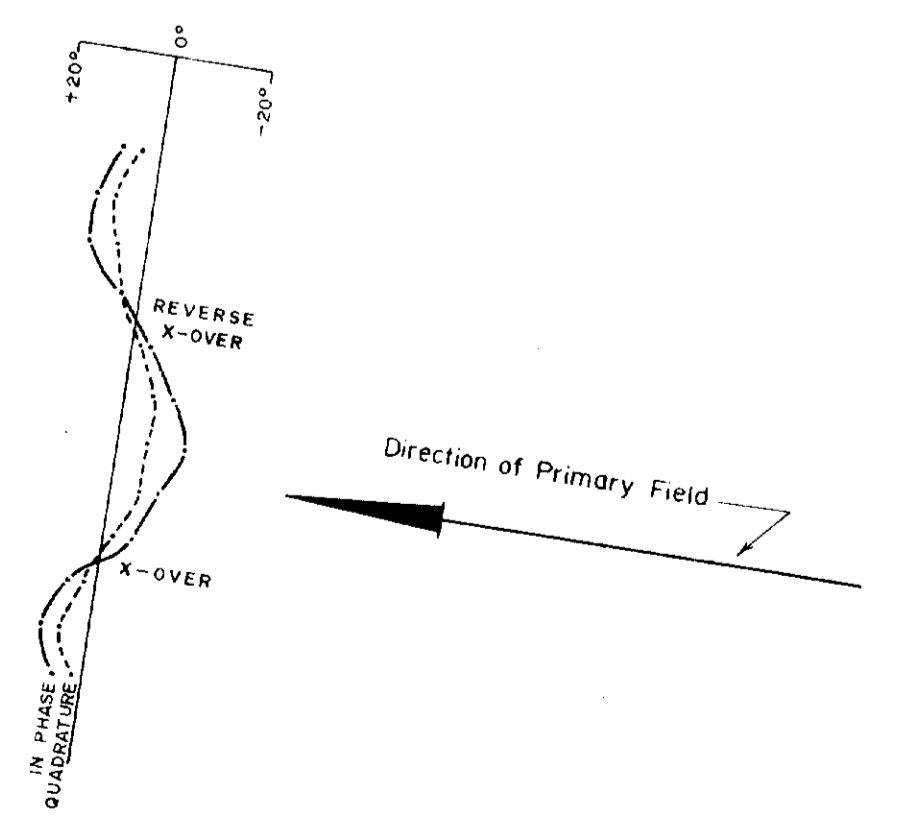
SOUTH EAST SHEET

David R. Alexander
HOLLINGER MINES LIMITED
TIMMINS, ONTARIO

OGDEN TWP.
DELORO TWP.



LEGEND



HOLLINGER MINES LTD.

OGDEN No. 2
20 KHZ. E.M.
OGDEN TWP. ONT.

Scale: 1"=400'

SOUTH EAST SHEET

Don R. Alexander
HOLLINGER MINES LIMITED
TIMMINS, ONTARIO

OGDEN TWP.
DELORO TWP.