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AIRBORNE GEOPHYSICAL SURVEY
IN THE
PUKASKWA RIVER AREA OF ONTARIO
FOR
HARLOW H. WRIGHT
BY
CANADIAN AERO MINERAL SURVEYS LIMITED
PROJECT NO. 015.

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ASSESSMENT WORK

ODM 63.2734

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AIRBORNE GEOPHYSICAL SURVEY

IN THE

PUKASKWA RIVER AREA OF ONTARIO

FOR

HARLOW H. WRIGHT

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CANADIAN AERO MINERAL SURVEYS LIMITED

PROJECT NO. 015.

OTTAWA, ONTARIO.
December 23, 1969.

D.R. Vohra, M.Sc.,
Geophysicist.



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	b) Description of Records
	c) Survey and Map Compilation Procedures
	d) Data Presentation

Accompanying this Report:-

- One E.M. Plan Map at a scale of 1" = 660' (approx).
- One Isomagnetic Contour Map (50 gamma contour interval).

I. INTRODUCTION

This report deals with the combined airborne E.M. magnetometer and gamma ray spectrometer survey flown on behalf of Harlow H. Wright, in Trust, in the Pukaskwa River Area of Ontario. This survey was flown on October 21, 1969 by the Canadian Aero Mineral Surveys Limited geophysically equipped Otter aircraft (registration CF-IGM) based at Wawa. The survey was flown at a mean terrain clearance of 150' with flight lines spaced at 1/16 mile intervals. All traverses were oriented North-South. The geophysical data recorded totalled 92.4 miles.

The following Canadian Aero Mineral Surveys Limited personnel were associated with this project:

G. Curtis	Project Manager
J. Stoa	Pilot
L. May	Aircraft Mechanic
R. Bolivar	Navigator
P. Rautenberg	Electronic Operator
W. Knappers	Data Chief
D. Fitzsimmons	Chief Draftsman
D. R. Vohra	Geophysicist.

The E.M. data and all magnetic anomalies coincident with conductors are plotted on a plan map at a scale of 1" = 660' (approx.). An airphoto laydown provided the base for this map.

An isomagnetic contour map has also been prepared with a contour interval of 50 gammas.

II. GEOLOGY

The following map published by the Ontario Department of Mines has been used as a reference:

Preliminary Geological Map No. 506 - Scale 1" = 1 mile.

The surveyed area is underlain by a complex of meta-sediments and metavolcanics. The metasediments are represented by greywacke, sandstone and arkose. The metavolcanics of the area consist of andesite, basalt, amphibolite, dacite and rhyolite flows.

An iron formation occurs in association with metasediments in the northern section of the surveyed area. An intrusive body represented by hornblende granodiorite and trondhjemite occurs in the central section of the surveyed area.

III. DISCUSSION OF RESULTS

(A) Magnetics

The isomagnetic contour map correlates quite well with the geology of the area. The strongest magnetic features relate to the iron formation and the magnetics extend the iron formation farther than mapped.

(B) Electromagnetics

A large number of strong bedrock conductors were

detected by the airborne survey in this rather small area.

Conductor 1

This conductor is short and compact. It comprises anomalies 40A, 41A and 42A. The in-phase quadrature ratios for these anomalies are 3.0, 3.66 and 2.0 respectively. This indicates that they are caused by a very strong conductive body. All three anomalies are associated with low magnetics.

This conductor is probably due to the occurrence of massive sulphides.

Conductor 2

This conductor is similar to conductor 1 and may be an extension of it. It is short and compact. It consists of anomalies 37A and 38A. The in-phase quadrature ratios for these anomalies are 7.66 and 5.0 which suggest that the anomalies are caused by a strong conductive body. These anomalies are associated with low magnetics. Probably this conductive zone is associated with massive sulphides.

Conductor 3

This conductor is associated with moderate magnetics. It has a general strike NE-SW. It comprises anomalies 36A, 35A, 34A, 33A, 32A and 31A.

The in-phase quadrature ratios for these anomalies indicate that they are caused by a very strong conductive body.

This conductor may be due to graphite or massive sulphides but the good magnetic correlation would favour a sulphide source.

Conductor 4

This conductor is of lower amplitude as compared to the conductors 1, 2 and 3. It consists of anomalies 29A, 28A, and 27A having an in-phase quadrature ratio of 3.5, 1.6 and 1.5 respectively. This indicates that the anomalies may be due to a deep seated or a small conductive body.

The region in the vicinity of conductive zone 3 is extremely complex. The complex geologic structure in this area should give it a higher priority for ground follow-up work than zones 1, 2 and 4. These high conductivity anomalies are due either to massive sulphides or well developed graphite, or some combination of the two.

Conductors 5 - 11

Conductors 5 - 11 follow an iron formation trend and are probable bedded sulphides or graphite conformable with the iron formation. The regions in the vicinity of conductors 5 and 7 should be considered good spots for ground follow-up.

IV. RECOMMENDATIONS AND CONCLUSIONS

All the conductors detected by the airborne survey should be checked out on the ground except possibly X-type anomalies

or weak out-of-phase features which may be due to conductive overburden.

On the basis of the airborne results top priority should be given to the strong anomalies in Conductor 3 with second choice given to Conductor 5.

Respectfully submitted,



D.R. Vohra, M.Sc.,
Geophysicist.

OTTAWA, ONTARIO,
December 23, 1969.

PROJECT NO. 015 - PUKASKWA RIVER AREA

<u>Anomaly</u>	<u>Fiducials</u>	<u>In-Phase Quad</u>	<u>Altitude</u>	<u>Magnetics</u>	<u>Rate</u>	<u>Comments</u>
5A	686/8	-/40	125	Assoc? 800g	3	Weak. IP Supp. Mag. effect permeability.
9A	11905/25	190/80	140	S.Flank 440g	2B	
10A	12690/10	-/40	130	Dir. 6000g	3	Weak-IP Supp. Mag perm effect.
10B	12635/58	50/30	135	N.Side 6000g	3	
11A	14170/90	160/220	120	Dir. 11000g	3	IP Suppressed Mag. perm effect
11B	14220/46	50/50	120	Dir. 650g	3	Weak
12A	15030/50	-/50	150	Dir. 11000g	3	IP Suppressed Mag. perm effect
12B	14982/5005	40/60	140	N.Side 11000g	3	
13A	16432/55	-/25	120	Dir. 8000g	X	IP Suppressed Mag perm effect
13B	16482/502	320/125	125	Dir. 3000g	2A	
14A	17243/65	-/60	170	Dir. 5000g	3	IP Suppressed Mag perm effect
14B	17202/20	180/80	150	Dir. 5000g	2A	
15A	18708/25	-/60	130	Dir. 5000g	3	IP Suppressed Mag. perm effect
15B	18765/86	200/70	135	Dir. 2500g	2A	
16A	19685/705	60/60	150	Dir. 4000g	3	
17A	21066/84	50/60	130	Dir. 1000g	3	
17B	21127/45	80/20	150	Dir. 1500g	3	
18A	22080/104	-/70	125	Dir. 3000g	3	IP Suppressed Mag perm effect

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<u>Anomaly</u>	<u>Fiducials</u>	<u>In-Phase Quad</u>	<u>Altitude</u>	<u>Magnetics</u>	<u>Rate</u>	<u>Comments</u>
18B	22050/65	40/0	145	Dir? 10g	X	
18C	22000/20	90/20	155	Dir. 4000g	3	
19A	23420/50	-/90	125	Dir. 6000g	3	IP Suppressed Mag perm effect
19B	23540/63	160/60	165	Dir. 3400g	2A	
20A	24210/55	-/60	150	Dir. 4000g	3	Double IP Supp. Mag perm effect
20B	24180/97	40/0	165	S.Side 4000g	X	
20C	24141/62	220/60	155	Dir. 3700g	2A	
21A	25673/85	0/30	140	N.Edge 3800g	X	
21B	25715/35	40/70	140	Dir. 3000g	3	
22A	26549/70	0/40	135	Dir. 3500g	3	
22B	26510/30	0/60	135	Dir. 2800g	3	
23A	27700/2	300/130	130	Dir. 7000g	2A	
23B	27750/70	80/100	120	Dir. 1600g	3	
24A	28551/71	160/80	150	Dir. 5000g	2A	
24B	28513/33	100/90	135	Dir. 2700g	3	
25A	29678/98	80/70	175	Dir. 5000g	3	
25B	29734/56	570/100	140	Dir. 3600g	2A	
26A	30583/602	160/100	150	Dir. 3300g	2A	
26B	30538/59	300/80	175	Dir. 4000g	2A	
27A	31435/57	60/40	150	Dir. 650g	3	IP distorted by turbulence
27B	31718/37	190/110	150	Dir. 7000g	2A	
27C	31776/96	480/120	140	Dir. 5000g	2A	

<u>Anomaly</u>	<u>Fiducials</u>	<u>In-Phase Quad</u>	<u>Altitude</u>	<u>Magnetics</u>	<u>Rate</u>	<u>Comments</u>
28A	32837/63	80/50	165	N.Edge 550g	3	Double
28B	32630/50	80/70	150	Dir. 4500g	3	
28C	32584/602	180/20	135	Dir. 3600g	2A	
29A	33666/86	70/20	150	N.Edge 140g	3	
29B	33934/56	140/80	155	Dir. 8000g	2A	
29C	33985/40005	80/40	125	Dir. 1600g	3	
30A	34925/43	90/60	145	Dir. 8000g	3	
30B	34880/90	170/100	120	Dir. 4000g	3	
31A	35805/40	+800/80	125	Dir. 550g	1A	
31B	36175/80	270/240	115	Dir. 2300g	3	IP possibly suppressed by mag perm effect
32A	37260/88	+800/40	115	Dir. 420g	1A	Double
32B	37015/34	60/60	155	Dir. 6000g	3	
32C	36980/98	-/100	100	Dir. 5000g	3	IP Suppressed Mag perm effect
33A	38012/42	+700/140	120	Dir. 250g	1A	
33B	3835/7	40/30	175	Dir. 1900g	3	
34A	39370/90	680/70	140	Dir? 150g	1A	
34B	39110/30	30/80	125	Dir. 6000g	3	IP Suppressed Mag perm effect
35A	40093/119	570/-20	140	Dir. 150g	2A	
35B	40410/35	160/280	100	Dir. 9000g	2A	IP Suppressed Mag perm effect
36A	41345/7	470/-20	150	Dir. 200g	2A	
36B	41090/100	50/50	140	Dir. 9000g	3	IP Suppressed Mag perm effect

<u>Anomaly</u>	<u>Fiducials</u>	<u>In-Phase Quad</u>	<u>Altitude</u>	<u>Magnetics</u>	<u>Rate</u>	<u>Comments</u>
37A	41958/8	230/30	175	Dir. 15g	2A	
38A	43150/70	50/10	270	Dir. 10g	2A	
40A	45129/45	30/10	300	Dir. 20g	2A	
41A	45946/66	140/30	170	Dir. 20g	2A	
42A	47037/63	40/20	300	Dir. 30g	2A	

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REPORT ON
AIRBORNE GAMMA RAY SPECTROMETER SURVEY
FOR
KING ISLAND MINES LIMITED
IN THE PUKASKWA RIVER AREA OF ONTARIO
BY
CANADIAN AERO MINERAL SURVEYS LIMITED
Project No. 0306

ODM 63.2734

REPORT ON

AIRBORNE GAMMA RAY SPECTROMETER SURVEY

FOR

KING ISLAND MINES LIMITED

IN THE PUKASKWA RIVER AREA OF ONTARIO

BY

CANADIAN AERO MINERAL SURVEYS LIMITED

PROJECT NO. 0306

**OTTAWA, ONTARIO,
March 16, 1970.**

**K.N. Hendry, B.Sc.,
Geophysicist.**



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Accompanying This Report:-

- One Radiometric Map at a scale of 1" = 660 feet.

REPORT ON
AIRBORNE GAMMA RAY SPECTROMETER SURVEY
FOR
KING ISLAND MINES LIMITED
IN THE PUKASKWA RIVER AREA OF ONTARIO

I. INTRODUCTION

This report pertains to the radiometric portion of the combined airborne E.M., magnetometer and gamma ray spectrometer survey flown on behalf of King Island Mines Limited, in the Pukaskwa River area of Ontario. The survey was accomplished October 21, 1969 by the Canadian Aero Mineral Surveys Limited, geophysically equipped Otter aircraft (registration CF-IGM) based at Wawa.

The survey was flown at a mean terrain clearance of 150' with flight lines spaced at 1/16 mile intervals. All traverses were oriented north-south. The geophysical data acquired totalled 92.4 miles.

The following Canadian Aero Mineral Surveys Limited personnel were associated with this project:

J.	Stoa	Pilot
R.	Bolivar	Navigator
P.	Rautenberg	Operator
L.	May	Mechanic
G.	Curtis	Project Manager
D.	Fitzsimmons	Draftsman
W.	Knappers	Data Chief
D.R.	Vohra	Geophysicist
K.N.	Hendry	Geophysicist.

All uranium anomalies greater than one and a half times the normal lithologic background count in the area are presented on a plan map at a scale of 1" = 660'. An airphoto laydown provided the base for this map.

II. INSTRUMENTATION

The Otter aircraft used for this survey carried (in addition to the E.M. and magnetic equipment) the following equipment:

- 1) An Aeropath AS-5 continuous strip 35 mm. camera.
- 2) A Bonzer radar altimeter to provide a record of the terrain clearance of the aircraft.
- 3) A Brush 2300 light sensitive recorder with capacity for 16 channels and chart width of 6 inches.

For the present survey 5 channels were utilized as follows: When holding the chart such that the fiducial numbers increase from left to right, the bottom trace corresponds with the Thorium channel, the second trace with Uranium, the third trace with Potassium and the fourth trace with Total Count. The top trace corresponds with the altimeter output.

The zero levels for each channel are shown on the records at the start of the flight. Full scale deflection on all four radiometric channels corresponds with 2½ inches (5 major divisions) on the record.

4) The gamma-ray spectrometer is manufactured by Hamner Electronics Products, a division of Harshaw Chemical Company, to Aero Service specifications. Three 6 inch by 4 inch Thallium activated Sodium Iodide crystals are utilized. Rateometer ranges cover count rates from 100 - 100,000 counts per second with a choice of time constants from 0.25 - 10 seconds. Upper and lower threshold settings are continuously adjustable allowing for the discrimination of Potassium, Uranium and Thorium responses.

For the present survey the following settings were

employed:

<u>Channel</u>	<u>Window Width</u>	<u>Full Scale</u>
Total Count	.80 - 3.08 MEV	1000 c.p.s.
Potassium	1.32 - 1.52 MEV	100 c.p.s.
Uranium	1.66 - 1.86 MEV	100 c.p.s.
Thorium	2.12 - 2.32 MEV	200 c.p.s.

III. GEOLOGY

The following map published by the Ontario Department of Mines has been used as a reference:

Preliminary Geological Map No. 506 - Scale: 1" = 1 mile.

The surveyed area is underlain by a complex of meta-sediments and metavolcanics. The metasediments are represented by

greywacke, sandstone and arkose. The metavolcanics of the area consist of andesite, basalt, amphibolite, dacite and rhyolite flows.

An iron formation occurs in association with meta-sediments in the northern section of the surveyed area. An intrusive body represented by hornblende granodiorite and trondhjemite occurs in the central section of the surveyed area.

IV. DISCUSSION OF RESULTS

All uranium anomalies greater than $1\frac{1}{2}$ X the normal lithologic background are plotted on the plan map.

Background count is about 20 c.p.s. while over lakes it decreases to about 10 c.p.s.

A number of very weak anomalies were detected. None of them rate ground follow-up.

OTTAWA, ONTARIO,
March 16, 1970.

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Respectfully submitted,

K.N. Hendry

K.N. Hendry, B.Sc.,
Geophysicist.

APPENDIX II

A. EQUIPMENT

The electromagnetic unit and the magnetometer are the key instruments in the Canadian Aero Mineral Surveys Limited Otter survey system. The remainder of the equipment consist of a radar altimeter, a spectrometer, an accelerometer, a continuous - strip camera, three recorders and a fiducial numbering system.

The EM unit is the Canadian Aero Service Limited MARK IV low frequency (320 c.p.s.) in-phase/out-of-phase system. The transmitting and receiving coils are mounted on the wingtips of the Otter, with a vertical coplanar orientation and a separation of 61 feet. An electronic null device is adjusted so that in the absence of a conductor within the range of the system no signal is recorded. The anomalous signal is divided into two components, the "in-phase" component having the same phase as the transmitted field and the "quadrature" or "out-of-phase" component being at right angles to it. These two measurements are recorded on two channels of the six-channel rectilinear recorder.

Variations in the total magnetic field of the earth are measured by a Gulf Fluxgate magnetometer mounted in the aircraft. Anomalies as small as 10 gammas can normally be distinguished. The output of the magnetometer is presented as one channel on the six-channel recorder to facilitate correlation with the EM traces. It is also presented at a larger scale and in rectilinear form on a separate recorder, these recording being used in the preparation of isomagnetic contour maps whenever they are required.

A Bonzer radar altimeter provides a terrain clearance profile on one channel of the six-channel recorder. Because EM response decays rapidly with increasing altitude this altitude information is important in the analysis of the EM data.

A vertical accelerometer mounted in the aircraft provides a record of the air turbulence and of any drastic manoeuvres of the aircraft. The accelerometer trace on the six-channel recorder is often helpful in recognizing spurious blips on the EM traces caused by air turbulence or drastic manoeuvres.

The gamma ray spectrometer is manufactured by Hamner Electronic Products, a division of Harshaw Chemical Company, to Aero Service specifications. Three 6-inch diameter by 4-inch thickness thallium activated sodium iodide crystals are utilized. Ratemeter ranges cover count rates from 100 c.p.s. to 100,000 c.p.s. with a choice of time constants from 0.25 to 10 seconds. Upper and lower threshold settings are continuously adjustable allowing for the discrimination of potassium, uranium and thorium. Results are presented on a rectilinear recorder together with altimeter data.

The entire flight path is photographed by a vertically - mounted Aeropath 35 mm. continuous-strip camera.

Synchronization of the film strip with the three recorders is accomplished by means of an automatic fiducial numbering system which prints simultaneous time markers on all records at regular time intervals, normally every ten seconds.

Due to the time constant used in the electromagnetic unit, both the EM in-phase and quadrature recordings are delayed by approximately 1 second. This is taken into account when plotting the position of each anomaly.

B. DESCRIPTION OF RECORDS

Rectilinear Magnetic Record

With the chart oriented so that fiducial numbers increase from right to left, upward deflections on the chart indicate increases in the total magnetic field of the earth. On the 1200 scale the smallest division on the chart is approximately equivalent to 10 gammas. When the record "steps" a change of approximately 1000 gammas is indicated.

The fiducial marks are normally spaced at 10-second intervals, a spacing which is equivalent to approximately 1500 feet on the ground. The exact horizontal scale of the tape can be established by measuring the fiducial spacing on the map.

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Brush Six-Channel Record

With the chart oriented so that fiducial numbers increase from right to left the tracings from the bottom to the top of the chart are as follows:

Fiducial markers - same comments as above.

- Channel 1) Magnetometer - positive upward. On the 1200 scale 1 minor division is approximately equivalent to 25 gammas and a step is approximately 1000 gammas.
- Channel 2) EM In-Phase - positive upward. 1 minor division represents approximately 20 parts per million, referred to the primary field at the receiving coil.
- Channel 3) EM Quadrature - positive upward. Same scale as In-Phase.
- Channel 4) Radar Altimeter. Altitude increases upwards. 150' centre line and 300' top line of channel.
- Channel 5) Accelerometer - an acceleration of $\frac{1}{2}$ "G" is equivalent to a 5 minor divisions deflection from the central point.
- Channel 6) Spectrometer total count.

Fiducial markers - same comments as above.

When a spectrometer survey is included, the information is recorded on a Clevite 6" Rectilinear light sensitive recorder. Window settings and counts used are specified in the accompanying report.

C. SURVEY AND MAP COMPILATION PROCEDURES

Uncontrolled airphoto mosaics usually serve as base maps for flying the survey and for compilation of the geophysical data. The most common scale is 1/4 mile per inch.

The flight lines are oriented perpendicular to the assumed longest dimension of massive sulphide occurrences anticipated in the survey area. Occasionally two or more line directions have to be used to accommodate changes of geological strike within the area. Line spacings normally range between 1/8 mile and 1/4 mile.

The navigator is provided with "flight strips" of the area to be surveyed. These flight strips are a copy of the airphoto mosaic, with the intended flight lines inked and numbered. Navigation along the parallel flight lines is accomplished by visual means based on the physical detail observed on the photos. The aircraft is flown at a terrain clearance of 150 feet or, in rough terrain, at the lowest safe altitude.

Flight path is recovered in the field by comparison of the 35 mm. strip film with the airphoto mosaics. Identifiable points are marked on the mosaics and designated by numbers determined from the fiducial numbering system on the film. These recovered flight lines provide the positional basis for plotting the geophysical data. The EM anomalies are listed and graded in the field and are often plotted on the field mosaics to permit immediate acquisition of ground.

In our Ottawa office screened positives of the mosaics are prepared, upon which are drafted the recovered fiducial points, the interpolated flight lines positions and the significant geophysical data. The geophysical data are subjected to a careful analysis by a geophysicist who prepares an interpretation report including recommendations for further work.

D. DATA PRESENTATION

The data presentation procedure which we employ for the Otter geophysical system is a combination of an anomaly listing and a plan map plot of graded EM anomalies. The anomaly listing provides the significant details concerning each anomaly and the map gives a "bird's eye view" of the conductors detected.

For purposes of listing and to facilitate reference in the report each EM anomaly is assigned a "name", which is made up of the number of the line upon which the anomaly occurs plus a letter. For example, on line 257 anomalies would be named 257A, 257B, 257C, etc., from south to north or from west to east. The letter which appears beside each EM anomaly on the map is therefore part of its name. These names also appear on the Brush records and in the anomaly list.

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The anomaly list contains the fiducial numbers at the edges of the EM anomaly, the in-phase and quadrature amplitudes in p.p.m., the altitude at which the anomaly was detected, the positional relationship of the EM anomaly to magnetic anomalies (if any), a rating, and comments concerning any other pertinent characteristics of the anomaly.

The nomenclature used in the "magnetics" column of the anomaly list requires some explanation. The main terms used are side, flank, edge and direct. These refer to the position of the EM peak relative to the axis of the magnetic feature. "Direct" depicts coincident peaks and similar widths; "edge" is slightly offset; "flank" is somewhere along the flank of the magnetic anomaly; "side" is down near the base. "N. Flank 800g" means that the EM anomaly occurs along the northern flank of a magnetic feature of 800 gammas total amplitude. When one peak of a multiple EM anomaly coincides with a magnetic high the specific peak may be designated. For example, if the southern peak of a double EM anomaly coincided with a 250 gamma magnetic anomaly the nomenclature would be "Dir. S. 250g".

The rating assigned to each EM anomaly in the listing determines the symbol which represents the anomaly on the map. Six categories of anomalies are defined: 1A, 1B, 2A, 2B, 3, and X. The numbers "1", "2" and "3" are primarily a measure of in-phase amplitude corrected for altitude variation: "1" is for very large anomalies, "2" for intermediate, and "3" for relatively weak response. This rating is sometimes affected by the shape, by the in-phase to quadrature ratio, or by the location of the anomaly. The letters "A" and "B" merely refer to the magnetics: "A" indicates a directly coincident magnetic anomaly, and "B" indicates the lack thereof. The "X" rating is reserved for questionable anomalies. The legend on the map shows the symbol used for each of these ratings. In general, the more the rectangle is filled in, the stronger the anomaly.

In the case of directly coincident magnetic anomalies, the amplitude of the magnetic feature is shown on the EM map. It is stencilled beneath the symbol which portrays the EM anomaly.

During the final interpretation stage, EM anomalies are correlated from line to line wherever possible and the conductive zones are outlined. All definite conductors are numbered on the map and discussed in the report.

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A D D E N D U M

The following changes should be noted in APPENDIX II for this survey:

- 1) Channel 5 on the six-channel record is blank and the accelerometer is recorded on Channel 6.
- 2) Settings for the gamma ray spectrometer are indicated on the records at the start of traverse 1.

QUALIFICATIONS

NAME: Dharam Raj Vohra

BIRTHDATE: February 20, 1939

POSITION: Geophysicist

NATIONALITY: Indian Citizen

EDUCATION:

School: University of Poona & Banaras

Thesis Title: Geology of the

Major: Geology

area around Kapari Village,

Degree: B.Sc., M.Sc.

District Almora, U.P. India.

A. Courses organized by Geological Survey of West Germany.

- i) Interpretation of Photogeological data.
- ii) Geophysical methods for mineral exploration and their interpretation techniques.

B. LANGUAGE COURSES

1. German course at Banaras University.
2. German course at Bénédict Sprachschule, West Germany.
3. French course at Banaras University.

PRE AERO EXPERIENCE:

1. 1962 - 63 - Geologist-Geophysicist. The Stoange Limited, New Delhi. Directing Geological and Geophysical Surveys for Mineral Exploration.
2. 1964 - Geologist-Geophysicist, Österreicheminerallölverwaltung, Wien, Austria. Prospecting, planning, production and distribution of natural gas.
3. 1965 - Prakla G.m.b.H., West Germany, Seismic Computation, interpretation and programming for Seismic Surveys.
4. 1965 - 66 - Geophysicist, Bundesanstalt Für Bodenforschung. Directing Gravity Surveys.

5. 1966 - Geologist - Geophysicist. Gewerkschaft Brigitta, West Germany. Well site, geological and geophysical techniques, Co-ordination of geological and geophysical data.
6. 1967 - Geologist - Geophysicist. Falconbridge Nickel Mines Ltd. Supervising Geophysical Surveys for Mineral Exploration.
7. 1968 - Geologist - Geophysicist. Huntec Ltd., Directing geological, geochemical and geophysical surveys for Mineral Exploration.
8. 1968 - 69 - Senior Geophysicist / Project Manager. R. Benjelloun Consulting Geologists and Geophysicists. Directing Geophysical Surveys for Engineering and Mining projects.

AERO EXPERIENCE:

Joined Canadian Aero Mineral Surveys Limited on 6th. October, 1969.

SOCIETY MEMBERSHIPS:

1. Society of Exploration Geophysicists.
2. Canadian Society of Exploration Geophysicists.
3. Nordic Association for Applied Geophysics.

PUBLICATIONS

"Geology of the Area Around Kapari Village, District Almora, U.P".

1962 - Banaras University Publication.

LANGUAGES SPOKEN:

English, Hindi, German, French and some knowledge of Russian.

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Q.U.A.L.I.F.I.C.A.T.I.O.N.S

NAME: K. N. Hendry BIRTH DATE: July 27, 1944
POSITION: Geophysicist NATIONALITY: Canadian

EDUCATION

School - Carleton University
Major - Geology, 1967
Degree - B.Sc.

Pre-Canadian Aero Experience:

1. Summer job 1964, Hollinger Consolidated Gold Mines Limited. Geological mapping as an assistant.
2. Summer job 1965, Quebec Department of Natural Resources. In charge of geochemical aspect of Project Grenville near Chibougamau, PQ. with 6 crews.
3. Summer job 1966, Cominco Limited. In charge of camp on Cornwallis Island doing geochemistry, geology, I.P. (done by others) and core drilling.

5064-1317

EXPERIENCE:

Mr. Hendry joined Canadian Aero Mineral Surveys Limited in 1967 as field geophysicist. He was immediately sent to the U.S. where he was in charge of crews conducting I.P. surveys in the southwest states including Wyoming, Texas, New Mexico and Arizona where he was based. In 1969 Mr. Hendry returned to Canada and was engaged in I.P. surveys in British Columbia and the Yukon over a wide variety of targets.

The majority of experience he obtained was with the time domain I.P. system but he also obtained frequency I.P. experience in Tucson, Arizona. He is familiar with theoretical interpretation of I.P. through contact with experienced geophysicists of Canada and Arizona.



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RESIDENT GEOLOGIST
SAULT STE. MARIE



REPORT ON THE PROPERTY
of
KING ISLAND MINES LIMITED
LOCATED IN THE
PUKASKWA RIVER AREA
SAULT STE. MARIE MINING DIVISION
DISTRICT OF THUNDER BAY
PROVINCE OF ONTARIO

by

Michael Zurowski, B.Sc., P.Eng.

NOT TO BE REMOVED FROM
THE OFFICE OF THE RESIDENT
GEOLOGIST, ONT. DEPT. OF MINES
SAULT STE. MARIE, ONT.

Toronto 1, Ontario

January 9, 1970.

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REC'D. FROM
ONTARIO SECURITIES COMA

REPORT ON THE PROPERTY
of
KING ISLAND MINES LIMITED
PUKASKWA RIVER AREA - DISTRICT OF THUNDER BAY
PROVINCE OF ONTARIO

SUMMARY

The property of King Island Mines Limited consists of 80 contiguous, unsurveyed and unpatented mining claims numbered SSM-80846 to 80861 inclusive; SSM-81156 to 81172 inclusive; SSM-81505 to 81522 inclusive and 231972 to 232000 inclusive.

The property lies in the Pukaskwa River area; Sault Ste. Marie Mining Division; District of Thunder Bay, in the Province of Ontario. It is accessible by aircraft or helicopter from Wawa, Ontario in a west - northwesterly direction, a distance of about 40 miles.

The property is located in the west segment of the Kabenung Lake - Pukaskwa River belt of metavolcanic and meta-sediments, near the south margins of the enclosing granitic rocks. This sequence of geological formations are considered favourable to hosting economic mineral deposits.

There is a copper occurrence on the property and the confining structure is a fault zone, trending N60° W and dipping steeply north. The occurrence was investigated by seven diamond drill holes. Although interesting copper assays were obtained in the drilling, the overall quantity and quality of the mineralization is below economic limits. The fault structure, which may host other mineralized zones, merits further exploratory work.

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A combined airborne electromagnetic and magnetic surveys were completed over the property. The surveys revealed eleven (11) zones of electrical conductivity. Most of the anomalies have coincident supporting magnetic correlation. These conductors are considered to be caused by sulphide mineralization rather than non-metallic conductive material.

Four of the eleven conductive zones are located in the south segment of the property, immediately to the east of the copper occurrence. Sampling of the stream sediments from a river which drains this area revealed anomalous quantities of copper, zinc, nickel and cobalt.

No geochemistry was conducted in the north segment of the property where the remaining six conductive zones are located. The geological environment hosting these six conductive zones is primarily a metasediment complex containing lean iron formation.

The airborne anomalies are considered top priority targets for further exploration.

CONCLUSIONS

A comprehensive and detailed exploratory program to investigate the many geophysical anomalies and the copper bearing fault structure on the King Island Mines Limited "Pukaskwa River" property, for economic concentrations of base metal and/or precious metal mineralization, is definitely warranted.

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RECOMMENDATIONS

The following two stage exploratory program is recommended to investigate the subject property:

Stage 1

(a) Geophysical Surveys - That electromagnetic and magnetic surveys be conducted over the copper bearing fault structure and those segments of the property containing the airborne anomalous zones. The picket line interval over the copper bearing structure should be at 200 foot intervals; at 300 foot intervals over airborne anomalies I to IV inclusive and at 400 foot intervals over airborne anomalies V to XI inclusive. Total picket line mileage required is estimated at 30 line miles.

(b) Geological Survey - The segments of the property covered by the geophysical surveys should be mapped geologically, in detail.

(c) Geochemical Survey - A soil sampling program be initiated in those segments of the area covered by above surveys which lends itself to this type of investigation.

Stage 2

This stage of the exploratory work program would consist of trenching and diamond drilling to investigate the salient features outlined in the geophysical, geological and geochemical surveys. Inasmuch as it is rather premature to estimate the amount of trenching and diamond drilling that will be required, a minimum of

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3000 feet of diamond drilling appears to be in order.

The cost of each stage of the recommended
exploratory program is estimated as follows:

Stage 1

(a) Geophysical Surveys including linecutting	\$8500.00
(b) Geological Survey	2500.00
(c) Geochemical Survey	3500.00
Transportation Allowance	1600.00
TOTAL	<u>\$16000.00</u>

Stage 2

(a) Trenching (estimate)	\$10,000.00
(b) Diamond Drilling - 3000 feet minimum at \$15.00/foot, all inclusive rate	45,000.00
TOTAL	<u>\$71,000.00</u>

The all inclusive cost of the recommended explora-
tory program is estimated at \$71,000.00. However, the implimen-
tation and the extent to which Stage 2 is carried out will necessarily
depend upon the evaluation of the results of the exploratory work
performed in Stage 1.

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PROPERTY

The property of King Island Mines Limited consists of eighty (80) contiguous, unsurveyed and unpatented mining claims numbered SSM-80846 to 80861 inclusive; SSM-81156 to 81172 inclusive; SSM-81505 to 81522 inclusive and 231972 to 232000 inclusive.

The area of the property is about 3,200 acres.

LOCATION, ACCESS, ETC.

The subject acreage lies in the Pukaskwa River area; Sault Ste. Marie Mining Division; District of Thunder Bay in the Province of Ontario.

The Pukaskwa River area is situated about 40 miles west - northwest of Wawa, Ontario. Wawa is situated on Highway No. 17 about 120 miles due north of Sault Ste. Marie. The main mining operations of the Algoma Steel Corporation Limited are centered in Wawa, Ontario.

Access to the subject acreage is best achieved by chartered aircraft or helicopter from Wawa, Ontario. Unfortunately, the lakes within the property boundary are small and will only accommodate small aircraft during the winter season and then only after preparation of a landing strip. Larger lakes which could accommodate most types of float or ski equipped aircraft are located several miles away from the perimeter of the property. There is a

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privately owned lumber road from Highway No. 17 to Iron Lake, a distance of fifteen miles from the subject property.

Topography is fairly rugged and the forest cover is dense.

A hydro line passes within 8 miles of the property.

GEOLOGY

Regional - A belt of metavolcanics and metasediments, Precambrian in age, extends southwestward from Kabenung Lake to the Pukaskwa River, a distance of about 30 miles. This belt varies in width from 4 to 8 miles. The metavolcanics and metasediments are bounded by granitic rocks.

The oldest rocks of the assemblage are mafic volcanics, intercalated with felsic metavolcanics and thin sedimentary strata. The mafic volcanics are overlain by a metasedimentary sequence that includes iron formation, greywacke, argillite, arkose, slate and polymictic conglomerate.

The mafic volcanic rocks near the margins of the granitic intrusives are recrystallized to amphibolite and coarse grained mafic rocks resembling gabbro and diorite.

This belt of mafic metavolcanics and metasediments have been folded into an easterly plunging syncline.

Intruding the metavolcanics and metasediments are stocks of granite and gabbro.

Property - The subject acreage is situated in the westerly

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segment of the Kabenung Lake - Pukaskwa River belt of metavolcanic - metasediment, near the south margins of the enclosing granitic rocks.

The greater part of the subject acreage is underlain by mafic metavolcanics. Two bands of infolded sediments trend across the property. A small stock of granite, located in the west part of the property, intrudes the mafic metavolcanic rocks. The stock is about one mile in diameter.

The general trend of the rock formations on the property is east - west, although there are local variations to this trend.

Strong topographic lineaments are suggestive of faulting and shearing on the property.

The most northerly belt of metasediments on the subject acreage have been folded into an easterly plunging syncline.

HISTORY

A brief history of the exploration activities in the Pukaskwa River area and the exploratory work conducted on the subject property is described in chronological order, as follows:

1954 - Hollinger Consolidated Gold Mines Limited, in conjunction with The Mining Corporation of Canada Limited, performed geological mapping, trenching, a dip needle survey and 13 short drill holes on a copper occurrence, known as the Lorne Prospect, located south of McDougall Lake, at co-ordinates 85° - 48' longitude and 48° - 09' latitude.

1966 - Copper mineralization was discovered in an area

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east of the east branch of the Pukaskwa River, at a point designated by latitude 48° - 09' and longitude 85° - 32' by Peter Nabigon and David Thornsteinson of Port Arthur, Ontario. The occurrence falls in the area common to claims SSM-80E48, 80851, 80857 and 80858, which claims constitute part of the subject property. A considerable amount of trenching, stripping and bulk sampling was performed to expose the mineralization.

Burrex Mines Prospecting Syndicate conducted a limited amount of geophysical surveying and trenching on a group of claims southeast of the forementioned copper occurrence. The area explored by Burrex is presently covered by the subject property.

1967 - A group of 54 contiguous claims were optioned by International Bibis Tin Mines Limited, covering the copper occurrence discovered by Nabigon and Thornsteinson. The exploratory work consisted of dip needle and self-potential surveys and the boring of seven (7) drill holes for a total footage of 2,238.

1968 - Geologists of the Ontario Department of Mines mapped the Pukaskwa River area and carried out a stream and spring sediment geochemical survey of the respective area. Results of these surveys are published in Preliminary Map P-506 to 513 inclusive.

Additionally, the Pukaskwa River area has been covered by an Airborne Magnetic Survey conducted jointly by the Ontario Department of Mines and the Department of Mines and Technical Surveys, Ottawa.

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ECONOMIC GEOLOGY

Chalcopyrite (copper) mineralization occurs mainly in an interbanded sequence of sediments and felsic volcanics in contact with metabasic lavas in the area common to claims SSM-80848, 80851, 80857 and 80858. A fault zone trends along this contact area and it appears to be the controlling structure. In addition to chalcopyrite and pyrite, minor sphalerite (zinc) is present. Shearing and brecciation appear to be the main structural control of the mineralization. There is strong evidence that much of the pyrite is stratabound or of syngenetic origin and probably these zones of pyrite may have acted as collectors or focal points for latter copper-zinc mineralization.

Silicification and carbonatization are the main secondary non-metallic alteration minerals.

The copper mineralized zone strikes about N60° West, astronomic, and dips 80° - 85° to the north. The known length of the mineralized zone is about 500 feet and may extend for a greater distance.

AIRBORNE GEOPHYSICS

Harlow Wright, P. Eng., recently completed a combined airborne electromagnetic, magnetometer and gamma ray spectrometer survey on the 80 claim property which is now owned by King Island Mines Limited. The survey was flown by Canadian Aero Mineral Surveys Limited. The survey was flown with flight lines orientated in a north-south direction and spaced at 1/16 mile intervals.

A total of eleven (11) zones of conductivity were outlined, as well as several strong magnetic features.

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A discussion of the characteristics and possible cause of the electromagnetic conductors are as follows:

Conductor 1 - This conductor occurs on claims 231986 and 231987. It is about 1100 feet in length and it is open in an easterly direction. The conductor exhibits good conductivity characteristics and it is associated with a low magnetic response.

The conductor is situated along a contact zone between metabasic lavas and sediments.

This conductor is probably due to massive, non-magnetic sulphide mineralization. The anomaly is considered to be a top priority target for further investigation.

Conductor II - This conductor lies about 600 feet west of Conductor I. The strike of the conductor appears to be northwest - southeast, almost 90° to the trend of Conductor I. There is a distinct possibility that this conductor zone consists of several conductive bands and consequently, the assumed strike may be in error. The conductor exhibits excellent conductivity features and it is associated with a low magnetic response.

The anomaly is situated primarily in the metabasic lavas, immediately to the north of the metabasic lava - sediment contact.

The cause of the anomaly is probably due to massive, non-magnetic sulphides, although graphite should not be ruled out.

Conductor III - This conductor occurs almost entirely on claim SSM-80852. It is 2000 feet in length. It exhibits good to excellent conductivity characteristics and good direct magnetic correlation.

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The conductor is located along the contact of metabasic volcanics and sediments. The cause of this anomaly is probably due to massive sulphides rather than graphite.

Conductor IV - This conductor is located on claim SSM-80851. It is about 700 feet in length and it is situated in the metabasic lava complex. The conductor exhibits fair to good conductivity and there is good direct magnetic response with the west part of the zone. The east part of the zone lies on the north edge of a circular magnetic closure. The diversity in magnetic correlation may, in part, be explained by the fact that the conductive zone may be composed of two conductors rather than a continuous one.

The characteristics of this anomaly appear to be due to massive sulphide mineralization rather than to graphitic material.

Conductors V to XI - These conductors are located in the north part of the subject property. All conductors, excepting V, are situated in a metasediment complex containing iron formation. Individual conductors show good conductivity features and high, direct magnetic correlation. Although the present correlation is that conductor V is a folded segment of conductor VII, in reality, it may be a separate entity. The conductor appears to lie in a metabasic lava sequence, although there is a possibility that the southerly contact of the metasediment belt occurs farther south than previously geologically mapped.

Conductors V to X are interpreted to be caused by bedded sulphide deposits and/or graphitic sediments conformable with lean iron

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formations.

Conductor zone XI is a one line out-of-phase response, located in claim SSM-81511. The corresponding weak in-phase response, suppressed by magnetic permeability effects, implies that the anomaly is probably due to graphite or sulphides in a lean band of iron formation.

In summary, conductors I to V inclusive are rated much higher than the other anomalies and consequently, should receive top priority in any follow-up program. However, anomalies VI to XI should also be investigated.

GEOCHEMISTRY

The Ontario Department of Mines performed a geochemical survey of the Pukaskwa River area. Stream and spring sediments were collected from the main channels of rivers and streams and from rivulets flowing from springs and seeps. After extraction of a sample from the dried -80 mesh sieve fraction and digestion by hot HCL-HNO₃, the copper, nickel, zinc, cobalt and manganese content were determined by atomic absorption spectrophotometry.

In this reconnaissance survey, only one creek was sampled on the subject acreage. This creek lies immediately north of the conductors I to IV inclusive and to the east of the copper occurrence. It primarily drains the high land along which the forementioned conductors are situated.

Anomalous values in copper, zinc, nickel, cobalt and manganese were recorded in the sediments from this stream.

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Consequently, airborne conductors I to IV must be upgraded because of this geochemical association.

MINERAL DEPOSITS and THEIR STATE of DEVELOPMENT

As mentioned earlier in the report, copper mineralization occurs on the property in the area common to claims SSM-80848, 80851, 80857 and 80838. Chalcopyrite, associated with pyrite mineralization, occurs in shears and fills open spaces in brecciated meta-sediments and felsic volcanics. The overall confining structure is a fault zone, trending N60°W, astronomic and dipping steeply in a north direction.

International Bibis Tin Mines Limited investigated the mineralized zone with seven (7) diamond drill holes and the salient copper content obtained in these holes are as follows:

<u>Hole No.</u>	<u>From</u>	<u>To</u>	<u>Core Length</u>	<u>Assay % Cu</u>	<u>Remarks</u>
PK-1	140.0	150.0	10.0 feet	0.91	
PK-2	131.0	166.7	35.7 feet	0.44	100' NW of PK-1
	176.0	181.0	5.0 feet	2.30	
	181.0	196.0	15.0 feet	0.71	
PK-3	123.0	128.5	5.5 feet	0.90	100' NW of PK-2
	202.5	213.0	10.5 feet	1.15	
PK-4	158.0	165.0	7.0 feet	1.17	100' NW of PK-3
PK-5	286.0	302.0	16.0 feet	1.47	50' NW of PK-2
PK-6	285.0	295.0	10.0 feet	0.58	Below Hole PK-2
	310.0	315.0	5.0 feet	0.58	
PK-7	Only Low Values				200' SE of PK-1

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Minor sphalerite (zinc) mineralization was noted in holes PK-5 and PK-7. The above drilling indicates a minimum strike length of 500 feet to the copper bearing zone. It would appear that it is open in a northwest and southeast direction.

The copper bearing zone investigated by Burrex Mines Prospecting Syndicate lies about 4000 feet southeast of the International Bibis drilling. It is possible that the Burrex mineralization may be confined to the fault zone which hosts the forementioned copper mineralization.

There was no airborne electromagnetic response over the copper bearing structure. The respective flight lines pass to either side of the known position of mineralization and consequently, accounts for the lack of response. On the other hand, it can be concluded that the mineralization is of limited strike length or that the overall sulphide content is far too low to be a genuine conductor. Bands of graphitic sediments were logged in holes PK-1, PK-2 and PK-6 and not in any of the other holes.

ASSESSMENT of the EXPLORATION POSSIBILITIES on the HOLDINGS of KING ISLAND MINES LIMITED

The copper mineralization on the property appears to be fault controlled. The grade and widths of the various intersections obtained in past drilling are far too low and narrow to constitute a mineable ore deposit. A search along strike of this fault structure is warranted as the possibility of better quality and quantity of copper mineralization may exist. This search is justified even though negative results were

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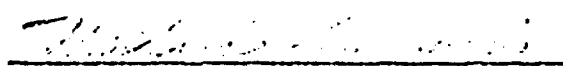
obtained in the airborne survey over this structure.

The airborne electromagnetic conductive zones outlined generally all exhibit qualities diagnostic as caused by sulphide mineralization rather than non-metallic conductive material. The conductive zones are situated in a favourable geological environment for hosting economic mineral deposits.

The airborne anomalies outlined are considered top priority targets for further exploration.

A continued diligent search of the King Island Mines Limited holdings, in the Pukaskwa River area, for economic mineral deposits, is definitely warranted.

Respectfully submitted,


Michael Zurowski, B.Sc., P.Eng.

REFERENCES

1. Report on diamond drilling of Pukaskwa River property for International Bibis Tin Mines Limited by D.W. Sullivan, B.Sc., P.Eng. April 10, 1967.
2. Report on Pukaskwa River Grubstake property (Nabigon - Thorsteinson Copper Discovery), Pukaskwa River area; Thunder Bay District; Ontario by S. Waisberg, M.A.Sc., P.Eng. Sept. 8, 1966.
3. Airborne Geophysical Survey in the Pukaskwa River area of Ontario by Canadian Aero Mineral Surveys Limited - Project No. 015. December 23, 1969.
4. Ontario Department of Mines Preliminary Geological and Geochemical Maps No. 506 to 513 inclusive.

Toronto 1, Ontario

January 9, 1970.

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CERTIFICATE

I, Michael Zurowski, of the City of Toronto in the Province of Ontario, hereby certify as follows:

1. That I am a practising Geological Engineer with offices at 34 Adelaide Street West; Toronto 1, Ontario.
2. That I am a graduate of the University of Saskatchewan; Saskatoon, Saskatchewan; hold the degree of B.Sc., in Geological Engineering and I am a member of the Association of Professional Engineers of the Province of Ontario.
3. That I have no interest either directly or indirectly and I do not expect to receive any interest either directly or indirectly in the property or securities of King Island Mines Limited.
4. That the accompanying report is not based on a personal examination of the property, but upon information obtained from reports, publications, etc. listed in this report under references. A physical examination of the subject acreage would not be practical at this time due to winter conditions.
5. That this certificate applies to a group of claims numbered SSM-80846 to 80861 inclusive; SSM-81156 to 81172 inclusive; SSM-81505 to 81522 inclusive and 231972 to 232000 inclusive, all located in the Pukaskwa River Area; DISTRICT OF THUNDER BAY; in the Province of Ontario.

Dated at Toronto, Ontario, this 9th day of January, 1970.

Michael Zurowski, B.Sc., P.Eng.

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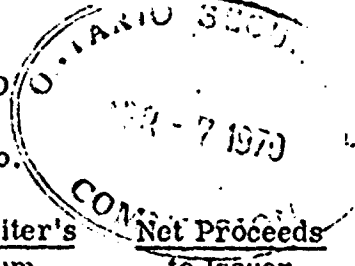
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PROSPECTUS DATED January 31, 1970.

KING ISLAND MINES LIMITED

A mining company incorporated under the laws of the Province of Ontario
(hereinafter called the Company)

CABIRI INVESTMENTS LIMITED
(Underwriter - Optionee)
366 Bay Street, Toronto, Ontario.



NEW ISSUE

<u>No. of Shares</u>	<u>Maximum Offering Price to Public</u>	<u>Underwriter's Maximum Gross Profit</u>	<u>Net Proceeds to Issuer</u>
200,000 (Underwritten at 15¢ per share)	at 22¢ per share (\$ 44,000.00)	\$ 14,000.00	\$ 30,000.00
100,000 (Optioned at 20¢ per share)	at 30¢ per share (\$ 30,000.00)	\$ 10,000.00	\$ 20,000.00
100,000 (Optioned at 25¢ per share)	at 35¢ per share (\$ 35,000.00)	\$ 10,000.00	\$ 25,000.00
200,000 (Optioned at 30¢ per share)	at 45¢ per share (\$ 90,000.00)	\$ 30,000.00	\$ 60,000.00
100,000 (Optioned at 35¢ per share)	at 50¢ per share (\$ 50,000.00)	\$ 15,000.00	\$ 35,000.00
<u>700,000</u>	<u>\$249,000.00</u>	<u>\$ 79,000.00</u>	<u>\$170,000.00</u>

Cabiri Investments Limited has agreed to anticipate on the effective date payment for 62,500 of the shares optioned at 20¢ per share. Save for this agreement, there is no obligation nor is there any assurance that the balance of the optioned shares will be purchased. (See PLAN OF DISTRIBUTION).

SECONDARY OFFERING

272,713 shares, the proceeds of which will accrue to Cabiri Investments Limited, Tilal Investments Limited, Ciglen Investments Limited, Sol Waisberg, Peter Nabigon, David Thorsteinson, Steve Hrymnak and John Pollock and not to the treasury of the Company. (See sections headed SECONDARY OFFERING and PRINCIPAL HOLDERS OF SHARES).

All of the shares being offered will be sold through registered dealers who will be acting as agents and will be paid commissions not exceeding 25% of the selling price of such shares.

The purpose of this issue is to secure funds for the general operating expenses of the Company as referred to herein and particularly to provide the Company with funds to implement the exploration and development program on its Pukaskwa Property. (See section PUKASKWA PROPERTY).

There is no market for the shares of the Company.

THESE ARE SPECULATIVE SECURITIES.

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No Securities Commission or similar authority in Canada has in any way passed upon the merits of the securities offered hereunder and any representation to the contrary



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PURCHASER'S STATUTORY RIGHTS OF WITHDRAWAL AND RESCISSION

The Securities Act, 1966 (Ontario) contains (Sections 63 and 64) certain provisions enabling a purchaser of securities offered in the course of primary distribution to rescind the contract of purchase while the purchaser is still the owner of the securities, (a) if the Prospectus and any amended Prospectus, as of the date of receipt by the purchaser, contains an untrue statement of a material fact or omits to state a material fact in order to make any statement contained therein not misleading in the light of the circumstances in which it was made, but only if action is commenced within 90 days from the last to occur of the receipt of the Prospectus or amended Prospectus or contract of purchase; and (b) if the person or company from whom the securities were purchased is notified in writing or by telegraph of the purchaser's intent to rescind not later than midnight of the second day, exclusive of Saturdays, Sundays and holidays, after receipt by the purchaser of the Prospectus or amended Prospectus.

A Prospectus or amended Prospectus sent by prepaid mail is deemed conclusively to be received in the ordinary course of mail. The receipt thereof by a person or company acting as agent or who thereafter commences to act as agent of the purchaser shall be receipt by the purchaser as of the date of the agent's receipt thereof; however, for purpose of the foregoing, a person or company is not considered to be acting as agent of the purchaser unless the person or company is acting solely as an agent of the purchaser and has not received and has no agreement to receive compensation from or on behalf of the vendor with respect to the purchase and sale. This right of rescission is not available to a registrant or to a purchaser who sells or otherwise transfers beneficial ownership of the securities purchased before the expiration of the time within which rescission may be effected.

Reference should be made to the said Act for the complete text of the provisions under which the foregoing rights are conferred.

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INTRODUCTORY STATEMENT

The Company has its head office at Suite 505, 67 Richmond Street West, Toronto, Ontario: The Company was incorporated as a public mining company under Part IV of The Corporations Act (Ontario) by Letters Patent dated the 15th day of June 1967 for the purpose of acquiring and carrying on the exploration and development of mining claims and properties.

PUKASKWA PROPERTY

Pursuant to an Agreement made and entered into as of the 11th day of November 1969 between Samuel Ciglen Q.C., Suite 400, 67 Richmond Street West, Toronto, acting on behalf of all members of the Pukaskwa River Grubstake, as the Vendor, the Company as the Purchaser, and Harlow Hutchins Wright P. Eng.; 105 St. Leonards Avenue, Toronto, Ontario (hereinafter Wright), the Company acquired a group of 51 unpatented mining claims in the Pukaskwa River Area, Sault Ste Marie Mining Division, Province of Ontario, which claims are duly recorded in the Office of the Mining Recorder for the said Mining Division at Sault Ste Marie as claim numbers SSM 80846 to SSM 80861 inclusively, SSM 81156 to SSM 81172 inclusively and SSM 81505 to SSM 81522 inclusively. Wright had caused an airborne geophysical survey and other work to be carried out on the claims to satisfy a minimum of 80 days assessment work on each of the claims. Such assessment work having been performed, Wright became entitled to an undivided 23¹/₃% interest in the claims.

In December 1969 the Company caused to be staked on its own behalf at a cost of \$2,080 an additional 29 claims in the Pukaskwa River Area adjoining the Company's original group of 51 claims. These mining claims are recorded in the Office of the said Mining Recorder at Sault Ste Marie, Ontario, as claim numbers 231972 to 232000 inclusively.

Wright, Ciglen Investments Limited, Suite 400, 67 Richmond Street West, Toronto, Ontario (hereinafter Ciglen), and Sol Waisberg, 301 Anderson Street, Whitby, Ontario (hereinafter Waisberg), expended at least \$16,742 in prospecting for and exploring mineral occurrences on the said 80 claims (hereinafter the Pukaskwa Property) including a considerable amount of surface prospecting, trenching, stripping, bulk sampling and the carrying out of a combined airborne electromagnetic, magnetometer and gamma ray spectrometer survey.

The consideration paid by the Company for the said group of 51 claims was as follows:

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- (a) 750,000 fully paid and non-assessable shares in the capital of the Company of which shares 675,000 are being held in escrow on the terms set out in the section headed ESCROWED SHARES.
 - (b) The allotment and issue of 111,613 fully paid and non-assessable shares at the rate of 15¢ per share as follows: Ciglen 48,031 shares, Waisberg 24,743 shares, Tilal Investments Limited, Suite 505, 67 Richmond Street West, Toronto, (hereinafter Tilal) 38,839 shares. These shares were issued in reimbursement to Ciglen, Waisberg and Wright for the costs and expenses incurred by or on their behalf in carrying out the aforesaid exploration work. (The shares held by Tilal were issued to it on the direction of Wright).
 - (c) Options to purchase (subsequently exercised) in the aggregate 52,500 fully paid and non-assessable shares in the capital of the Company at the price of 15¢ per share

to four of the members of the Pukaskwa River Grubstake; namely Peter Nabigon, 31 Park Boulevard, Toronto, Ontario (hereinafter Nabigon) 21,000 shares, David Thorsteinson, 113 South Clarkson Street, Port Arthur, Ontario (hereinafter Thorsteinson) 10,500 shares, Steve Hrymnak, 447 Oliver Road, Port Arthur, Ontario (hereinafter Hrymnak) 10,500 shares and John Pollock, P.O. Box 882, Haileybury, Ontario (hereinafter Pollock) 10,500 shares. Cabiri Investments Limited, 366 Bay Street, Toronto, Ontario, loaned to Nabigon, Thorsteinson, Hrymnak and Pollock the moneys required to exercise the aforesaid options.

Ciglen, Waisberg and Wright acquired their respective interests in the group of 51 claims aforementioned under arrangements made with prospectors to pay the costs and expenses of and incidental to prospecting and exploration work to be carried out on said claims and paying such costs and expenses. Prior to the expenditures by or on behalf of Wright, Ciglen and Waisberg aforementioned aggregating \$16,742.00, Ciglen and Waisberg paid \$5,700 towards the costs and expenses of prospecting for minerals in the area, resulting in the staking and recording of the said 51 claims. Ciglen, Waisberg, Nabigon, Thorsteinson, Hrymnak and Pollock are the only members of the Pukaskwa River Grubstake and are the only persons having a greater than 5% interest in the said grubstake.

To the knowledge of the signatories hereto Ciglen, Waisberg, the Vice-President and a director, Wright, the President and a director, Nabigon, Thorsteinson, Hrymnak and Pollock are the only persons entitled to a greater than 5% interest in the vendor consideration. The only persons having a greater than 5% interest in Ciglen are Samuel Ciglen and his wife, Bebe Ciglen, both of 400 Walmer Road, Toronto, and their children Patricia Fleisher, 25 Sandfield Road, Willowdale, Ontario, Ina Gilbert, 265 Upper Highland Crescent, Willowdale, Ontario, Rhoda Rosen, 12 Sandfield Road, Willowdale, Ontario and Phyllis Wengle, 2911 Bayview Avenue, Willowdale, Ontario. The only persons having a greater than 5% interest in Tilal are Wright, his wife Joan Lydia Wright and their children Rodney Hutchins Wright, Lois Mary Wright, Stuart Ramsay Wright, Janet Barbara Wright, David Gordon Wright and Ian Alexander Wright, all of 105 St. Leonards Avenue, Toronto, Ontario. Gordon Joseph Ciglen, 302 Roselawn Avenue, Toronto, the Secretary-Treasurer and a director of the Company is also the Secretary of Ciglen, one of the parties having a greater than 5% interest in the vendor consideration.

Property Location and Access

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The Pukaskwa Property consists of a contiguous group of 80 unpatented mining claims comprising approximately 3,200 acres, located in the Pukaskwa River Area, Sault Ste Marie Mining Division, District of Thunder Bay, in the Province of Ontario. The Pukaskwa Property is situated about 40 miles west-northwest of Wawa, Ontario. Wawa is situated on Highway #17 about 120 miles due north of Sault Ste Marie. Access to the Pukaskwa Property is best achieved by chartered aircraft or helicopter from Wawa, Ontario. There is a privately owned lumber road from Highway #17 to Iron Lake, a distance of 15 miles from the Pukaskwa Property.

Title and Status

The 80 claims comprising the Pukaskwa Property are recorded in the names of the stakers or in the name of Samuel Ciglen in trust, and duly executed transfers of same are in the possession of the Company. Sufficient assessment work credit has been filed with the Mining Recorder at Sault Ste Marie, Ontario to keep 16 of the claims in good standing until July 4, 1970, 17 of the claims in good standing until July 21, 1970 and 18 of the claims in good standing until August 8, 1970. The remaining 29 claims are in good standing until December 10, 1970. No survey has been made of any of the 80 claims and until such survey is made the boundaries of such claims could be in doubt.

The following is a brief history of the exploration activities and the exploratory work conducted on the Pukaskwa Property :

In 1966 copper mineralization was discovered in an area east of the east branch of the Pukaskwa River by prospectors Peter Nabigon and David Thorsteinson of Port Arthur, Ontario. The occurrence falls in the area common to claims SSM 80848, 80851, 80857 and 80858, which claims constitute part of the Pukaskwa Property. A considerable amount of trenching and stripping, some bulk sampling and a self-potential survey on a portion of the claims, was performed by the said prospectors on behalf of the Pukaskwa River Grubstake. Burrex Mines Prospecting Syndicate conducted a limited amount of geophysical surveying and trenching on a group of claims southeast of the aforementioned copper occurrence now forming part of the Pukaskwa Property.

In 1967 International Bibis Tin Mines Limited expended \$31,469.33 in exploratory work on some of the said claims, including the drilling of seven (7) drill holes for a total footage of 2,238 feet.

In 1968 geologists of the Ontario Department of Mines mapped the Pukaskwa River Area and carried out a stream and spring sediment geochemical survey of the area. Additionally, the Pukaskwa River Area has been covered by an Airborne Magnetic Survey conducted jointly by the Ontario Department of Mines and the Department of Mines and Technical Surveys, Ottawa.

In 1969 Wright caused Canadian Aero Mineral Surveys Limited to carry out a combined airborne electromagnetic, magnetometer and gamma ray spectrometer survey over the Pukaskwa Property. A total of 11 zones of conductivity were outlined by the survey as well as several strong magnetic features.

While the information obtained from the exploration work aforesaid will be utilized to the advantage of the Company in the further exploration of the property, no work has as yet been performed on the Pukaskwa Property by the present management. However, a contract has been let for line cutting preparatory to a ground geophysical survey and geological mapping.

There is no underground nor surface plant and equipment on the Pukaskwa Property.

The Pukaskwa Property is without a known body of commercial ore and the proposed development program referred to in this section headed PUKASKWA PROPERTY and in the section USE OF PROCEEDS is an exploratory search for ore which is an undertaking involving a significant risk of loss.

The following is a summary of a Report of the Company's Engineer, Michael Zurowski, B.Sc., P.Eng., dated January 9, 1970 which Report is available for inspection on the files of the Ontario Securities Commission.

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Pukaskwa Property is located in the west segment of the Kabening Lake-
 River belt of metavolcanic and meta sediments, near the south margins
 of the enclosing granitic rocks. This sequence of geological formations is
 considered favourable to hosting economic mineral deposits. There is a copper
 occurrence on the property and the confining structure is a fault zone, trending
 N60°W and dipping steeply north. International Bibis Tin Mines Limited put down
 seven drill holes to investigate the occurrence. Although interesting copper assays
 were obtained in the drilling, the overall quantity and quality of the mineralization
 was below economic limits. The fault structure, which may host other mineralized
 zones, merits further exploratory work. Combined airborne electromagnetic and
 magnetic surveys were completed over the Pukaskwa Property. The surveys
 revealed eleven (11) zones of electrical conductivity. Most of the anomalies have
 coincident supporting magnetic correlation. These conductors are considered to
 be caused by sulphide mineralization rather than non-metallic conductive material.

Four of the eleven conductive zones are located in the south segment of the property,
 immediately to the east of the copper occurrence. Sampling of the stream of sedi-
 ments from a river which drains this area revealed anomalous quantities of copper,
 zinc, nickel and cobalt.

No geochemistry was conducted in the north segment of the property where the
 remaining six conductive zones are located. The geological environment hosting
 these six conductive zones is primarily a metasediment complex containing lean
 iron formation.

The airborne anomalies are considered top priority targets for further exploration.

Conclusions

A comprehensive and detailed exploratory program to investigate the many geo-
 physical anomalies and the copper bearing fault structure on the Pukaskwa Property,
 for economic concentrations of base metal and/or precious metal mineralization,
 is definitely warranted.

Recommendations and Costs

The following two-stage exploratory program is recommended to investigate the
 Pukaskwa Property.

Stage 1: Electromagnetic and magnetic surveys should be conducted over the copper
 bearing fault structure and those segments of the property containing airborne ano-
 malous zones. The segments of the property covered by the said geophysical surveys
 should be mapped geologically in detail and a soil sampling program be initiated in
 those segments of the area covered by the above surveys which lends itself to this
 type of investigation. The cost of completing Stage 1 is estimated at \$16,000.00.

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Stage 2: This stage of the exploratory work would consist of trenching and a minimum of 3,000 feet of diamond drilling to investigate the salient features outlined in the geophysical, geological and geochemical surveys. The implementation and the extent to which Stage 2 is carried out would depend upon the evaluation of the results of the exploratory work performed in Stage 1 and the availability of funds therefor. The estimated cost of carrying out Stage 2 is \$55,000.00.

PLAN OF DISTRIBUTION

The Company entered into an Agreement made as of the 30th day of January 1970 as amended, with Cabiri Investments Limited, 366 Bay Street, Toronto, Ontario (hereinafter Cabiri) whereunder Cabiri acting on its own behalf and for its own account agreed to purchase the following shares of the Company.

<u>Number of Underwritten Shares</u>	<u>Underwritten Shares Price per Share</u>	<u>Amount to be received by the Company</u>
200,000	15 ¢	\$ 30,000.00

The purchase price in the amount of \$30,000 is payable within three business days after the date upon which the Ontario Securities Commission issues its final receipt for a Prospectus of the Company reflecting the Underwriting and Option Agreement, which said date is hereinafter referred to as the effective date.

<u>Number of Optioned Shares</u>	<u>Optioned Shares Price per Share</u>	<u>Time within which option is exercisable from effective date</u>
100,000	20 ¢	3 months
100,000	25 ¢	6 months
200,000	30 ¢	9 months
100,000	35 ¢	12 months
<u>500,000</u>		

Cabiri has agreed to anticipate on the effective date payment for 62,500 of the shares optioned to it at 20¢ per share. Cabiri has the right and option to purchase the whole or any part of the balance of the optioned shares within the times above set out. The option will terminate if Cabiri is in default for a period of 15 days after receipt by Cabiri from the Company of written notice thereof. If Cabiri defaults in exercising its option, an Amendment to this Prospectus must be filed with the Ontario Securities Commission within 10 days of such default if the shares of the Company are still in the course of primary distribution.

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It is provided in the said Agreement, among other things, that the Company shall not while the option therein is in full force and effect, without the prior written consent of Cabiri, alter its capital structure, create or issue any bonds, debentures, notes or other securities, increase or decrease the number of its directors, transfer, sell or otherwise dispose of all or substantially all of its assets except in the ordinary course of business or create or permit any lien or encumbrance on the property to remain undischarged for a period of more than 30 days.

Cabiri has advised the other signatories hereto that there is no assignment, sub-option or sub-underwriting or proposed assignment, sub-option or sub-underwriting with respect to the underwritten and optioned shares.

It is impracticable at this time to state the price to the public of the shares offered hereby. The said shares will be offered from time to time at the prevailing market price within the maximum offering prices as set out on the cover page under the heading NEW ISSUE.

All shares offered hereunder will be sold through registered dealers.

Cabiri may bid for and purchase shares of the Company in an effort to maintain an orderly market. Any such bid may be withdrawn at any time and there is no guarantee or assurance that any of the shares of the Company purchased pursuant to this offering or otherwise may be sold.

Cabiri has advised the other signatories hereto that the only persons having a greater than 5% interest in Cabiri are Wilbert Finley Johnson and his wife, Miriam Pearl Johnson, both of Manorpark Crescent, Willowdale, Ontario.

SECONDARY OFFERING

The following are the shareholders who may sell in the aggregate 272,713 shares as a Secondary Offering hereunder : Cabiri 177,713 shares, Tilal 27,500 shares, Ciglen 17,500 shares, Waisberg 27,500 shares, Nabigon 9,000 shares, Thorsteinson 4,500 shares, Hrymnak 4,500 shares and Pollock 4,500 shares. The 177,713 shares offered by Cabiri have been optioned to it by the following shareholders, namely Tilal 28,839 shares, Ciglen 81,631 shares, Waisberg 14,743 shares, Nabigon 21,000 shares, Thorsteinson 10,500 shares, Hrymnak 10,500 shares and Pollock 10,500 shares, at the price of 30¢ per share exercisable in whole or in part within 60 days from the effective date. Any of the 177,713 shares not purchased by Cabiri may be offered for sale by the said shareholders in accordance with their respective holdings.

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ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

63

To the Recorder of SAULT STE MARIE Mining Division

I, SAMUEL CIGLEN A 17200 name of Recorded Holder Miner's Licence Suite 400, 67 Richmond Street West, Toronto, Ontario Post Office Address

do hereby report the performance of 2,040 days of Airborne E.M. Survey type of work

not before reported to be applied on the following contiguous claims See Schedule A attached

Table with 6 columns: Claim No., Days, Claim No., Days, Claim No., Days. Includes handwritten notes and a 'RECEIVED' stamp dated MAR 24 1970.

All the work was performed on Mining Claim (s) See Schedule "A" attached. (In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations - Names and addresses of the men who performed the work and the dates and hours of their employment. For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate. For Compressed Air or Other Power Driven or Mechanical Equipment Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment. For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording. With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate. For Geological and Geophysical Survey - The names and addresses of men employed as well as dates. Type of instrument used in the case of geophysical survey. Reports and maps in duplicate must be filed with the Minister within 60 days of recording. For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

The Airborne E.M. Survey was performed by Canadian Aero Minerals Surveys Limited of Ottawa, Ontario.

The above survey was flown on October 21, 1969.

The names and addresses of men employed are as per Schedule "B" attached.

Date February 5, 1970

Signature of Recorded Holder or Agent

ASSESSMENT WORK The Mining Act Certificate Verifying Report of Work

I, Robert W. Stemp, P. Eng., Chief Geophysicist 17 Welkin Crescent, Ottawa 5, Ontario (Post Office Address)

hereby certify:

- 1. That I have a personal and intimate knowledge of the facts set forth in the report of work annexed hereto, having performed the work or witnessed same during and/or after its completion. 2. That the annexed report is true.

Dated February 9, 1970

Signature

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH

SCHEDULE "A"

<u>CLAIM NO.</u>	<u>DAYS</u>	<u>CLAIM NO.</u>	<u>DAYS</u>
SSM 80846	40	SSM 81166	40
" 80847	40	" 81167	40
" 80848	40	" 81168	40
" 80849	40	" 81169	40
" 80850	40	" 81170	40
" 80851	40	" 81171	40
" 80852	40	" 81172	40
" 80853	40	" 81505	40
" 80854	40	" 81506	40
" 80855	40	" 81507	40
" 80856	40	" 81508	40
" 80857	40	" 81509	40
" 80858	40	" 81510	40
" 80859	40	" 81511	40
" 80860	40	" 81512	40
" 80861	40	" 81513	40
" 81164	40	" 81514	40
" 81165	40	" 81515	40
" 81156	40	" 81516	40
" 81157	40	" 81517	40
" 81158	40	" 81518	40
" 81159	40	" 81519	40
" 81160	40	" 81520	40
" 81161	40	" 81521	40
" 81162	40	" 81522	40
" 81163	40		

SSM-1541

SCHEDULE "B"

NAMES OF PERSONNEL ASSOCIATED WITH PROJECT

G. Curtis	Project Manager
J. Stoa	Pilot
L. May	Aircraft Mechanic
R. Bolivar	Navigator
P. Rautenberg	Electronic Operator
W. Knappers	Data Chief
D. Fitzsimmons	Chief Draftsman
D. R. Vohra	Geophysicist

ALL ADDRESSES:

C/O Canadian Aero Minerals Surveys Limited
Ottawa,
Ontario.

82-15414



ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

#64

To the Recorder of SAULT STE MARIE Mining Division

I, SAMUEL CIGLEN A 17200 name of Recorded Holder Miner's Licence

Suite 400, 67 Richmond Street West, Toronto, Ontario. Post Office Address

do hereby report the performance of 2,040 days of Airborne Magnetometer Survey type of work

not before reported to be applied on the following contiguous claims See Schedule A attached

Claim No. Days Claim No. Days Claim No. Days

RECEIVED MAR 24 1970

NOT TO BE REMOVED FROM THE OFFICE OF THE RESIDENT GEOLOGIST, ONT. DEPT. OF MINES SAULT STE. MARIE, ONT.

Plan M. 13

RESIDENT GEOLOGIST SAULT STE. MARIE

All the work was performed on Mining Claim (s) See Schedule "A" attached (In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations - Names and addresses of the men who performed the work and the dates and hours of their employment. For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate. For Compressed Air or Other Power Driven or Mechanical Equipment Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment. For Power Stripping - Type of equipment, Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording. With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate. For Geological and Geophysical Survey - The names and addresses of men employed as well as dates. Type of instrument used in the case of geophysical survey. Reports and maps in duplicate must be filed with the Minister within 60 days of recording. For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

The Airborne Magnetometer Survey was performed by Canadian Aero Minerals Surveys Limited of Ottawa, Ontario.

The above survey was flown on October 21, 1969.

The names and addresses of men employed are as per Schedule "B" attached.

Date February 5, 1970

Signature of Recorded Holder or Agent

The Mining Act Certificate Verifying Report of Work

S. S. MARIE MINING DIV.

RECEIVED

I, Robert W. Stemp, P. Eng., Chief Geophysicist

17 Welkin Crescent, Ottawa 5, Ontario (Post Office Address)

FEB 13 1970

hereby certify:

- 1. That I have a personal and intimate knowledge of the facts set forth in the report of work annexed hereto, having performed the work or witnessed same during and/or after its completion. 2. That the annexed report is true.

Dated February 9, 1970

Signature

ASSESSMENT WORK

file on 80846

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH

SCHEDULE "A"

<u>CLAIM NO.</u>	<u>DAYS</u>	<u>CLAIM NO.</u>	<u>DAYS</u>
SSM 80846	40	SSM 81166	40
" 80847	40	" 81167	40
" 80848	40	" 81168	40
" 80849	40	" 81169	40
" 80850	40	" 81170	40
" 80851	40	" 81171	40
" 80852	40	" 81172	40
" 80853	40	" 81505	40
" 80854	40	" 81506	40
" 80855	40	" 81507	40
" 80856	40	" 81508	40
" 80857	40	" 81509	40
" 80858	40	" 81510	40
" 80859	40	" 81511	40
" 80860	40	" 81512	40
" 80861	40	" 81513	40
" 81164	40	" 81514	40
" 81165	40	" 81515	40
" 81156	40	" 81516	40
" 81157	40	" 81517	40
" 81158	40	" 81518	40
" 81159	40	" 81519	40
" 81160	40	" 81520	40
" 81161	40	" 81521	40
" 81162	40	" 81522	40
" 81163	40		

SSM-1541

SCHEDULE "B"

NAMES OF PERSONNEL ASSOCIATED WITH PROJECT

G. Curtis	Project Manager
J. Stoa	Pilot
L. May	Aircraft Mechanic
R. Bolivar	Navigator
P. Rautenberg	Electronic Operator
W. Knappers	Data Chief
D. Fitzsimmons	Chief Draftsman
D. P. Vohra	Geophysicist

ALL ADDRESSES:

C/O Canadian Aero Minerals Surveys Limited
Ottawa,
Ontario.

888-1541



ONTARIO

THE MINING ACT REPORT OF WORK

A separate form is required for each type of work to be recorded.

65

To the Recorder of SAULT STE MARIE Mining Division

I, SAMUEL CIGLEN name of Recorded Holder A 17200 Miner's Licence

Suite 400, 67 Richmond Street West, Toronto, Ontario Post Office Address Airborne Gamma Ray

do hereby report the performance of 1,020 days of Spectrometer Survey type of work

not before reported to be applied on the following contiguous claims See schedule A attached

Table with 6 columns: Claim No., Days, Claim No., Days, Claim No., Days. Includes a 'RECEIVED' stamp dated MAR 24 1970 and a 'RESIDENT GEOLOGIST SAULT STE. MARIE' stamp. Handwritten notes include 'Plan M. 13' and 'Pikes River'.

All the work was performed on Mining Claim (s) See Schedule A attached. (In the case of geological and/or geophysical survey (s) where more than 18 claims are involved attach a schedule)

READ CAREFULLY: THE FOLLOWING INFORMATION IS REQUIRED BY THE MINING RECORDER.

- For Manual Work, Stripping or Opening up of Mines, Sinking Shafts or Other Actual Mining Operations - Names and addresses of the men who performed the work and the dates and hours of their employment.
For Diamond and other Core Drilling - Footage, No. and angle of holes and diameter of core. Name and address of owner or operator of drill. Dates when drilling was done. Signed core log and sketch in duplicate.
For Compressed Air or Other Power Driven or Mechanical Equipment Type of drill or equipment. Names and addresses of men engaged in operating equipment and the dates and hours of their employment.
For Power Stripping - Type of equipment. Name and address of owner or operator. Amount expended. Dates on which work was done. Proof of actual cost must be submitted within 30 days of recording.
With each of the above types of work sketches are required to show the location and extent of the work in relation to the nearest claim post. In the case of diamond or other core drilling the sketch must be submitted in duplicate.
For Geological and Geophysical Survey - The names and addresses of men employed as well as dates. Type of instrument used in the case of geophysical survey. Reports and maps in duplicate must be filed with the Minister within 60 days of recording.
For Land Survey - the name and address of Ontario Land surveyor.

The Required Information is as Follows: (Attach a list if this space is insufficient)

The Airborne Gamma Ray Spectrometer Survey was performed by Canadian Aero Minerals Surveys Limited of Ottawa, Ontario.

The above survey was flown on October 21, 1969.

The names and addresses of men employed are as per Schedule "B" attached.

NOT TO BE REMOVED FROM

THE OFFICE OF THE RESIDENT GEOLOGIST, ONT. DEPT. OF MINES

Date February 5, 1970 SAULT STE. MARIE, ONT.

Signature of Recorded Holder or Agent S. CIGLEN

The Mining Act Certificate Verifying Report of Work

RECEIVED

I, Robert W. Stemp, P. Eng., Chief Geophysicist FEB 13 1970

17 Welkin Crescent Ottawa 5, Ontario (Post Office Address)

hereby certify:

- 1. That I have a personal and intimate knowledge of the facts set forth in the report of work annexed hereto, having performed the work or witnessed same during and/or after its completion.
2. That the annexed report is true.

ASSESSMENT WORK

Dated February 9, 1970 Robert W. Stemp Signature

THE PENALTY FOR MAKING A FALSE STATEMENT IN THIS REPORT AND/OR CERTIFICATE IS \$500. OR SIX MONTHS IMPRISONMENT OR BOTH

SCHEDULE "A"

<u>CLAIM NO.</u>	<u>DAYS</u>	<u>CLAIM NO.</u>	<u>DAYS</u>
SSM 80846	20	SSM 81166	20
" 80847	20	" 81167	20
" 80848	20	" 81168	20
" 80849	20	" 81169	20
" 80850	20	" 81170	20
" 80851	20	" 81171	20
" 80852	20	" 81172	20
" 80853	20	" 81505	20
" 80854	20	" 81506	20
" 80855	20	" 81507	20
" 80856	20	" 81508	20
" 80857	20	" 81509	20
" 80858	20	" 81510	20
" 80859	20	" 81511	20
" 80860	20	" 81512	20
" 80861	20	" 81513	20
" 81164	20	" 81514	20
" 81165	20	" 81515	20
" 81156	20	" 81516	20
" 81157	20	" 81517	20
" 81158	20	" 81518	20
" 81159	20	" 81519	20
" 81160	20	" 81520	20
" 81161	20	" 81521	20
" 81162	20	" 81522	20
" 81163	20		

SSM-1541

SCHEDULE "D"

NAMES OF PERSONNEL ASSOCIATED WITH PROJECT

G. Curtis	Project Manager
J. Stoa	Pilot
L. May	Aircraft Mechanic
R. Bolivar	Navigator
P. Rautenberg	Electronic Operator
W. Knappers	Data Chief
D. Fitzsimmons	Chief Draftsman
D. R. Vohra	Geophysicist

ALL ADDRESSES:

C/O Canadian Aero Minerals Surveys Limited
Ottawa,
Ontario.

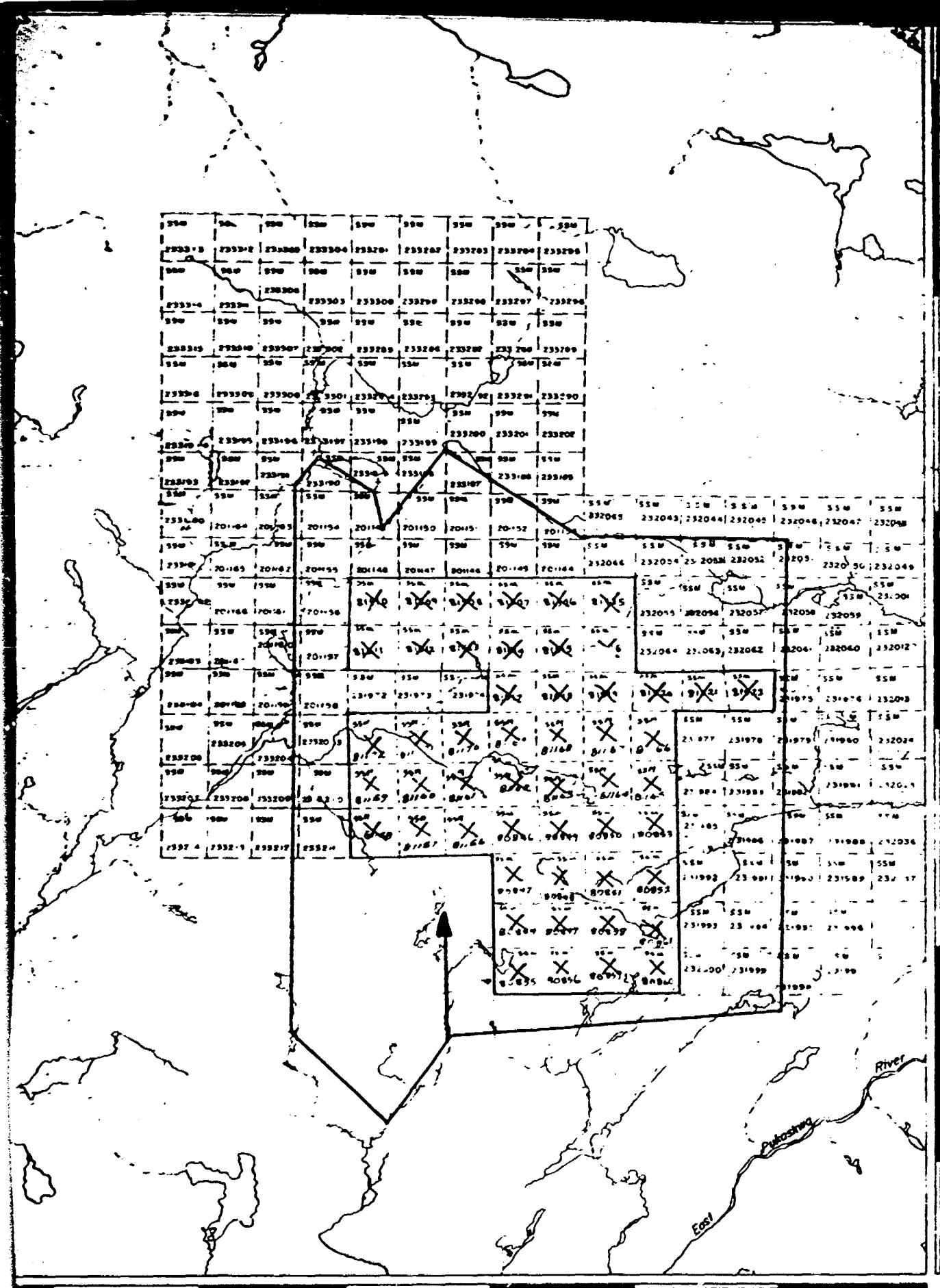
63M-1047

AREA OF
PUKASKWA RIVER

DISTRICT OF
THUNDER BAY

SAULT STE MARIE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS



48°07'30"

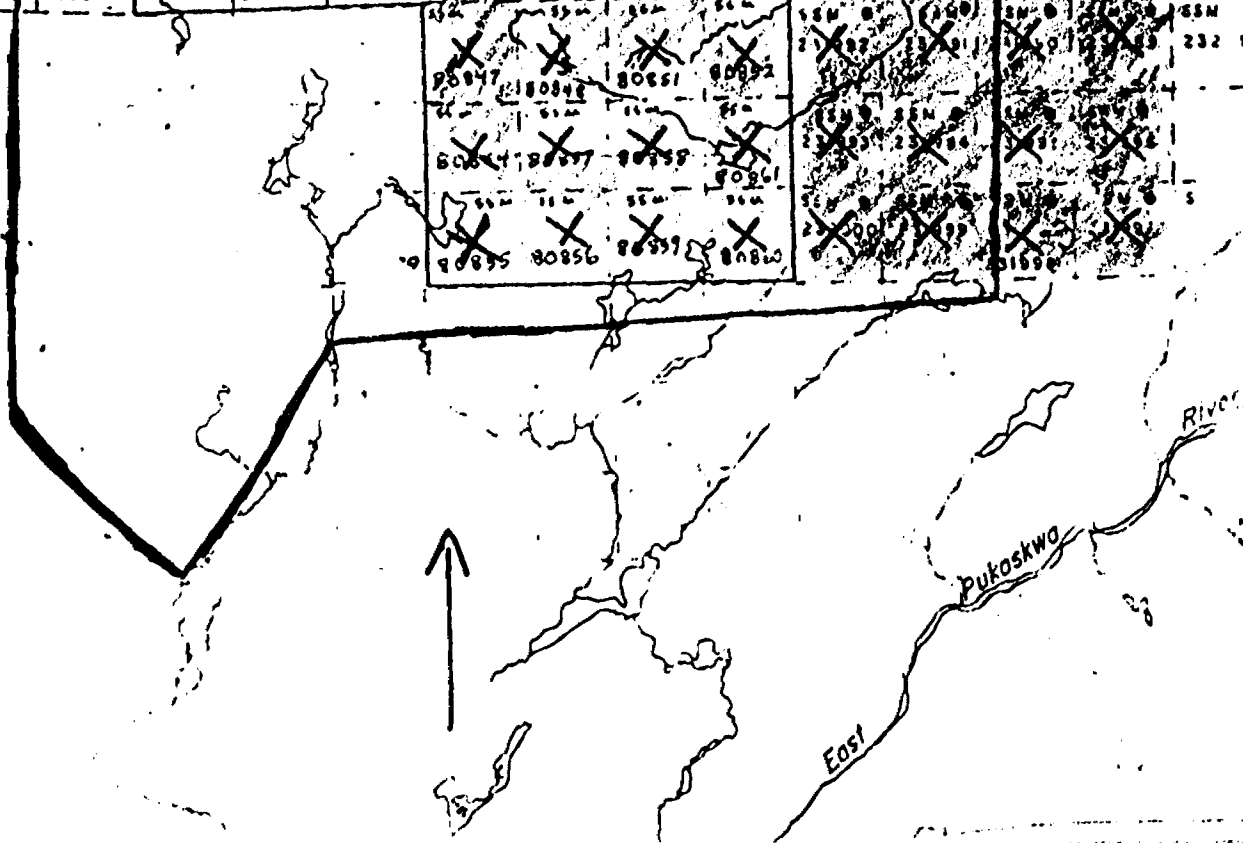
36 35 34 33 32 31 89°30'00"

PLAN NO M-13

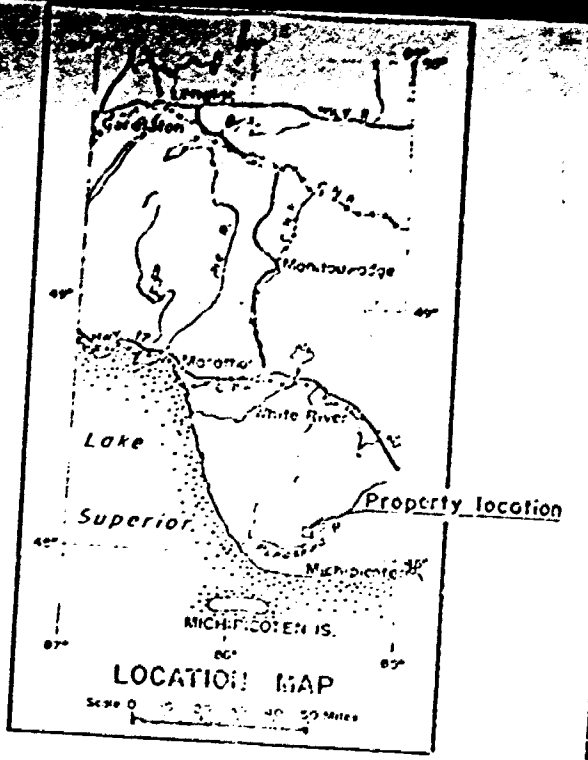
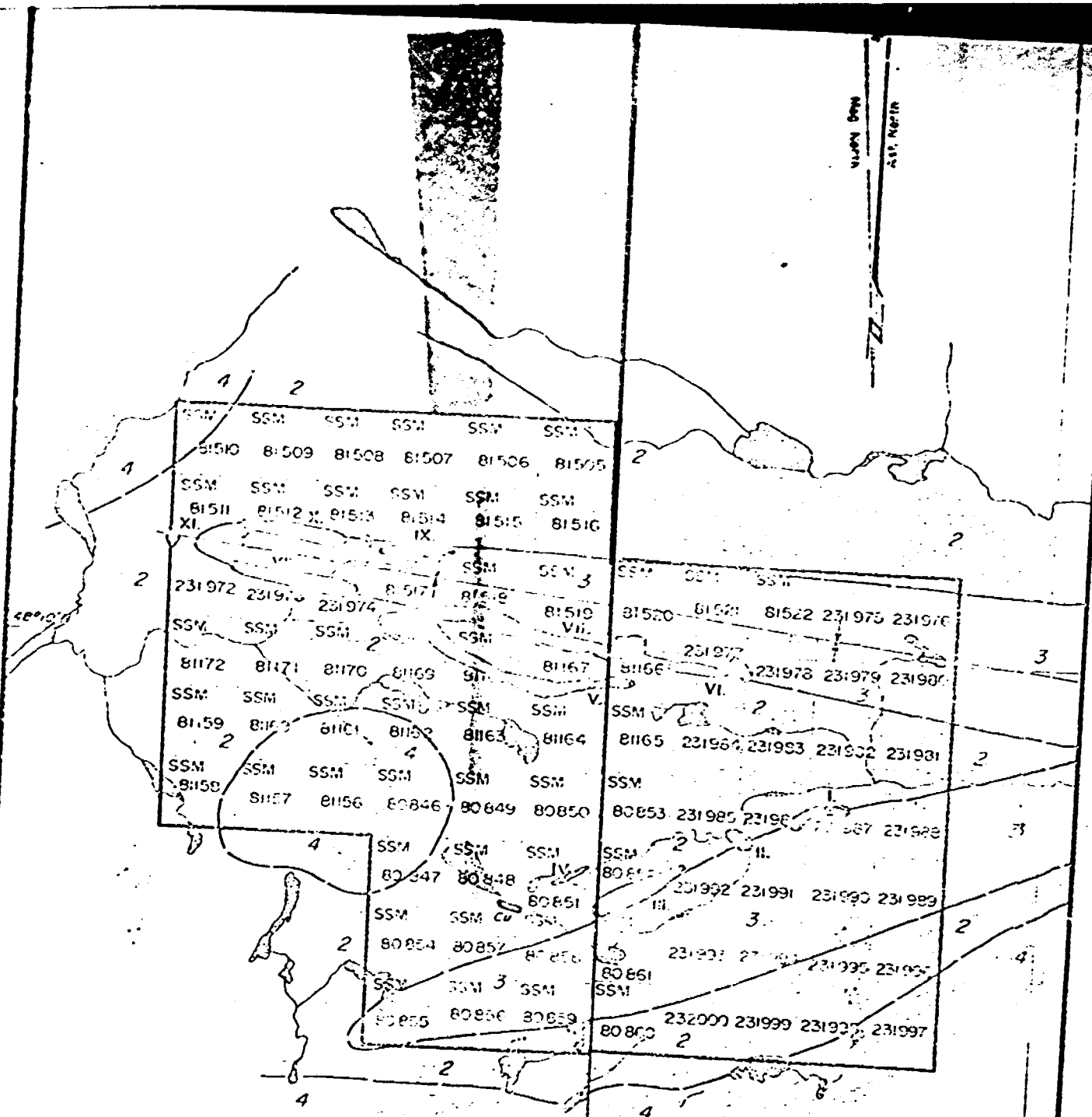
62 2734

SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
233312	233305	233304	233281	233282	233283	233284	233285
SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
233311	233306	233303	233300	233299	233298	233297	233296
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233309	233308	233301	233294	233293	233292	233291	233290
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233206	233204	233210	233209	233210	233211	233212	233213
SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
233214	233211	233211	233212	233213	233214	233215	233216
SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
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233220	233217	233217	233218	233219	233220	233221	233222
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SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
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233293	233290	233290	233291	233292	233293	233294	233295
SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
233298	233295	233295	233296	233297	233298	233299	233300
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233373	233370	233370	233371	233372	233373	233374	233375
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233388	233385	233385	233386	233387	233388	233389	233390
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233398	233395	233395	233396	233397	233398	233399	233400
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SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
233418	233415	233415	233416	233417	233418	233419	233420
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233423	233420	233420	233421	233422	233423	233424	233425
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SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
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233463	233460	233460	233461	233462	233463	233464	233465
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SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
233483	233480	233480	233481	233482	233483	233484	233485
SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
233488	233485	233485	233486	233487	233488	233489	233490
SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
233493	233490	233490	233491	233492	233493	233494	233495
SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM
233498	233495	233495	233496	233497	233498	233499	233500
SSM	SSM	SSM	SSM	SSM	SSM	SSM	SSM

Key Plan



13'
12'
11'
10'
9'

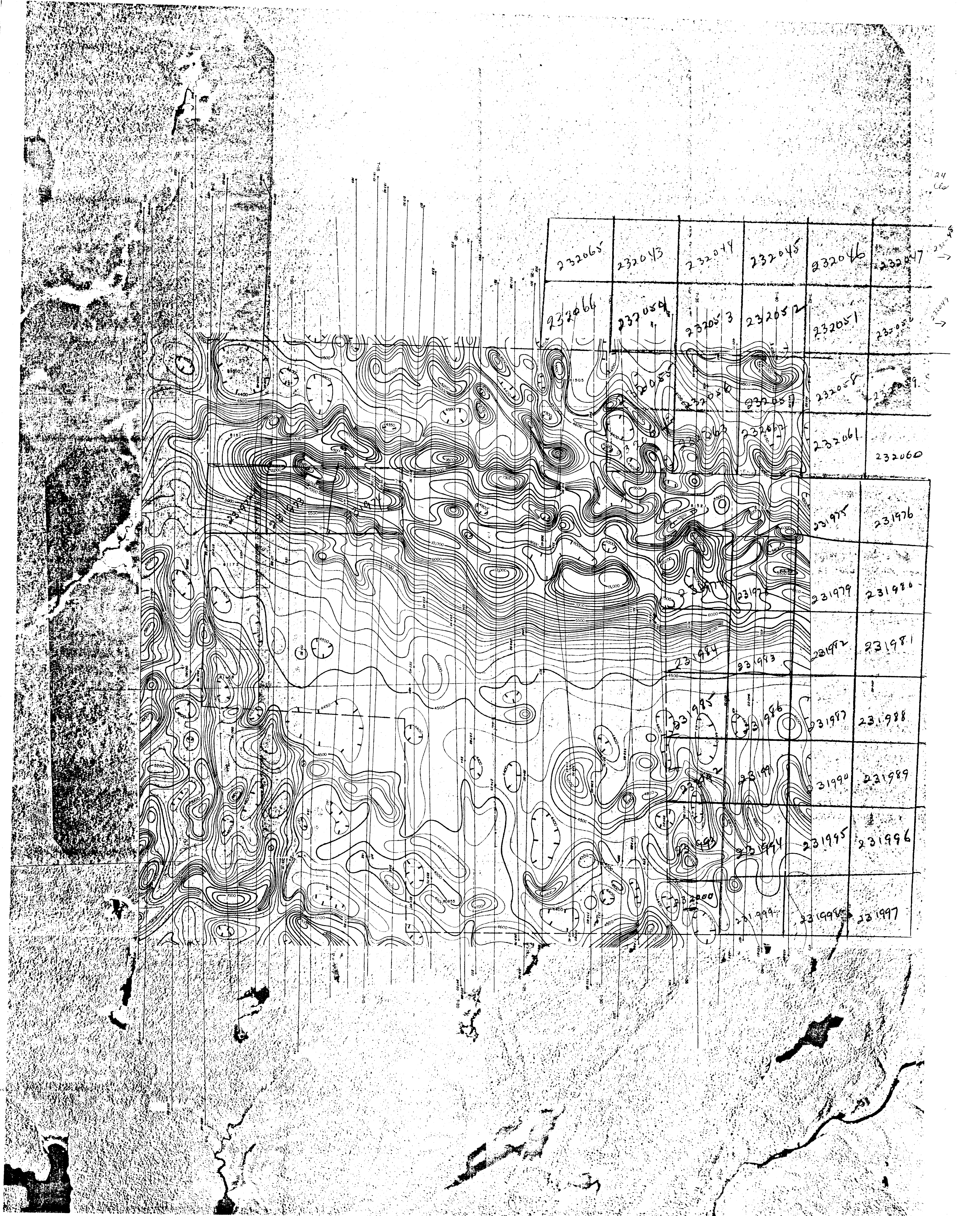


- LEGEND**
- Diabase, gabbro
 - Granitic to felsic Intrusive rocks
 - Conglomerate, greywacke, arkose, slate, siltstone, iron formation
 - Basic metavolcanics, minor sediments
 - Acidic metavolcanics, minor sediments
 - Airborne electromagnetic anomaly
 - Mineralized zone, Cu - Copper bearing

KING ISLAND MINES LIMITED
 PLAN SHOWING PROPERTY, GEOLOGY
 & ANOMALOUS AREAS
 Pukaskwa River Area
 DISTRICT OF THUNDER BAY
 ONTARIO
 Scale 0 1/4 1/2 3/4 1 Mile

REFERENCES: I.O.D.M. Map No 506 - "PUKASKWA RIVER SHEET"

A.O.F. 58



24
C10

AIRBORNE MAGNETOMETER SURVEY
 PUKASKWA RIVER AREA
 ONTARIO
 HARLOW WRIGHT "IN TRUST"
 SCALE 1 INCH TO 660 FEET (APPROXIMATELY)

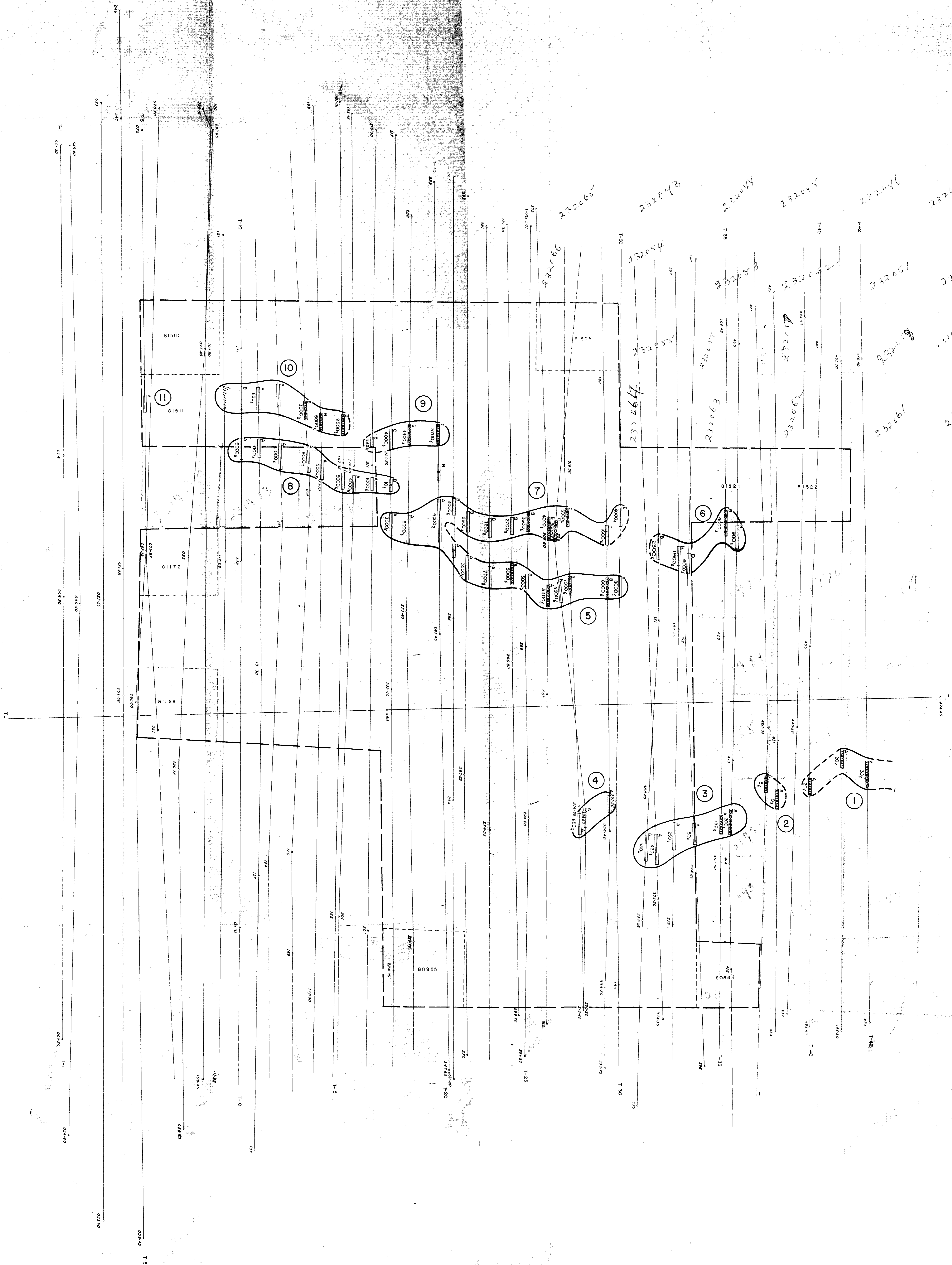
CONTOUR INTERVAL 50 GAMMA
 BASE INTENSITY ARBITRARY
 MEAN TERRAIN CLEARANCE 150 FEET
 TRAVERSE INTERVAL 1/4 MILE
 HORIZONTAL CONTROL BASED ON PHOTO LAYDOWN

SAI

CANADIAN AERO SERVICE LIMITED
 OTTAWA, ONTARIO

42c/04 NE-0012 #1





Handwritten annotations on the right side of the drawing:

- 232066
- 232067
- 232068
- 232069
- 232070
- 232071
- 232072
- 232073
- 232074
- 232075
- 232076
- 232077
- 232078
- 232079
- 232080
- 232081
- 232082
- 232083
- 232084
- 232085
- 232086
- 232087
- 232088
- 232089
- 232090
- 232091
- 232092
- 232093
- 232094
- 232095
- 232096
- 232097
- 232098
- 232099
- 232100



- 210 LEVEL
- 1 A ANOMALY
 - 1 B ANOMALY
 - 2 A ANOMALY
 - 2 B ANOMALY
 - 3 ANOMALY
 - X type ANOMALY



AIRBORNE ELECTROMAGNETIC SURVEY
 PUKASKWA RIVER AREA
 ONTARIO
 HARLOW WRIGHT "IN TRUST"
 SCALE: 1 INCH TO 660 FEET (APPROXIMATELY)

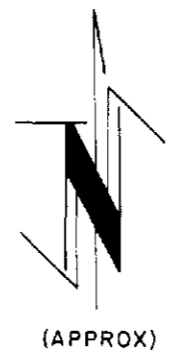
MEAN TERRAIN CLEARANCE: 150 FEET
 TRAVERSE INTERVAL: 1/4 MILE
 HORIZONTAL CONTROL: BASED ON PHOTO LAYDOWN

CANADIAN AERO SERVICE LIMITED
 OTTAWA, ONTARIO

42C 104 NE-0012 #2



220
 URANIUM LEGEND
 ○ ANOMALY 1.5-2 X BACKGROUND
 ● ANOMALY 2-2.5 X BACKGROUND
 ● ANOMALY 2.5 X BACKGROUND
 C ANOMALY 1/2 PEAK WIDTH OF BROAD ANOMALY

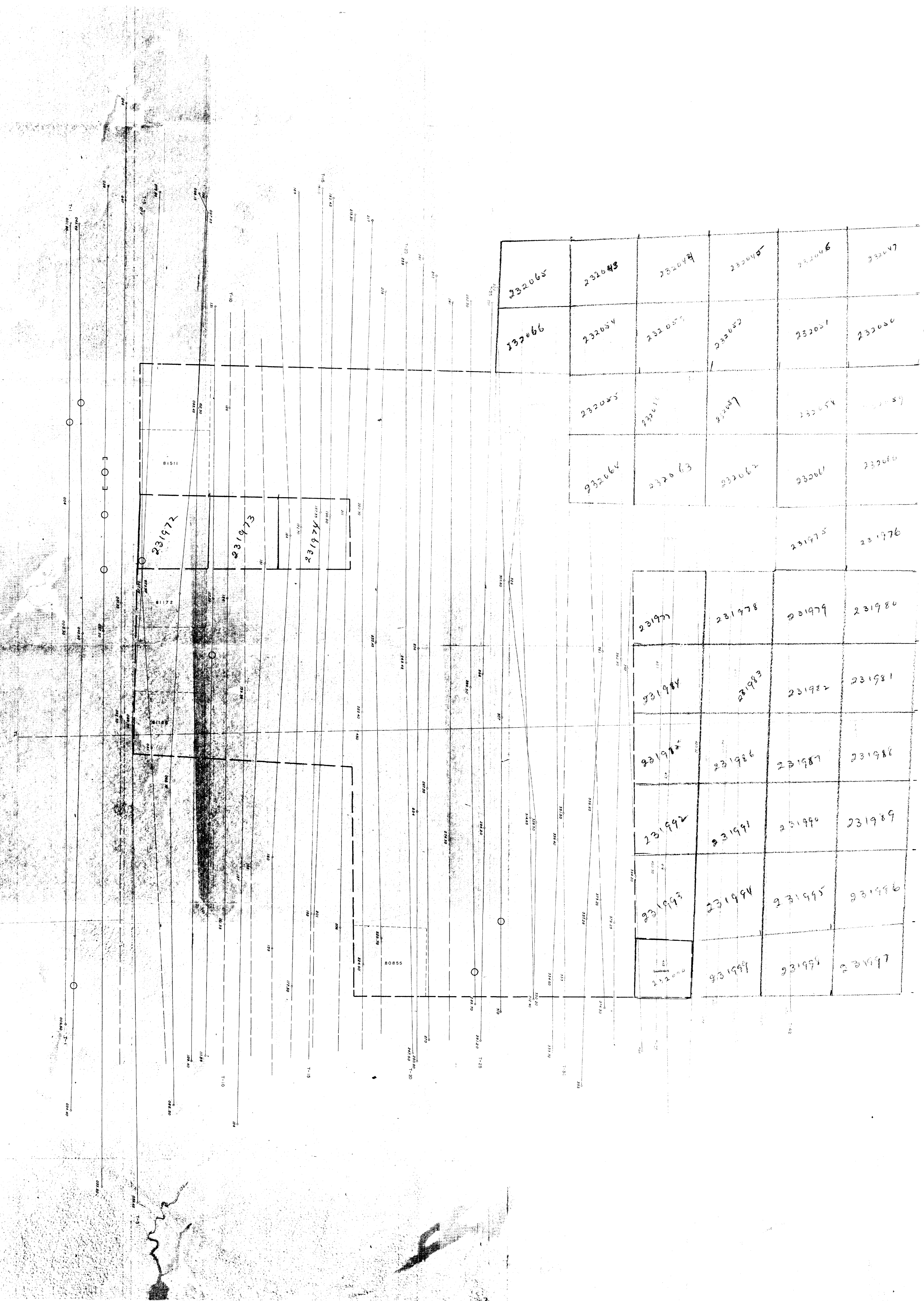


AIRBORNE RADIOMETRIC SURVEY
 PUKASKWA RIVER AREA
 ONTARIO
 KING ISLAND MINES LIMITED
 SCALE: 1 INCH TO 660 FEET (APPROXIMATELY)

MEAN TERRAIN CLEARANCE 150 FEET
 TRAVERSE INTERVAL 1/8 MILE
 HORIZONTAL CONTROL BASED ON PHOTO LAYDOWN

CANADIAN AERO SERVICE LIMITED
 OTTAWA ONTARIO

42C 104 NE-0012 #3



232065	232043	232044	232045	232046	232047
232066	232054	232055	232052	232051	232050
232055	232056	232057	232058	232059	232060
232062	232063	232064	232061	232060	
			231975	231976	
231977	231978	231979	231980		
231981	231982	231983	231984	231985	
231986	231987	231988	231989	231990	
231991	231992	231993	231994	231995	231996
231997	231998	231999	232000		