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PROJECTS



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GEOLOGICAL AND GEOPHYSICAL SURVEYS

OF THE

BANNOCKBURN TOWNSHIP CLAIMS

OF

CANEX AERIAL EXPLORATION LTD.

(NTS 41-P-15)

Toronto. September, 1972.

INTRODUCTION

The property consists of some 17 claims located in Bannockburn

Township, Larder Lake Mining Division, Ontario or, more precisely, in
the vicinity of, and partially overlying Zurbrigg and Charlewood Lakes.

Access during summer via roads is available by following Highway 566,
17 miles west from Matachewan to its end and then following the logging
road 3 miles south.

The claims are recorded in the name of F.H. Faulkner and J.G. Burns both employees of Canex Aerial Exploration Ltd.

TABLE OF FORMATIONS

- 5 Late Mafic Intrusions

 - (a) gabbro(b) pyroxenite

Intrusive Contact

Fault Contact

4 Early Mafic Intrusions

Matachewan diabase

Intrusive Contact

Possible Fault Contact

- 3 Ultramafic Intrusions
 - (a) serpentinite
 - (b) peridotite (c) gabbro

Intrusive Contact

- 2 Intermediate Metavolcanics
 - (a) medium grained flows(b) pillow lavas(c) tuffs
- 1 Felsic Metavolcanics
 - (a) very fine to fine grained flows(b) breccia-fault(c) breccia-flow

 - (d) tuff
 - (e) porphyry

DESCRIPTION OF FORMATIONS

1 Felsic Metavolcanics

(a) This rock unit comprises most of the rock outcrop on the property. Generally the rock is very fine to fine grained, white to brownish buff weathering, amygduloidal except for the most southeastern outcroppings, light green in colour on a fresh surface, dense, choncoidally fracturing rhyodacite or dacite. Locally up to 10% mafic minerals are present. Sericite and carbonate were recognizable alteration products.

Individual flows were not recognized so that unit widths could not be ascertained.

- (b) What may be fault breccia was noted at two localities within the BL-E grid area. The better example on BL-E at 13+25N consists of angular to subrounded fragments up to one inch in diameter. Although exposure is particularly good at this location no contacts or strike direction could be defined owing to the presence of flow breccia, as well as carbonatization. It is quite possible that the rock may be a lapilli tuff.
- (c) Flow breccia was recognized at scattered localities.

 Carbonate is usually present.
- (d) The best example of tuff occurs along a cliff face on BL-C grid at 36S 6+00E. Here the rock is well bedded, light grey to black, medium to very fine grained, with one foot to 1/16 inch units. Graded bedding was sufficiently well developed to be used for top determination.

(e) Porphyritic felsic metavolcanics were noted at a few locations but they do not appear to be in great quantities. The rock is essentially the same as 1(a) except that the white to pinkish feldspar phenocrysts that are present are up to 1/4 inch in diameter and up to 10% in volume

2 Intermediate Metavolcanics

- (a) Andesitic flows are generally medium grained, dark green and massive. Compared with the felsic metavolcanics the rock is rare.
- (b) Pillow lavas were definitely identified at one outcrop at the south end of Zurbrigg Lake. Both bun and balloon pillows of about one foot diameter are present and give a good indication of tops.
- (c) Only in one outcrop were andesite tuffs seen and that was at BL-A grid O=3+75N. Acidic shards are visible within the andesitic matrix.

3 Mafic to Ultramafic Intrusions

(a) Serpentinite outcrops at one locality only, that being on "A" grid at 12W - 6+00N. The rock is dark green to black, magnetic and fine grained. No outline of the former mineral constituents are visible.

The contact with the felsic volcanics is sharp but irregular.

At places 2-inch fragments of acid volcanics occur within the serpentinite.

- (b) The drill logs of 54-36 Inc. contain references to peridotite.

 As no description was given the unit may also be dunite or serpentinite.
- (c) At 12+00S on line 20W "A" grid there is a single outcrop of gabbro in contact with acid volcanics. The rock is considered to belong to the ultramafic sequence of intrusions as the outcrop is removed from either the main fault structure or the topographic lineaments.

4 Early Mafic Intrusions

The gabbroic type rocks near the east end of BL-A have been classified as Matachewan diabase since they meet the general description as given by Rickaby and since they are intimately associated with north-south striking lineaments recognized on the air photographs.

The rock shows a wide variation from fine to coarse grained and dioritic to gabbroic in composition. Composition of the gabbroic phase is about 48% plagioclase, 48% pyroxene, plus minor hornblende, plus quartz and ilmenite (Rickaby). A diabasic texture is well developed, particularly in the coarser phases.

Diorites are minor in quantity and occur at the east end of BL-A notably where the main fault cuts through. Thus the diorite may be an alteration phase of the diabase. Quartz is present in amounts up to 5% while mafics are less than 10%.

5 Late Mafic Intrusions

- (a) The gabbro in filling the fault is much the same as the Matachewan diabase excepting that it does not show the wide variations of grain size and composition. Grain size is usually medium while composition matches that of the average diabase. However, as a magnetic pattern does exist over the dyke, magnetite must be present in modest amounts.
- (b) A very mafic, fine grained crystalline rock assumed to be pyroxenite was seen only as 6 inch border phases of the above unit at BL-A 16W 2+50N. Here the contacts with the volcanics are very sharp and regular.

MINERALIZATION

Pyrite and pyrrhotite are common throughout the volcanics and may form up to 10% of an individual sample. The sulphides occur with the amygdules or in fractures. Chalcopyrite is rare. Two samples, #31676 and #31678, did not assay significantly.

A boulder alongside the road between 16W and 20W "A" grid contained 0.29% Cu. The origin of the boulder is unknown.

In addition to the above, 54-36 Inc. mention in the drill logs cutting sulphides and in particular, chalcopyrite. (See holes 4, 11 and 12-67). Asbestos is mentioned as being present as well.

STRUCTURAL GEOLOGY

Very few structural observations could be made in the field, due mostly to the bland nature of the felsic volcanics. However, top determinations were made at two localities and show tops to the NE on "A" grid, but to the SE on "C" grid. Although two readings are insufficient for proper interpretation, the possibility exists that the felsic metavolcanics area represents a conical volcanic centre.

Magnetics however do show a strong structure continuous across "A" grid just below the baseline. This is the same fault structure delineated from aeromagnetic map 2876 (Matachewan Sheet). Both contacts of this fault may be seen on line 16W at 2+50 and just east of 16W near hole 12-67. Both contacts are extremely sharp. A pronounced gully overlies the fault.

Another fault related to this major fault connects points

L16W-7+00N and BL-A 9+00W. Supporting evidence is found from magnetic data and the felsic volcanic fragments within the serpentinite at 12W - 6+00N.

Some prominent topographic lineaments that show on air photographs have been transferred to the map.

GEOLOGICAL INTERPRETATION

Briefly, the sequence of events is as follows:

- (1) Extrusion of the felsic volcanics together with intermediate volcanics.
- (2) Intrusion of the mafic to ultramafic sills.
- (3) Faulting in a N-S direction with the intrusion of the Matachewan diabase.
- (4) Faulting NW-SE with the intrusion of the late mafic bodies.

GEOPHYSICS

The property was surveyed by vertical loop E.M. and magnetometer employing a Scintrex model SE.600 unit operating at 1600 Hz and a Sharpe MF-1 magnetometer. The parallel line technique (broadside array) working along lines 400° apart was used. The magnetics were run at 100° stations on lines 400° apart. However, station interval was reduced to 25° and 50° in areas of high magnetic relief.

The E.M. survey remained consistently flat throughout the two grid areas with the exception of two very minor cross-over responses. One of these is observed on lines 24W and 28W at about 19+50N. This cross-over is very weak (maximum 6° peak to peak) and falls on a strong magnetic structure. This structure follows a strong fault and can be seen from the aeromagnetic data on map 2876.

The E.M. response is within a zone of peridotite as mapped and interpreted from the high magnetics. It is believed that the E.M. response reflects the shear.

A further magnetic high is seen on lines 28W and 32W at 5+00N and 3+00N respectively. This is interpreted as a small zone of peridotite with minute amounts of magnetite within.

On the south grid (Claims 332284, 285) a large magnetic anomaly extending from about 2+00N to 16+00S was observed. Again, this is due to a zone of peridotite containing very minor amounts of magnetite.

Drilling by 54-36 Inc. indicated peridotite to be present in this area.

Some minor E.M. activity was detected on lines 28S and 32S at 6+00E and 5+00E respectively. This response however is probably due to topographic features rather than conduction.

RECOMMENDATIONS

The anomaly on "B" grid outlined by the vertical loop E.M. survey is probably caused by a conductive shear within the peridotite. However, one test hole of minor priority is recommended based on the following facts:

- (a) Sulphides were noted in hole 11 of 54-36 Inc., i.e. in the faulted-off block of the same peridotite.
- (b) Sulphides are known in other peridotites within the immediate area.
- (c) The peridotites of this area are believed to be of the same age as those in Sothman Township where Falconbridge drilled off a small nickeliferous body within a peridotite.

Suggested location for the test hole is at Line 28W - 18+30N, "B" grid.

Respectfully Submitted

JGB/of

James G. Burns

References: O.D.M. Annual Report Vol.XLI, Part II, 1932 by H.C. Rickaby 54-36 Inc., Filed assessment work.

Aeromagnetic Map 2876G, Matachewan Sheet

Canex Aerial Exploration Ltd. - Geological and Geophysical Surveys.



Ministry of Natural Resources Fred W. Matthews, Supervisor, Projects Section, Ministry of Natural Resources, Whitney Block Parliament Buildings, Toronto



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SEP 28 1972

NOTIFICATION OF RECORDING ECTION OF ASSESSMENT WORK CREDITS

Date of Recording of Work September 26, 1972				
Recorded Holder	F. H. Faulkner and 8 Rollins Place, Islington, Ontario.	James G. Burns 39 Dale Avenue, Scarborough, Ontario.		
Township or Area	(addı	••••		

	Type of Survey and number of Assessment Days Credits per claim
	GEOPHYSICAL Airborne 🗆 Ground 🗔
	Magnetometer20 days
	Electromagnetic40 days
	Radiometric days
	days
	GEOLOGICAL days
	GEOCHEMICALdays
	SECTION 86 (18)days
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Mining Claims

L 328706, L 328707, L 328709, L 328710, L 328711, L 328712, L 328713 and L 328715 Recorded on October 14, 1971 in the name of F. H. Faulkner;

L 332280, L 332282, L 332283, L 332284 and L 332285 Recorded on October 1, 1971 in the name of James Burns.

NOTICE TO RECORDED HOLDER

Survey reports and maps in duplicate must be submitted to the Projects Section, Toronto within 60 days from the date of recording of this work.

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

Telephone (705)

567-8010 When replying kindly quote this file number

Mining Recorder.

c.c. Mr. F. H. Faulkner, 8 Rollins Place, Islington, Ontario.

c.c. Mr. James Burns, 39 Dale Avenue, Scarborough, Ontario.

OFFICE USE ONLY

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

Type of Survey Linecutting	& Electromagnetic	
Township or Area Bannockburn	n Township	
Claim holder(s) F.H. Faulkr		MINING CLAIMS TRAVERSED
	ay Street, Toronto	List numerically
Author of Report Mr. J. I	Burns	L-328706 (40 days)
Address 39 Dale Ave., So	carborough, Ont.	
Covering Dates of Survey Augus	st 5 - September 6, 1972	1-328707 (40 days)
	(linecutting to office)	L-328709 (40 days)
Total Miles of Line cut	12,00	7
		L-328710 (40 days)
SPECIAL PROVISIONS CREDITS REQUESTED	DAYS per claim	L-328711 (40 days) L-328713 (40 days)
	Geophysical 40 days 12 cl	S L-328713 (40 days)
ENTER 40 days (includes	- Electromagneti des Cl	73
line cutting) for first	- Magnetometer	L-328715 (40 days)
survey.	Radiometric	L-332280 (40 days)
ENTER 20 days for each	- Other	
additional survey using same grid.	Geological	L-332282 (40 days)
same gra.	Geochemical	L-332283 (40 days)
AIRBORNE CREDITS (Special pro	ovision credits do not apply to airborne surveys)	L-332284 (40 days)
	agneticRadiometric	
/ /	er days per claim)	L-332285 (40 days)
DATE: $26/9/72$ SIGN	NATURE: Janus Sums Author of Report or Agent	
	Author of Report of Agent	2 coursel dams
PROJECTS SECTION		
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GEOLOGICAL BRANCH		
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A 11		TOTAL CLAIMS 13
Approved by	date	

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

GEOPHYSICAL TECHNICAL DATA

<u>GROUND SURVEYS</u>		
Number of Stations504	Number of Readings_	504
Station interval100 •		
Line spacing 400†	·	
Profile scale or Contour intervals $1^{11} = 20^{-1}$	o ify for each type of survey)	
(speci	ny for each type of survey)	
MAGNETIC		
Instrument		
Accuracy - Scale constant		
Diurnal correction method		
Base station location		
<u>ELECTROMAGNETIC</u>		
Instrument Scintrex SE.600 Vo	ertical Loop	
Coil configuration Vertical		
Coil separation 400		
Accuracy		
Method: Fixed transmitter	☐ Shoot back ☐ In line	▶ Parallel line
Frequency 1600 Hz		
Parameters measured Dip Angles	(specify V.IF. station)	
GRAVITY		
Instrument		
Scale constant		
Corrections made		
Base station value and location		
Elevation accuracy		
INDUCED POLARIZATION - RESISTIVITY		
Instrument		
Time domain	Frequency domain	
Frequency	Range	
Power		
Electrode array		
Electrode spacing		
Type of electrode		

File	

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

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

Type of Survey Magnet	tometer		
Township or Area Bannockb	urn Township		
Claim holder(s) F.H. Faulkner and J. Burns		MINING CLAIMS TRAVERSED	
* *	y Street, Toronto		List numerically
Author of Report Mr. J. Bu	rns		L-328706
Address 39 Dale Ave., Sc	arborough, Ont.		(prefix) (number)
Covering Dates of Survey. Augu	st 5 - September 6	1972.	L-328707
Total Miles of Line cut	(linecutting to office) 12.38		L-328709
			L-328710
SPECIAL PROVISIONS CREDITS REQUESTED		DAYS per claim	L-328711
•	Geophysical - Electromagnetic.		1-328712
ENTER 40 days (includes line cutting) for first	Magnetometer		L-328713
survey.	Radiometric		L-328715
ENTER 20 days for each additional survey using	Other		L-332280
same grid.	Geological	j	
	Geochemical		L-332282
AIRBORNE CREDITS (Special pro			L-332283
Magnetometer Electroma (enter	gnetic Radiom days per claim)	etric	L~332284
DATE: 26/9/22 SIGN	ATURE: Janes Author of Re	port or Agent	L-332285
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GEOLOGICAL BRANCH			
Approved by	date		<u> </u>
GEOLOGICAL BRANCH			
Approved by	date		TOTAL CLAIMS 13

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

GEOPHYSICAL TECHNICAL DATA

<u>GROUND SURVEYS</u>			
Number of Stations_		Number of F	
•		,	
Profile scale or Conto	our intervals50 (specing t	O gamma contours · or each type of survey)	
<u>MAGNETIC</u>			
Instrument	Sharpe MF-1 Fluxgate Ma	gnetometer	
Accuracy - Scale cons	stant 20 gammas on th	e 1000 gamma range	
		s tieing into Base Static	ons established
	Along Base Lines whe		
ELECTROMAGNET	in the second of		
Instrument			
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Coil separation			
Method:	☐ Fixed transmitter	☐ Shoot back ☐ 1	n line Parallel line
Frequency		(specify V.IF. station)	
Parameters measured		(specify v.ir. station)	
GRAVITY			
Instrument			
Corrections made			
INDUCED POLARIZ	<u> ZATION - RESISTIVITY</u>		
		Frequency domain.	
Frequency		Range	
Power			
Electrode array			
Electrode spacing			
Type of electrode			

File	
LHC	

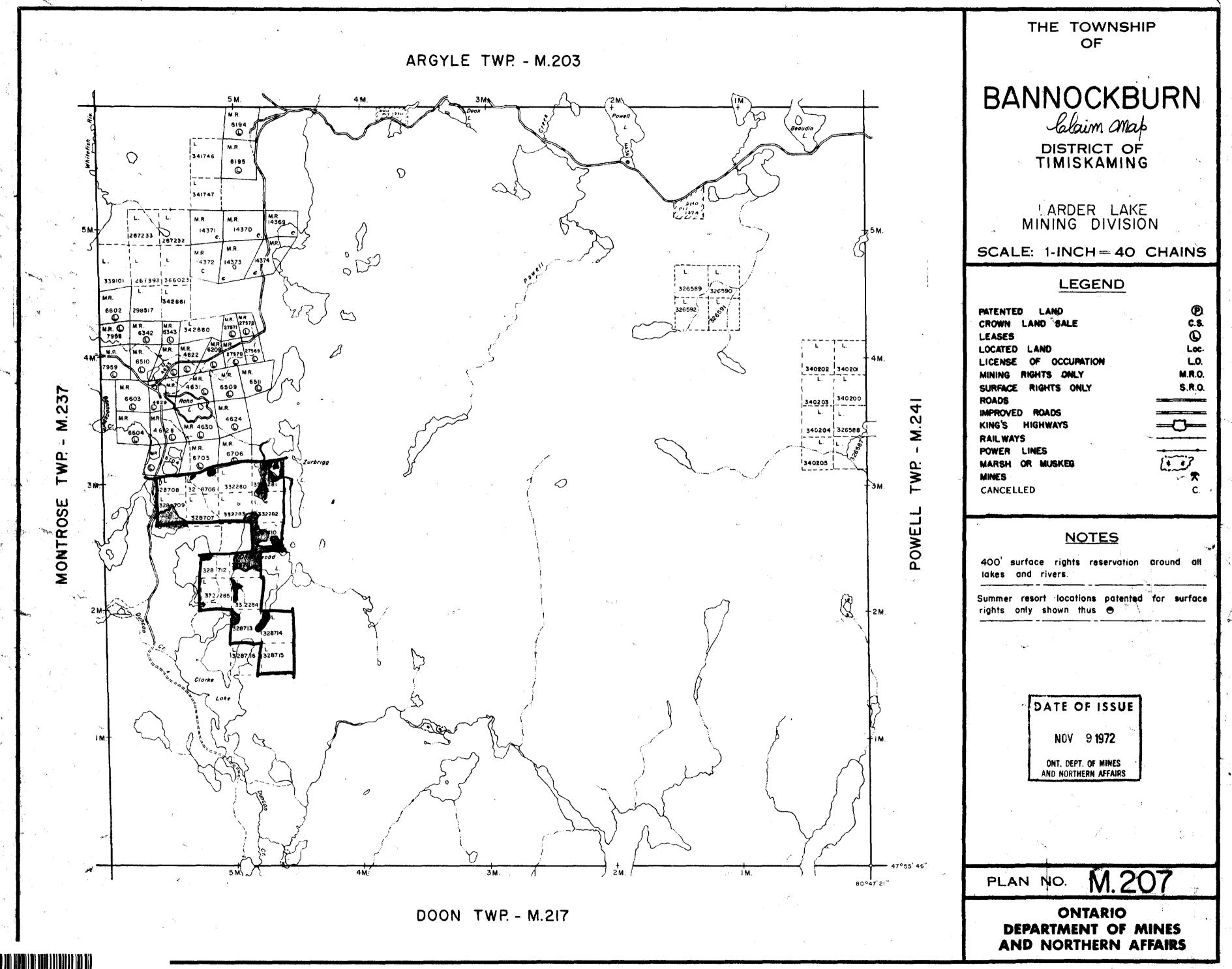
TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey Geological	
Township or Area Bannockburn Township	
Claim holder(s) F.H. Faulkner and J. Burns	MINING CLAIMS TRAVERSED
2600, 401 Bay Street, Toronto	List numerically
Author of ReportMr. J. Burns	L-328706
Address39 Dale Ave., Scarborough, Ont.	(prefix) (number)
Covering Dates of Survey August 5 - September 6, 1972. (linecutting to office)	L-328707
Total Miles of Line cut 12.38	L-328709
	L-328710
SPECIAL PROVISIONS DAYS	L-328711
CREDITS REQUESTED Geophysical per claim	2 020111
Electromagnetic	L-328712
ENTER 40 days (includes line cutting) for first — Magnetometer	L-328713
survey. —Radiometric	L-328713 L-328715
ENTER 20 days for each - Other	
additional survey using Geological 20	L-332280
same grid. Geochemical	L-332282
AIRBORNE CREDITS (Special provision credits do not apply to airborne auveys)	L-332283
Magnetometer Electromagnetic Radiometric Radiometric	
	L-332284
DATE: 26/9/12 SIGNATURE: Survey Survey Author of Report or Agent	L-332285
PROJECTS SECTION	
Res. Geol Qualifications	
Previous Surveys	
Checked bydate	
date	
GEOLOGICAL BRANCH	
Approved bydate	
GEOLOGICAL BRANCH	
	TOTAL CLAIMS 13
Approved bydate	TOTAL CLAIMS 13

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

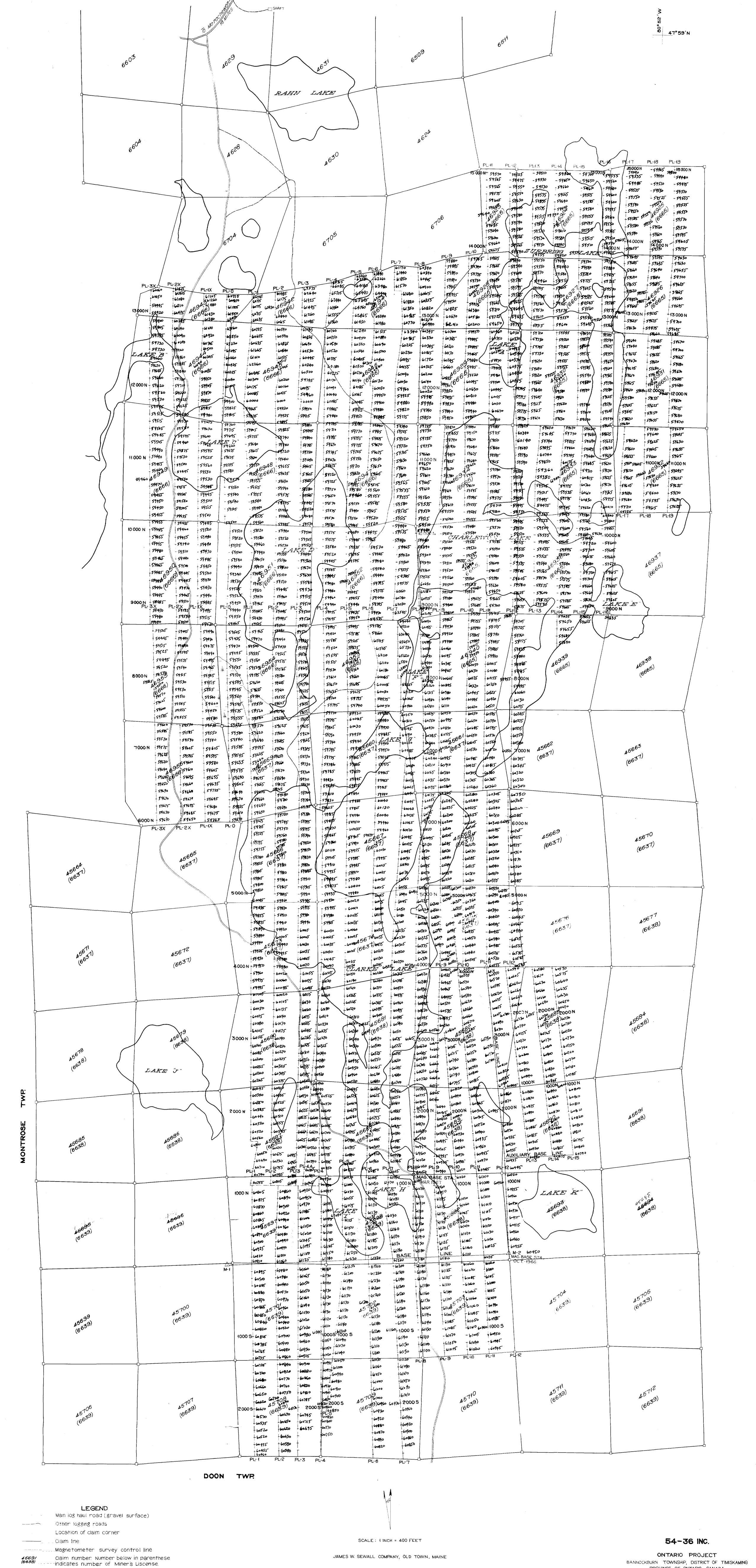
GEOPHYSICAL TECHNICAL DATA

<u>GROUND SURVEYS</u>			
Number of StationsNumber of Readings			
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Profile scale or Contour intervals	for each type of survey)		
	for each type of survey;		
<u>MAGNETIC</u>		,	
Instrument			
Accuracy - Scale constant			
Diurnal correction method		•	
Base station location			
<u>ELECTROMAGNETIC</u>			
Instrument	- 200		· · · · · · · · · · · · · · · · · · ·
Coil configuration			
Coil separation			
Accuracy			
Method: Fixed transmitter	☐ Shoot back	☐ In line	☐ Parallel line
Frequency	(specify V.L.F. station)		
Parameters measured			
GRAVITY			
Instrument			
Scale constant			
Corrections made			
Base station value and location			
Elevation accuracy			
INDUCED POLARIZATION - RESISTIVITY			
Instrument			
Time domain	Frequency of	domain	
Frequency	Range		
Power			
Electrode array			
Electrode spacing			
Type of electrode			



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△M-2 Location of iron pin.

outlined in green.

Boundary of Miner's Liscenses

+60555____Magnetometer survey station. Value in gammas.

-----Base line.

COVERING DATES OF MAGNETOMETER SURVEYS: OCTOBER 1 - OCTOBER 8,1966 MARCH 2 - MARCH 26, 1967

PROVINCE OF ONTARIO, CANADA

CLAIM AND CONTROL MAP The transfer of the part of the

(BASE SHEET FOR MAGNETOMETER SURVEY MAP) MAP 4-1967



41P15NW8244 2.1059 BANNOCKBURN

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SIGNATURE ______

MAGNETOMETER SURVEY MAP

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OVERLAY FOR MAP 4-1967

