

MAGNETIC SURVEY

of

BATA 2, 4, 6, 8 & BATA 9 - 16 INCL.

Located on Claim Map #105L-10

of

62° 42' N. - 134° 47' W.

DETOUR LAKES AREA, YUKON TERRITORY

by

R. A. Granger

Supervised by

Albert F. Reeve, P.Eng.

Geological Engineer

October & November, 1966



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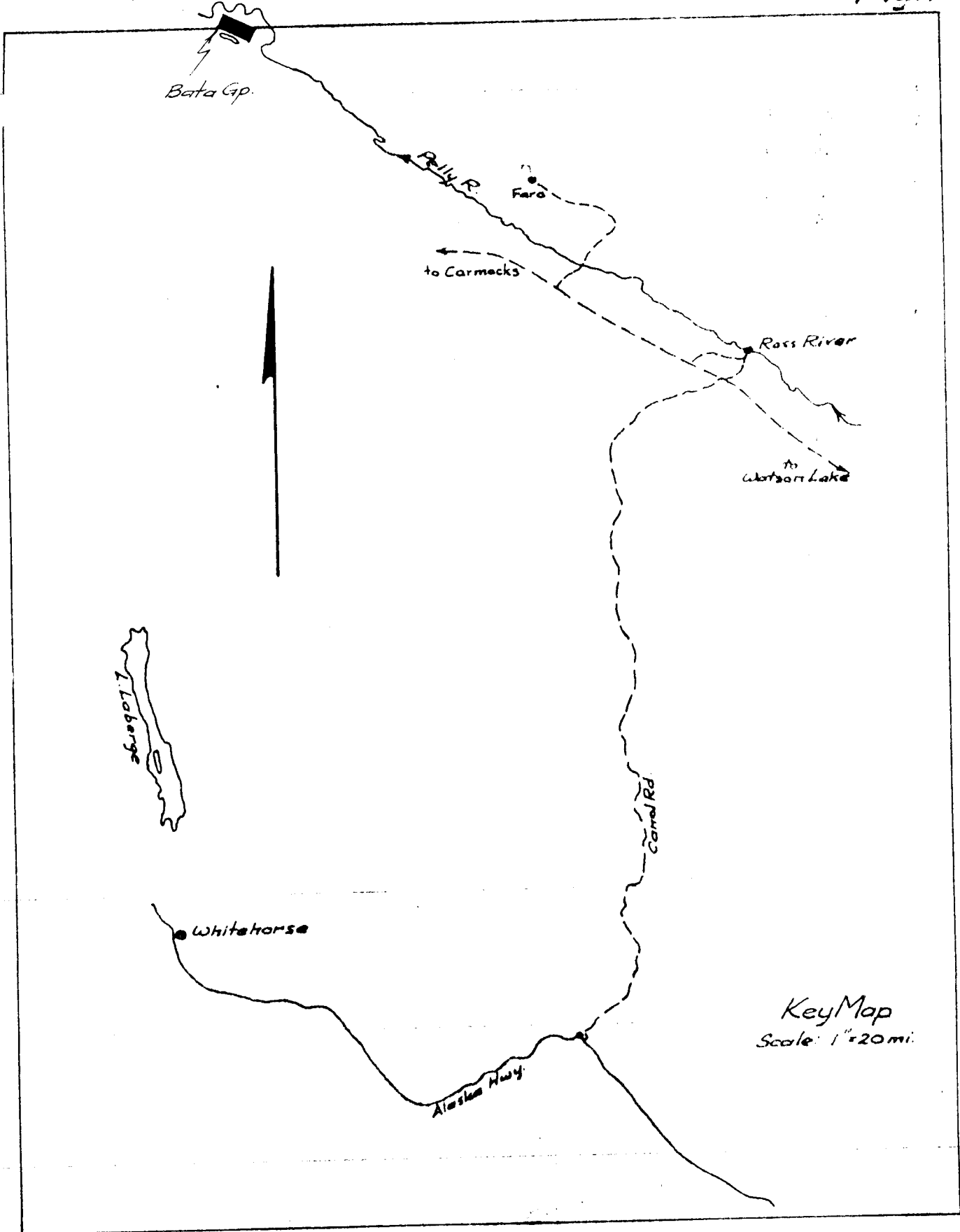
Appendix

- A. Estimated cost of survey.
- B. Statutory Declaration in support
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Maps

- Fig. 1 Key Plan (location)
- Fig. 2 Magnetic Survey Map 1" = 400'
- Fig. 3 Grouping Sketch

Fig. 1



WORK DONE

1. Line cutting and surveying
 - a) 14,650' of base line was cut and chained.
 - b) 55,500' of picket line was cut and chained.
 - c) All claim posts in the survey area were tied to points on the line grid.

2. Magnetic Survey - 14.7 line miles of magnetic observations were taken at 100' intervals on lines 400' apart.

PROPERTY

<u>Name of Claim</u>	<u>Number</u>	<u>Record Date</u>
Bata 1 to 24	96869 to 96892	Dec. 29/65
Bata 57 to 63	Y4665 to Y4672	Apr. 15/66

Total number of claims - 32

All of the above claims are held by:

General Enterprises Ltd.,
P.O. Box 2029,
Whitehorse, Y.T.

The claims have been grouped in two blocks of 16 claims each, Form B, Sec. 52, Yukon Quartz Mining Act, and applications have been made for certificate of work, Form C, Sec. 53.

LOCATION

The claims are located on the south side of the Pelly River some 90 miles downstream from the community of Ross River, at approximately 62° 42' N. latitude and 134 47' W. longitude. Elevations range from 2300' ASL to 3500' ASL. The property lies on the SW flank of the mountain lying between Detour Lakes and the Pelly River.

ACCESS:

No roads presently lead into the area but plans are under way to construct winter tote roads to the various properties.

Float or ski equipped planes can land safely on Detour and Bata Lakes.

In the post break-up season boats can ply the Pelly River from the road at Pelly Crossing to the vicinity of these claims. Large outboard motors are needed due to the strong current.

TOPOGRAPHY

The flank of the mountain is moderately steep but the ground covered by the survey grid varies from small, abrupt hills and narrow draws in the west to gently rolling hills in the east. The claims are wooded with conifers predominant at higher elevations.

REGIONAL GEOLOGY

The geology of the surrounding region is described on G.S.C. Map #25-1960 - "Glenlyon".

The structural and stratigraphic relationships of the various rock units are briefly as follows:

Table of Formations

Quaternary	- unconsolidated glacial and alluvial deposits. - unconformity -
Tertiary	- a) basaltic flows, minor sediments b) acidic porphyritic plutonic rocks. - unconformity -
Jurassic	- a) granodiorite, monzonite, syenite, etc. plutonic rocks - intrusive contact - b) conglomerate, sandstone, argillite.
Triassic	- Grey limestone, basic volcanics, some sediments.
Mississippian **	Upper - sedimentary rocks and basic volcanic flows. Lower - meta volcanics, meta sediments.

** G.S.C. units 19 & 20 are the object of exploration activity in the area. Unit 19 consists of basic volcanic flows with some slate, phyllite, chert, etc. Unit 20 consists of conglomerate, shale and sandstone.

Devonian through Cambrian - sedimentary and meta sedimentary rocks.

Proterozoic - meta sediments and minor volcanic rocks.

LOCAL GEOLOGY

Although mapped as completely unit 19 some prospecting and geological reconnaissance done on the property prior to the survey disclosed highly schistose meta sediments, in places desiccated by numerous quartz veins. Some finely disseminated chalcopyrite was noted in a 30' shear zone in one place. This mineralization was very sparse where seen.

The property lies one mile NE of the Tintina Fault (G.S.C.). Strikes are E-W with dips varying from 35° to 65° S.

MAGNETIC SURVEY

Method

A Sharpe MF-1 fluxgate magnetometer was used to observe the vertical component of the total magnetic field.

An arbitrary instrument datum of 300 gammas was chosen after making a trial reconnaissance traverse. The latitude of the instrument was then adjusted mechanically to the datum. Magnetic observations were then taken at 100' intervals on grid lines 400' apart.

The magnetic data was corrected for diurnal and daily variations with respect to time, by referring to a system of base stations. Corrections were made to the nearest 10 gammas.

SAMPLE CALCULATION

<u>Station</u>	<u>Reading</u>	<u>Diurnal Correction</u>	<u>Daily Correction</u>	<u>Result</u>	<u>Time</u>
base	280	+ 0	-40	240	2:00 p.m.
1	300	+ 0	-40	260	
2	350	+ 10	-40	320	
3	370	+ 10	-40	340	
4	410	+ 20	-40	390	
5	390	+ 20	-40	370	
6	340	+ 30	-40	330	
base	250	+ 30	-40	240	2:30 p.m.

The corrected magnetic results were plotted and contoured on a 1" = 400' plan (see Fig. 2).

RESULTS

Several magnetic anomalies in the 300 - 900 gamma range were detected, two of which were within the grid while the others were only partially so. One anomaly, running from L 112 W to L 136 W, is of particular interest.

CONCLUSIONS

1. Several interesting magnetic anomalies exist on this portion of the property.
2. The rocks in general are a favourable horizon in which to prospect for sulphide deposits. Shearing, quartz veins and some minor chalcopyrite tend to indicate a favourable conditioning of the country rocks.

RECOMMENDATIONS

It is recommended that the property be investigated further as follows:

1. Complete magnetic survey work over the entire claim group. This work could begin immediately.
2. Make detailed EM surveys at least over the anomalous magnetic zones.
3. Take detailed soil sections over coincident geophysical anomalies and analyze the samples quantitatively for copper, zinc and manganese. This must await the summer season.
4. The above procedure would be followed by drilling or mechanical stripping if warranted.



Respectfully submitted,

R.A. Granger

 R.A. Granger

A. F. Reeve

 Albert F. Reeve, P.Eng.,
 Geological Engineer.

A P P E N D I X A


ESTIMATED COST OFMAGNETIC SURVEYBATA CLAIMS 1-24, 57 - 631966

1. Line cutting (contracted)	
13.3 line miles, cut and chained @ \$100	\$ 1,330.00
2. Magnetic survey (contracted)	
14.7 line miles @ \$50.00	735.00
3. Camp Maintenance (incl. meals & supplies)	426.00
4. Transportation	
Klondike Helicopters	
5.40 hrs. @ \$136.50 + 10¢ gal. gasoline	774.00
5. Office and miscellaneous costs	104.00
6. Supervision - 2 days @ \$60.00	120.00
	<hr/>
Total Estimated Cost:	\$ 3,489.00
	<hr/>

APPLICATION OF WORK

The program was performed over the following claims:

Bata 2, 4, 6, 8

Bata 9 - 16 incl.

The following adjoining claims have been grouped together (see grouping sketch, Fig. 3)
Group 1 - Bata 2 to 10 incl, Bata 57, Bata 59-64 incl
Group 2 - Bata 1, Bata 11 - 24 incl., Bata 58.

Total number of claims - 32

Total credit claimed - \$3200.00

Assessment credit claimed per claim - 1 year (\$100)

A P P E N D I X B

STATUTORY DECLARATION

IN SUPPORT OF

ESTIMATED COSTS

YUKON TERRITORY

IN THE MATTER OF
a statement of expenditures
regarding exploration of *southern*
portion Bata..... Mineral claims.

I, Ronald A. Granger, of 400,837 West Hastings Street, City of Vancouver,
in the Province of British Columbia.

DO SOLEMNLY DECLARE THAT:

1. The attached statement of expenditures regarding the exploration of the above mentioned mineral claims is true.
2. I did perform, or cause to be performed through employees under my supervision, the exploration work to which the expenditures apply.
3. The afore said statement of expenditures is herewith annexed to this, my statutory declaration.

And I make this Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of the Canada Evidence Act.

Declared before me
at Whitehorse,
in the Yukon Territory
this DEC 15 1966 day of
.....A.D. 19.....

R.A. Granger
.....

[Signature]
.....
A Commissioner for taking affidavits
for Yukon Territory.

A P P E N D I X C

ALBERT F. REEVE, P.ENG.

GEOLOGICAL ENGINEER

400 - 837 West Hastings Street, Vancouver 1, B.C.

ASSOCIATE
RONALD A. GRANGER

Phone 685-0167

CERTIFICATE

I, Albert F. Reeve, of Vancouver, B.C.,
hereby certify that:

1. I am a geological engineer residing at 2557 West 3rd Avenue, with an office at 400, 837 West Hastings Street.
2. I am a graduate of the Provincial Institute of Mining, at Haileybury, Ontario, 1958; and received a Bachelor of Science degree from Michigan College of Mining & Technology, at Houghton, Michigan in 1961.
3. I am a certified member of the Associations of Professional Engineers in the provinces of Ontario and British Columbia.
4. I supervised the work described in this report on the Bata Claims. I have examined the enclosed results of geological and geophysical surveys and find that they have been properly executed and described.

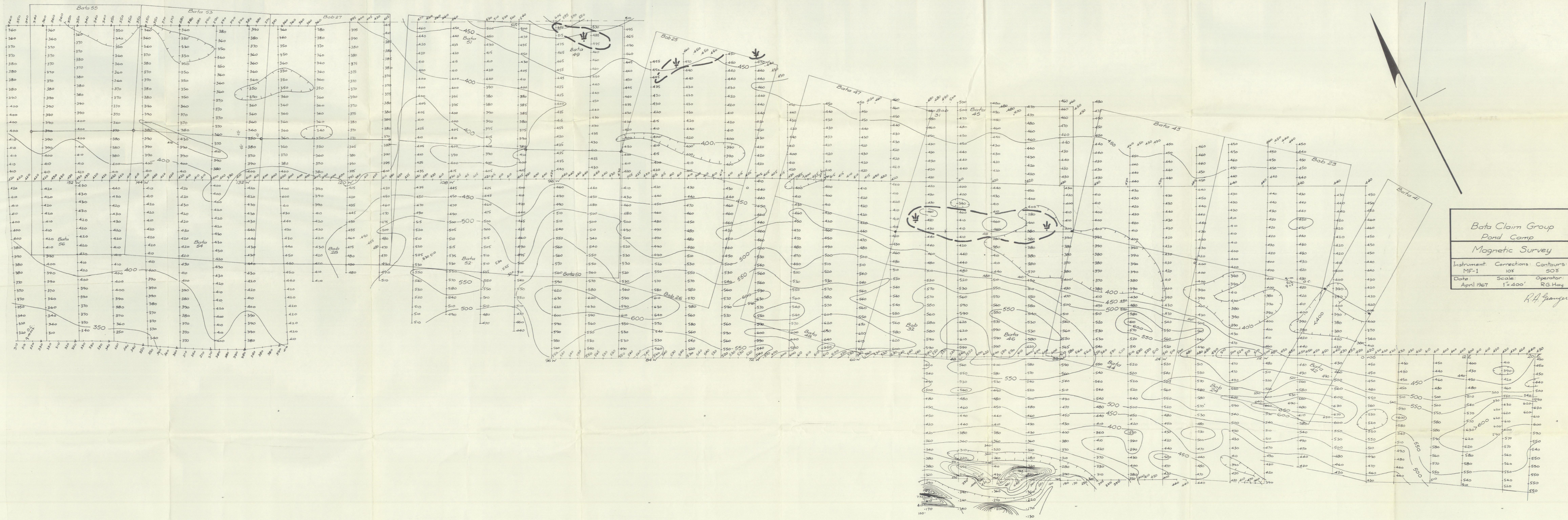


Respectfully submitted,

A handwritten signature in cursive script, appearing to read "A. F. Reeve".

Albert F. Reeve, P.Eng.
Geological Engineer

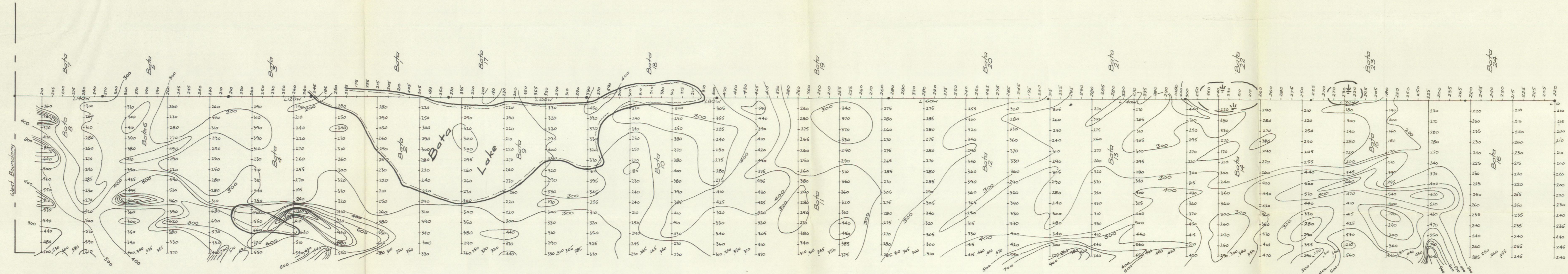
December 9, 1966



Bata Claim Group
 Pond Comp
 Magnetic Survey

Instrument:	Corrections:	Contours:
MF-1	108	50'
Date:	Scale:	Operator:
April 1967	1" = 400'	RG Hay

R.H. Spangler



- lake
- ≡ swamp
- claim posts
- ~ magnetic contours

Part of Bata Claim Group
 "the detour" - Pelly River
 105L-10 Yukon Terr.
 Magnetometer Survey
 Inst.: Sharpe MF-1 (Fluxgate, Vert. Int.) Op.: J.W. Coyne
 Corrections: 10% Date: Dec. 1/66
 Contours: 100' Scale: 1"=400' R.H. Ganger.

GEOPHYSICAL EXPLORATION

OF

THE BATA AND BOB GROUP OF MINERAL CLAIMS

Located on Claim Map No. 105L-10

62° 40' N. - 134° 45' W.

GEOLOGICAL SURVEY
JUN 30 1967
Resident Geologist
Whitehorse, Y. T.



By

R.A. Granger

This document was prepared by
the Geological Survey of Canada
Whitehorse, Yukon Territory

D. C. Yudley

N 322.50
R. F. Radburn

Administrators

Supervised by

Albert F. Reeve, P. Eng.,
Geological Engineer
Vancouver, B.C.

December 1966 to April 1967

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- A. Cost of Geophysical
Investigations BATA and BOB claims
1966-1967

- B. Certificate of Supervising Engineer

MAPS

- Fig. 1 Key Plan (location)

- Fig. 1A Orientation Diagram, etc.

- Fig. 2 Magnetic Survey Map, etc.

- Fig. 3 Electro Magnetic, etc.

INTRODUCTION

This report is based on a program of geophysical investigations carried out by General Enterprises Ltd. on a group of 64 claims in the Detour Lakes area of the Yukon Territory in 1966 and 1967. It has been compiled and written by R.A. Granger under the general supervision of Albert F. Reeve, P. Eng., geological engineer. It is submitted to the Mining Recorder of the Whitehorse Mining District to satisfy assessment work requirements on the claims stipulated for periods varying between one and two years as applied for. A set of geophysical maps is enclosed in the back cover and a certificate of the supervising engineer's qualifications is included in the appendix.

This work was carried out during the period of December, 1966 to April 13, 1967 by the following persons:

- | | |
|--------------------|---|
| - Granger, R.A. | - Geophysical Contractor,
400, 837 W. Hastings St.
Vancouver 1, B. C. |
| - Hay, R.G., B.Sc. | - Geologist,
Box 2378, Whitehorse. |
| - Saunders, N.L. | - Technician,
Box 2378, Whitehorse. |
| - Babb, Herbert | - Line Cutting Contractor,
Box 2378, Whitehorse. |

WORK DONE

1. Line cutting and surveying

- a) 40.5 miles of picket line (including base lines and tie lines) was cut and chained.
- b) All claim posts within this area were tied to points on the grid line.
- c) Claim tags were affixed to the proper claim posts.

2. Geophysics

- a) Magnetic Survey - 43 miles of magnetic observations were taken at 100' intervals on lines 400' apart.
- b) Electromagnetic Survey - 38 miles of electromagnetic observations were taken at 100' intervals in lines 400' apart.

PROPERTY

<u>Claim Name</u>	<u>Number</u>	<u>Record Date</u>
Bata 25 to 56 incl.	Y4633 to Y4664	April 15, 1966
Bob 1 to 16 incl.	Y12133 to Y12148	
Bob 17 to 24 incl.	Y12231 to Y12238	
Bob 25 to 32 incl.	Y12379 to Y12386	

Total Number of Claims: 64

All of the above claims are held on behalf of

General Enterprises Ltd.,
Whitehorse, Yukon.

These claims have been grouped and applications have been made for Certificates of Work, Form C, Section 53.

LOCATION

The claims are located south of the Pelly River and north of Detour Lakes about ninety miles downstream from the town of Ross River. Co-ordinates are approximately $62^{\circ} 40'$ N. latitude and $134^{\circ} 45'$ W. longitude. Elevations are between 2000' and 3600' A.S.L. The claims occupy a broad bend in the Pelly River known as The Detour.

ACCESS

During the period of these surveys access was only by small aircraft but a tote road is presently being constructed to the property by the owners. This road in general follows the south bank of the Pelly about four miles removed. It begins at the Mayo Road near the town of Pelly Crossing and reaches into the property after a traversed distance of about sixty miles.

TOPOGRAPHY

The northeast portion of this group covers a broad flat but the southwest portion covers the flank of a small mountain which rises abruptly from the valley bottom.

The Detour Lakes to the southwest occupy low spots in a valley which marks the location of the Tintina Fault.

REGIONAL GEOLOGY

The geology of the surrounding region is described on G.S.C. Map 25-1960 - "Glenlyon".

The structural and stratigraphic relationships of the various rock units are described as follows:

Table of Formations

Quaternary	- Unconsolidated glacial and alluvial deposits - unconformity
Jurassic, Cretaceous or earlier	- Acidic intrusive rocks of batholithic characteristics; monzonite, diorite, granodiorite, etc. Some minor mafic dikes. - intrusive contact
Mississippian	- Clastic sediments, basic flows, phyllite, limestone, carbonaceous shale. Unit 19. This group corresponds to Unit 7 on the "Tay River" sheet which hosts the Pb, Zn deposits at Faro, Vangorda and Swim lakes.
Devonian, Silurian, Ordovician	- Quartzite; shale, argillite, limestone, rhyolitic tuff and flows.

LOCAL GEOLOGY

Table of Formations

1. Volcanic Sequence; andesitic and basaltic flows, some pyroclastic material.
2. Meta sediments - quartz mica schists, phyllite, probably some carbonaceous shale.

Structural

1. It is possible that the mountain (volcanic rocks) represents an anticlinal fold. During the surveys snow depths were too great to allow proper observation.

2. Two outcrops of meta sedimentary rocks were observed on the flats. These exhibited much crumpling due to drag folding and were cut by numerous small to medium sized quartz veins. Dips were moderately northeast.

Mineralization

Initial prospecting disclosed many occurrences of weak chalcopyrite mineralization often associated with shearing. These were not economic but are important as points of reference in detailed prospecting.

Conwest and Glenlyon Mines Ltd. are carrying out programs on adjoining properties on mineralization of associated origin.

GEOPHYSICSMethod

A. A Sharpe MF-1 fluxgate magnetometer was used to observe the vertical component of the total magnetic field.

An arbitrary instrument datum of about 400 gammas was chosen after making a trial reconnaissance traverse over an area known to be underlain by quartz mica schist. The latitude of the instrument was then mechanically adjusted to the datum. Magnetic observations were then taken at 100' intervals on grid lines 400' apart.

The magnetic data was corrected for diurnal and daily variations with respect to time, by referring to a system of base stations. Corrections were made to the nearest ten gammas.

Sample Calculation

<u>Station</u>	<u>Reading</u>	<u>Diurnal Correction</u>	<u>Daily Correction</u>	<u>Result</u>	<u>Time</u>
base	280	+ 0	- 40	240	2:00 p.m.
1	300	+ 0	- 40	260	
2	350	+ 10	- 40	320	
3	370	+ 10	- 40	320	
4	410	+ 20	- 40	390	
5	390	+ 20	- 40	370	
6	340	+ 30	- 40	330	
base	250	+ 30	- 40	240	2:30 p.m.

The corrected magnetic results were plotted and contoured on a 1" = 400' plan (See Fig. 2).

GEOPHYSICS

B. Electro Magnetic Survey

Sharpe SE 300 electro magnetic survey equipment was used to make EM observations at 100' intervals on lines 400' apart.

This equipment consists of two identical units, each having a coil capable of transmitting and receiving oscillating electro-magnetic field signals of 400 c.p.s. and 1600 c.p.s.

There are several ways (or configurations) in which the two units can be used to produce useful EM data.

In this case a reconnaissance method known as the "broadside" configuration was employed. This method is illustrated on Fig. 1A. Operator B generates a cyclic electro-magnetic field signal with the transmitting coil. Operator A receives this signal and "nulls" it by tilting the receiver coil. If there are no conductors, such as sulphide bodies, graphite zones, or confined ionic waters, in the near vicinity of the operators, the angle of tilt of the receiving coil will be near 0° . However, if such a conducting body is cut by the varying magnetic component field of the transmitter, electrical currents will be produced which in turn will set up a secondary electro-magnetic field of like frequency. When this occurs the resultant of

GEOPHYSICSB. Electro Magnetic Survey (cont'd.)

the original and secondary fields will cause the receiver coil to null at anomalous \pm tilt angles.

In the broadside method the operators traverse in parallel directions, successively occupying directly opposite stations. At each station operator B transmits and A receives, then the procedure is reversed.

Tilt angles are recorded and plotted at the receiving station. In this way two lines of data are received on a single traverse. Anomalous results indicating a conductor consist of a series of high positive tilt angles followed by a "crossover" and a group of negative angles.

Tilt angles in this case were plotted directly and did not require mathematical reduction. The 1600 c.p.s. frequency was used for this work.

Tilt angle profiles are shown on Fig. 3,
1" = 400' scale electromagnetic survey plan.

RESULTS

The magnetic survey indicates geologic trends parallel to the strike of the Tintina Fault and known geology.

A belt of weak magnetic lows traversing the property in a northwesterly direction probably indicates a strong fault with a good deal of shearing and wall rock alteration.

Southwesterly of this postulated fault and in the southeasterly portion of the property there is a series of weak to moderate magnetic highs varying from 100 gammas to 200 gammas above background.

Further to the southwest and on the steep flank of the mountain there is a strong magnetic anomaly ~~of~~ series of anomalies. As this area is complex and coverage is incomplete due to ground conditions, further work is necessary before results can be stated in full.

The electromagnetic survey indicates two types of conductors, as follows:

a) Weak to strong conductors closely associated with magnetic highs.

b) Conductors not associated with magnetic highs and tending to be continuous over great distances.

CONCLUSIONS

1. The strong magnetic high and associated conductor A-1 is interpreted to represent lenses of material with disseminated to heavy pyrrhotite associated with massive sulphides or carbonaceous material. These features will be found very close to surface.
2. The moderate magnetic highs with erratically associated conductors could represent weakly disseminated pyrrhotite or magnetite in (a) zones of moderate sulphide in erratic veins and disseminations, or (b) zones of carbonaceous material. These are well covered by overburden.
3. The long conductors similar to A-5, A-6 and without magnetic association are probably beds of graphitic material.

RECOMMENDATIONS

It is recommended that the following steps be followed in further evaluating results to date:

- 1.. While the bulldozers are available it would be advisable to attempt to strip down to bedrock over the more pronounced anomalous areas. If more than ten feet of overburden is encountered on any such anomaly further work should await more detailed surveys.
2. Make detailed EM surveys using different configurations over selected anomalies.
3. Take soil samples over these areas and analyse them quantitatively for copper and zinc.

Respectfully submitted,



R. A. Granger



Albert F. Reeve, P. Eng.,
Geological Engineer

APPENDIX A

COST OF GEOPHYSICAL INVESTIGATIONS

BATA AND BOB CLAIMS

1966-1967

1.	Linecutting (contracted) 40.5 mi. @ \$75	\$ 3,037.50
2.	Magnetic Survey (contracted) 43 mi. @ \$50	2,150.00
3.	E.M. Survey (contracted) 38 mi. @ \$50	1,900.00
4.	Camp maintenance and supplies 274 man days @ \$5.00	1,370.00
5.	Transportation Super Cub, Robt. Grant	<u>2,865.00</u>
	Total Cost of Surveys	\$ 11,322.50

This work has been applied for and distributed.

APPENDIX B

ALBERT F. REEVE, P.ENG.

GEOLOGICAL ENGINEER

400 - 837 West Hastings Street, Vancouver 1, B.C.

ASSOCIATE

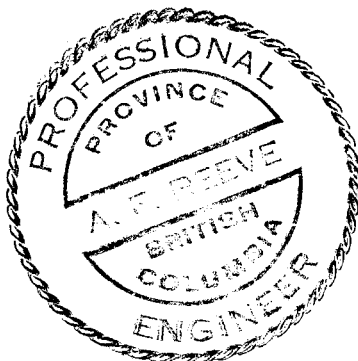
RONALD A. GRANGER

Phone 685-0167

CERTIFICATE

I, Albert F. Reeve, of Vancouver, B. C.
hereby certify that:

1. I am a geological engineer residing at 2557 West 3rd Avenue, with an office at 400, 837 West Hastings Street.
2. I am a graduate of the Provincial Institute of Mining, at Haileybury, Ontario, 1958; and received a Bachelor of Science degree from Michigan College of Mining & Technology, at Houghton, Michigan, in 1961.
3. I am a certified member of the Associations of Professional Engineers in the provinces of Ontario and British Columbia.
4. I supervised the work described in this report, on the Bata and Bob Claims. I have examined the results given in the enclosed geophysical survey and find that they have been properly executed and described.



Respectfully submitted,


Albert F. Reeve, P. Eng.,
Geological Engineer

April, 1967.

Figure 1

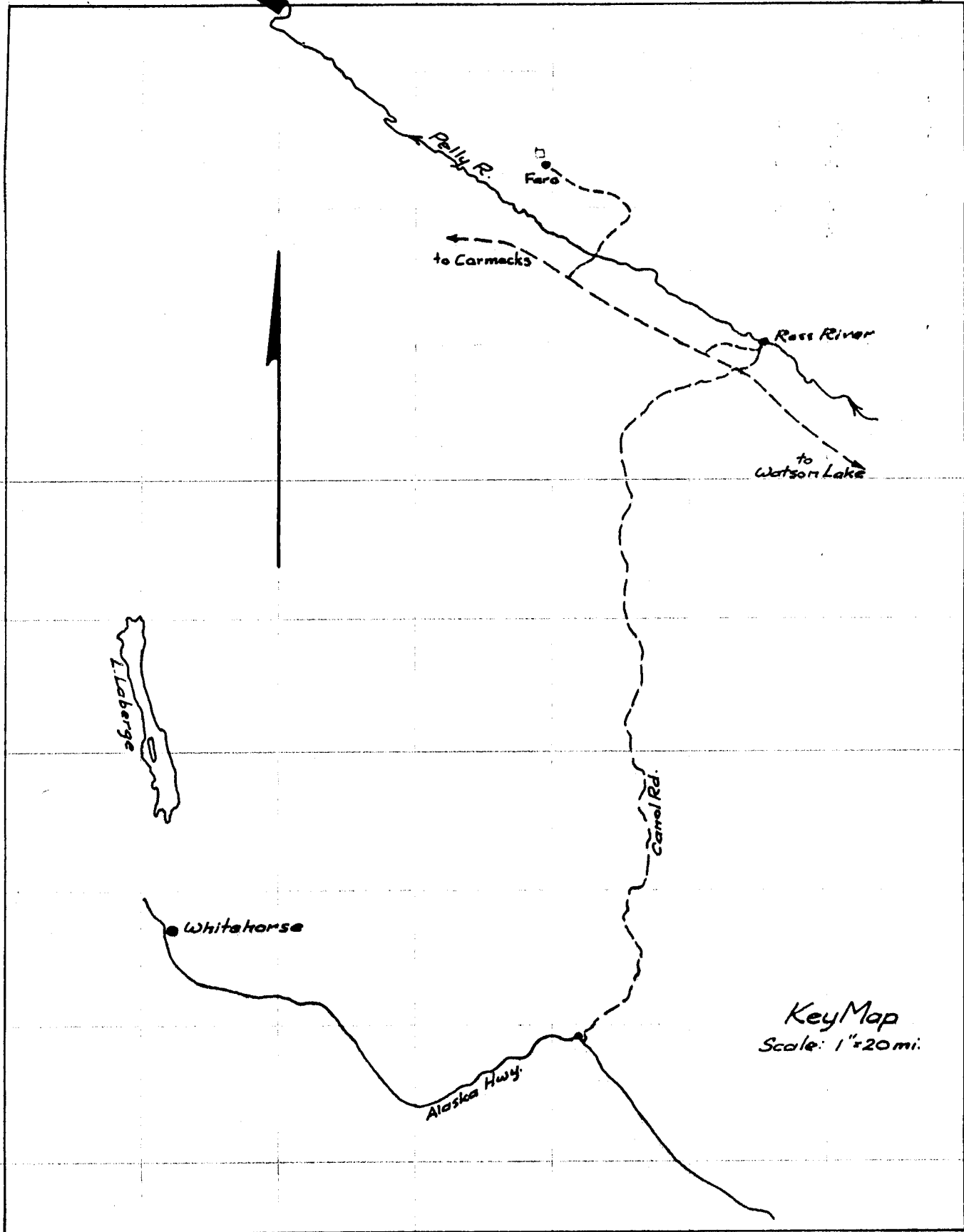
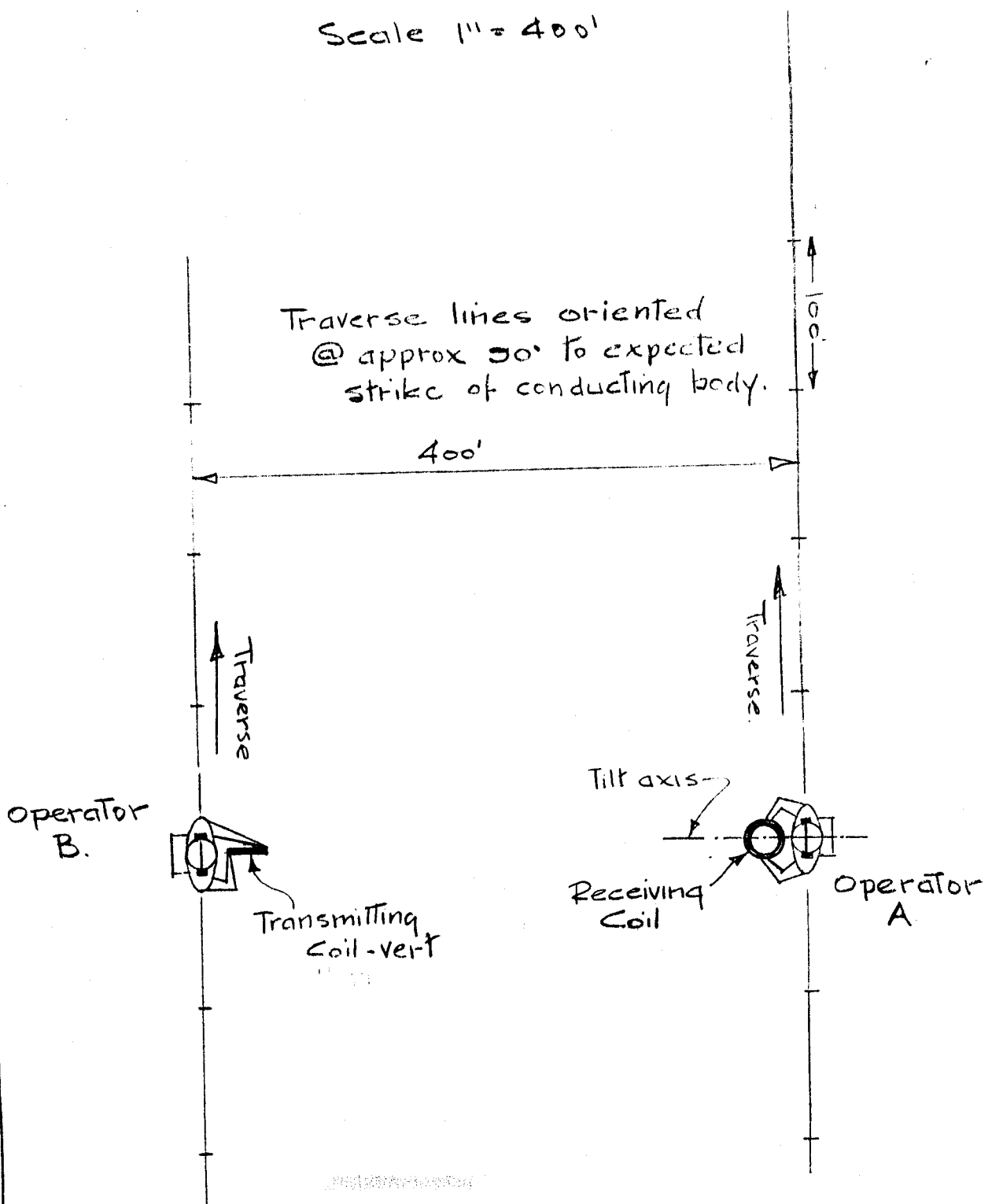
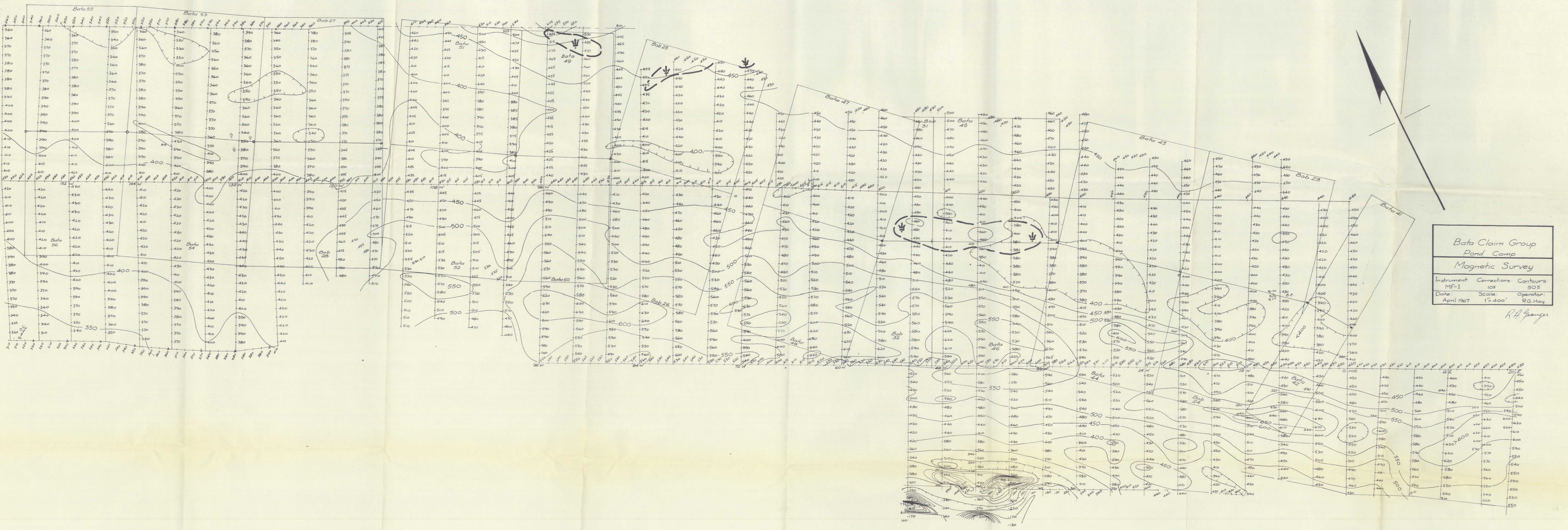


Fig 1-A
ORIENTATION DIAGRAM
for
SHARPE SE-300 E.M. EQUIPMENT
"BROADSIDE" RECON. METHOD
Scale 1" = 400'

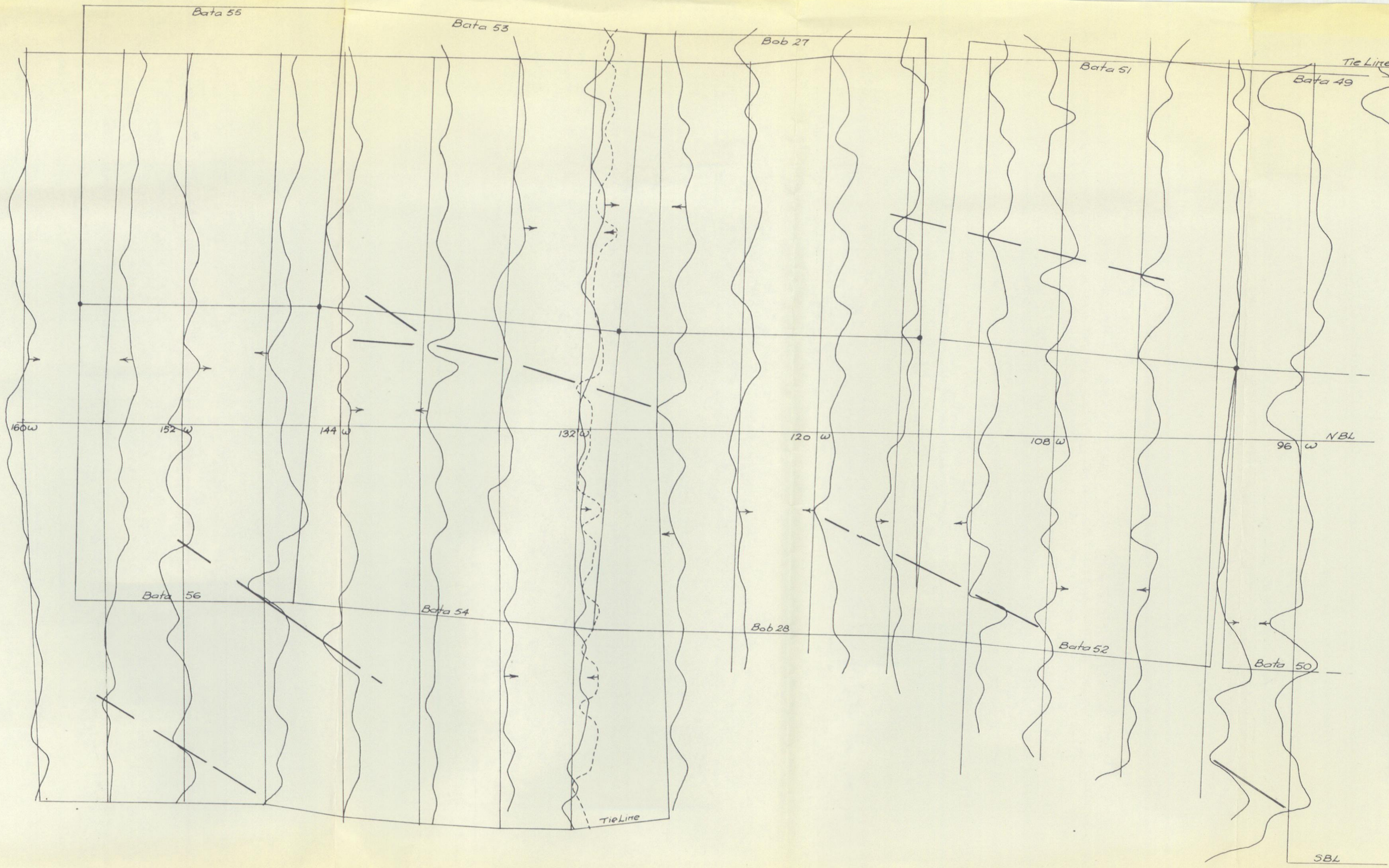




Bata Claim Group
 Pond Camp
 Magnetic Survey

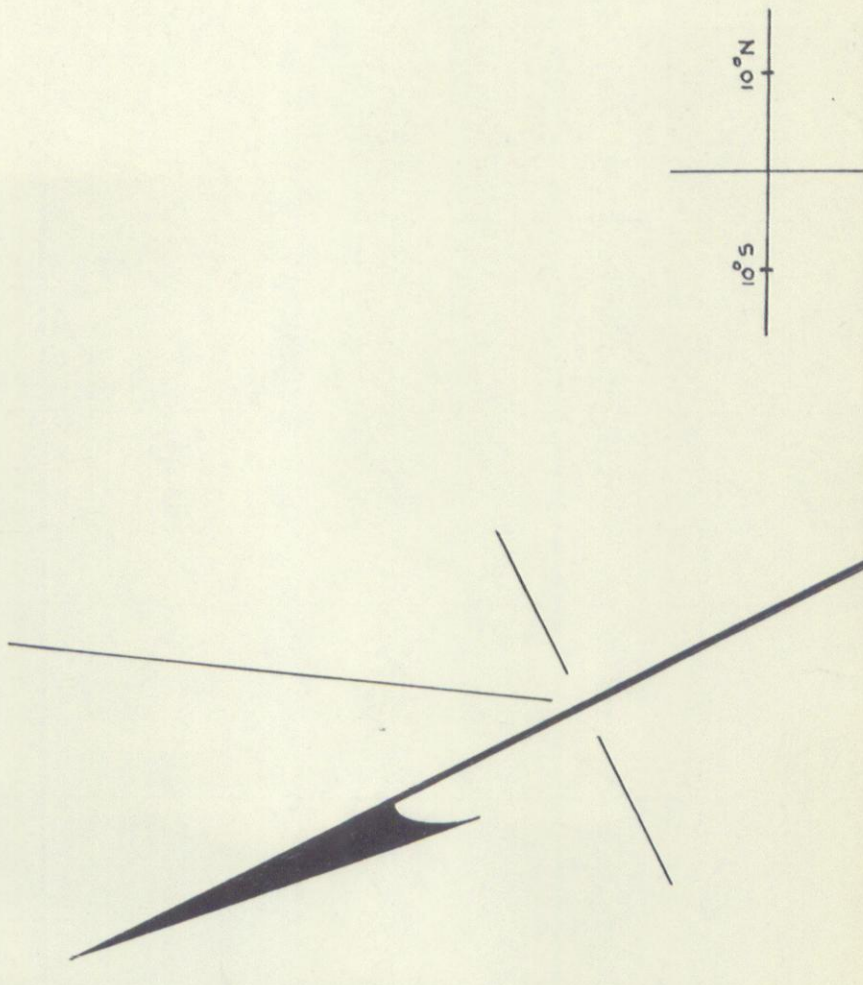
Instrument:	MF-1	Corrections:	108	Contours:	50'
Date:	April 1967	Scale:	1" = 400'	Operator:	R.G. Hay

R.G. Hay



West End Bata Claim Group Pond Camp		
Electromagnetic Survey (reconnaissance)		
Instrument: SE-300	Method: Vert. Loop	Frequency: 1600 c.p.s.
Date: April 1967	Scale: 1" = 400'	Operator: R.G. Hay

R.A. Lyanger



East End
 Bata Claim Group
 Pond Camp
 Electromagnetic Survey
 (reconnaissance)

Instrument: Method: Frequency:
 SE-300 Vert Loop 1600cps
 Date: April 1967 Scale: 1" = 400' Operator: R.G. Hay

R.A. Spangor

