92-L-7

GEOPHYSICAL SURVEY

BOB CLAIMS,
BONANZA LAKE, B.C.

October 2nd, 1962

D. J. Salt

GEOPHYSICAL SURVEY 92-L-7

BOB CLAIMS GP-6219
BONANZA LAKE, B.C.

SUMMARY:

A better idea of the relative position of possible veins was obtained by a study of the geophysical results, and further drilling is recommended to test other possibilities near the known veins.

INTRODUCTION:

Drilling of the Bonanza deposits has obtained some excellent copper indications. A self-potential survey uncovered other zones which have been covered by preliminary drilling. Further drilling is warranted, however.

LOCATION & ACCESS:

The property is accessible, or will be shortly, by road from Nimpkish or by air from Alert Bay. The location map is attached to each of the geophysical maps.

METHOD OF GEOPHYSICAL SURVEY:

Lines were traversed at 50 foot intervals in an east-west direction. Ronka readings, self-potential readings and magnetometer readings were made at 50 foot intervals.

A Sharpe self-potential unit with a sensitivity of 1 millivolt, a Ronka Mark I electromagnetic unit, and an Askania magnetometer with a sensitivity of 216.8 gammas per division were used.

The major problems encountered in doing the surveys were a result of the deep moss layer, and the hillsides.

The deep moss layer prevented good self-potential contacts without digging through the moss and tree roots. This slowed the survey up.

The hillside slopes make the Ronka a difficult unit to use but, using a hand level and a levelling unit on the coil, it was possible to overcome this effect to a great degree.

The hills could displace the self-potential negative centres.

GEOPHYSICAL INTERPRETATION:

One geological interpretation of a drag fold could be correct and appeared to fit the geophysical data, however, another very likely possibility can be interpreted geophysically.

It is quite possible that the lens of sulphides, which had been located by drilling, in the vicinity of Anomaly A (shown on the map Fig.1) is the one which is causing the negative centre at B not A.

If one assumes a dip of 30° for the sulphides, indicated by drilling, then the surface exposure of the drilled lens could appear just to the east of Anomaly B. As the negative centers are displaced downhill, usually from the causative body, this difference in location would not be serious. Hence, the sulphide lens could dip to the east at 30° and plunge to the southeast.

If this interpreation is correct, the cause of A anomaly has probably not been drilled and should possibly be found to the southeast of A. This anomaly could be the one indicated by the Ronka and as such could be more massive sulphides or a larger mass.

Some provision should be made to cover the eventuality that this interpretation is incorrect. There are two possible veins,which could generally follow a drag fold, as indicated. There is a possible east-west mineralized zone. Both interpretations should be tested.

At least three crossections are recommended to be drilled. The reasons for AA and BB are rather obvious, but crossection CC should be drilled in the event that Anomaly B represents sulphides which are further to the north, buried under overburden.

The presence of chalcopyrite float,downhill from Anomaly C, tends to confirm the possibility of sulphides from this cause.

CONCLUSIONS & RECOMMENDATIONS:

It is concluded that there are excellent copper possibilities indicated by the survey work. If Anomaly C proves to be of interest, then possibly further self-potential work should be conducted to the south.

Crossections AA, BB and CC should be drilled, omitting any sections that may be a repeat of previous drilling. The length of AA and BB is to cover any possibility that may have been missed, because of displacement of the negative centre due to topography.

Due to the flat dip, possibly a series of vertical holes on hundred foot centres might be more satisfactory than the crossections.

It should be noted that if the geophysical interpretation of the first lens, which was drilled, is correct, then the negative centre can be assumed to be 50 foot downhill from the surface expression of the vein. This should be borne in mind when spotting drill holes. It is also clear that there should be two other zones present.

Respectfully submitted,

D. J. Salt

DJS/jl
October 2nd, 1962.

APPENDIX

THEORY OF METHOD:

(a) Self-Potential

Sulphides and graphite bodies will set up electric currents, if the top of the body is in a different solution to the lower part of the body. This difference in solutions is usually produced by oxidation of the sulphides near the surface and the lack of oxidation below. The generated currents traverse the ground and the sulphides producing a low negative potential over the centre of the sulphide body.

By measuring the electrical potential on the ground, sulphide bodies can be located.

(b) Ronka

When an electrical conducting body is placed in an alternating magnetic field, small eddy currents of electricity are induced in the conductor.

For the special case where the magnetic field direction is horizontal and the conductor an almost vertical lens of sulphide ore, the eddy currents flow very nearly around the circumference of the ore body. These eddy currents set up their own magnetic field. If this field can be measured the presence of a sulphide deposit can be detected.

There is a phase difference between the secondary field and the primary or initial field. The relationship between the two fields is measured in terms of out-of-phase and in-phase components.

The magnitude of these changes is influenced by depth, width and conductivity of the body.

The system employed uses a transmitter coil in front followed by a receiver coil 200 feet behind, joined by a 200 foot cable. A null is obtained at the receiver coil by adjusting the amount of compensation at the receiver coil. The change in compensation may be read from the scale on the dial.

(c) Magnetometer

Varying amounts of magnetite in different rocks near the earth's surface produce measurable differences in the earth's magnetic field. By measuring these differences the underlying rock structure can often be inferred even though covered with overburden.

Occasionally the structure containing the sulphides can be determined from the magnetometer survey. The results can also be used as a guide to the presence of pyrrhotite and varying rock types.

FALCONBRIDGE NICKEL MINES LIMITED

BONANZA LAKE B.C.

BOB CLAIMS

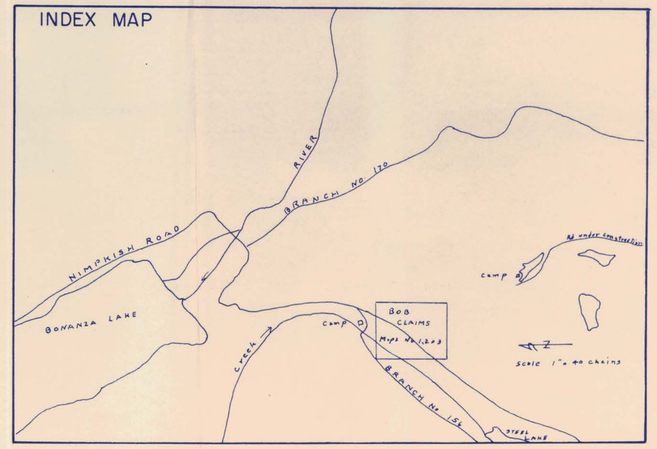
SELF POTENTIAL SURVEY

50 0 50 100 150 FEET

LEGEND

- 137 Relative Value of Potential in Millivolts
- Contour Interval 25mv above 200mv.
- Contour Interval 50mv below 200mv.
- ALL READINGS NEGATIVE.
- Recommended Cross-section
- Trend of Interpreted Sulphide Zone

INDEX MAP



AUG. '62

FIG 1

N

BASE LINE

BASE LINE

V T S R Q P O N M L K J I H G F D B

FALCONBRIDGE NICKEL MINES LIMITED

BONANZA LAKE B.C
BOB CLAIMS

RONKA SURVEY

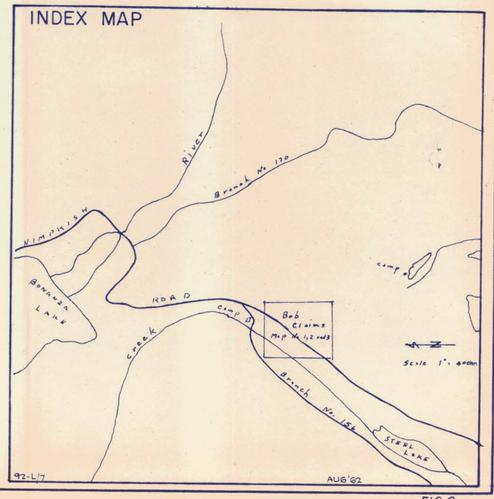
50 0 50 100 150
FEET

In phase

Out of phase

Conductor (Interpreted)

INDEX MAP



92-L/7

AUG '82

FIG 2

FALCONBRIDGE NICKEL MINES LIMITED

BONANZA LAKE B.C.

BOB CLAIMS

MAGNETOMETER SURVEY

50 0 50 100 150 FEET

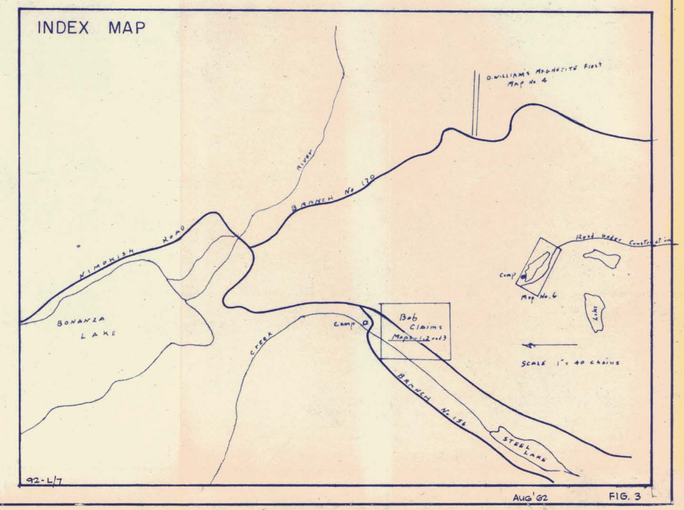
LEGEND

|165 Relative Value of Vertical magnetic field in gammas

Contour Interval 100 gammas below 1500

Contour Interval 500 gammas above 1500

INDEX MAP



Aug '82

FIG. 3

RECONNAISSANCE GEOPHYSICAL SURVEY 92-L-7

BONANZA LAKE AREA, BRITISH COLUMBIA GP-6220

SUMMARY:

One zone of interest was indicated by the Ronka survey. This should be checked by self-potential measurements. The reconnaissance work should also be re-run using the self-potential technique.

INTRODUCTION:

A geophysical crew was at Bonanza Lake to cover the Bob Claims, and a short time was spent conducting a Ronka reconnaissance survey along some of the logging roads in the area.

METHOD OF SURVEY:

The Ronka survey using a Mark I with 200 foot cable was used along the roads, stopping every 100 feet to take a reading. A test profile was also run over a magnetite deposit to show the effect of magnetite.

LOCATION & ACCESS:

The location of the various roads are shown in the location maps accompanying each traverse.

DISCUSSION OF RESULTS:

One section of interest is shown as A in Fig. 1. There appears to be a combination of effect of a good conductor plus the effect of a magnetite zone.

Anomaly C in Fig. 4, suggests the presence of magnetite.

The Ronka profile over the Iron River showing, shows the effect of the magnetite giving a positive in phase response. It may be compared with the magnetometer data in Fig. 5.

A few magnetometer profiles were run to check the possibilities in the vicinity of magnetite float (Dan Williams showing).

The only possibility of there being magnetite present is a very small lens shown at B in Fig.6. Unless the magnetite contains copper, there is no possibility of finding a commercial magnetite deposit in the area covered by this magnetometer survey.

CONCLUSIONS & RECOMMENDATIONS:

It is concluded that the source of the Willisms magnetite float could not be of economic interest, or has not been located.

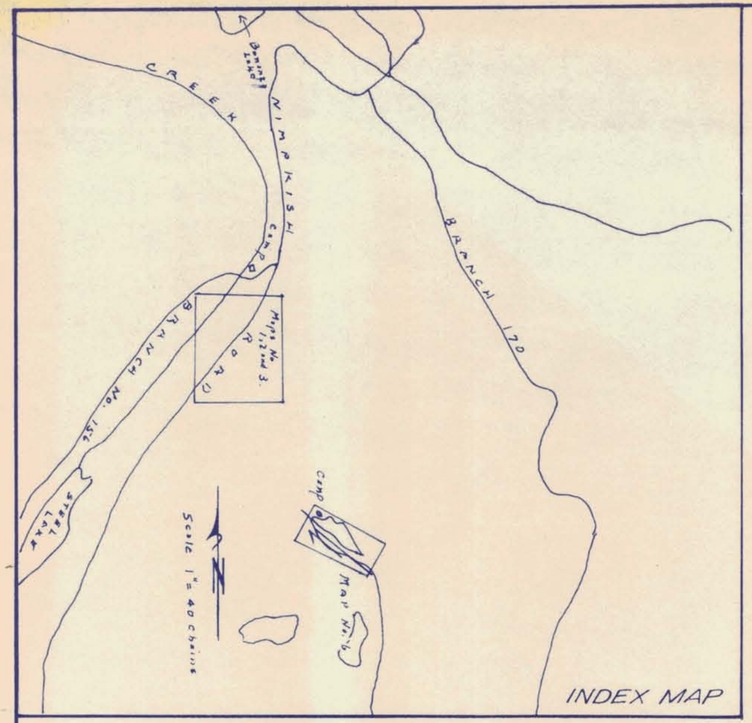
Self-potential reconnaissance work should be done on the lines run with the Ronka. The Ronka unit is not very satisfactory on small flat lying deposits in hilly country.

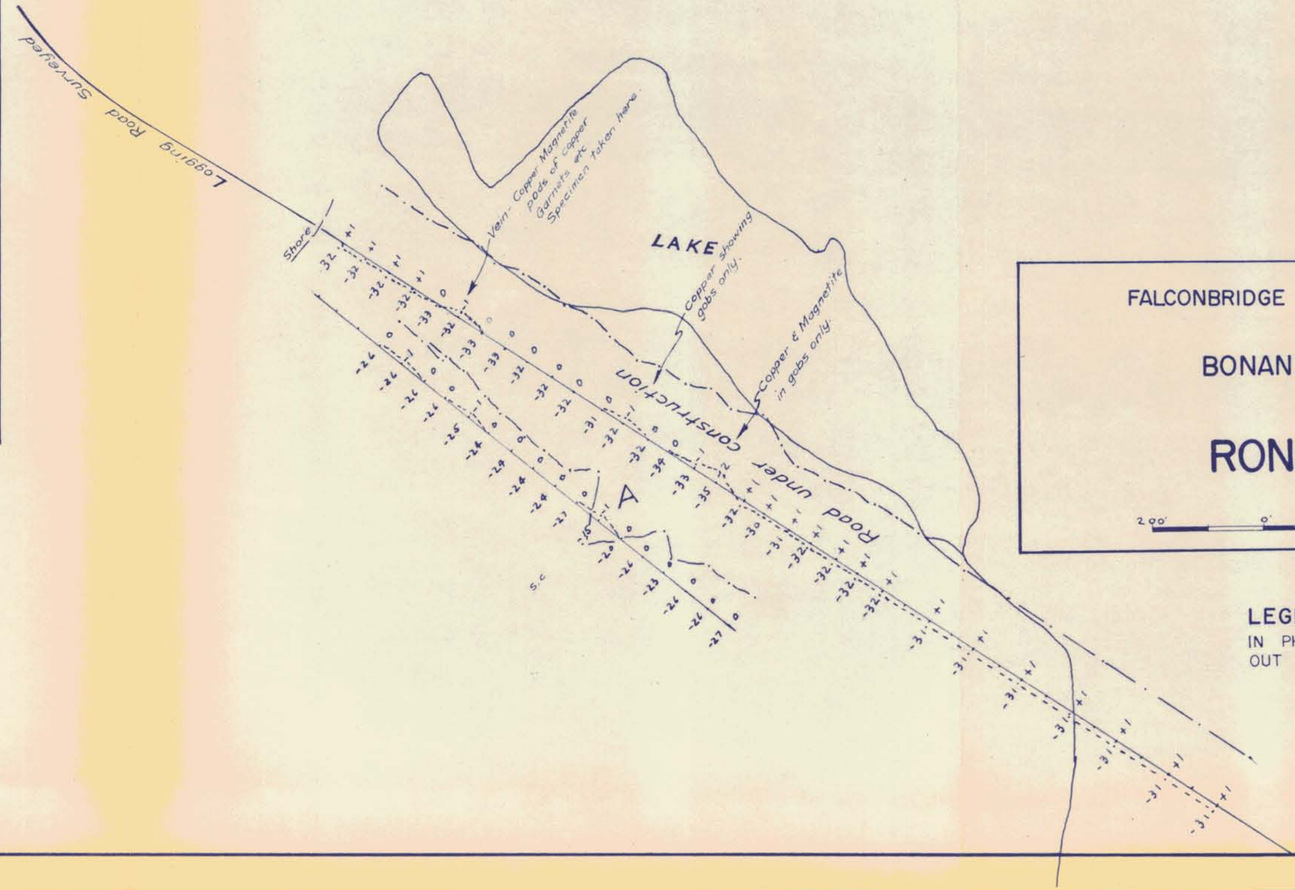
A grid should be cut on the southwest side of the lake, shown in Fig. 1, to enable self-potential work to be done to outline the anomaly found in A, and another grid cut to the northeast of Steel Lake to extend anomaly C.

Respectfully submitted,

D. J. Salt

DJS/jl
October 2nd,1962.





FALCONBRIDGE NICKEL MINES LIMITED

BONANZA LAKE B.C.
BOB CLAIMS

RONKA SURVEY

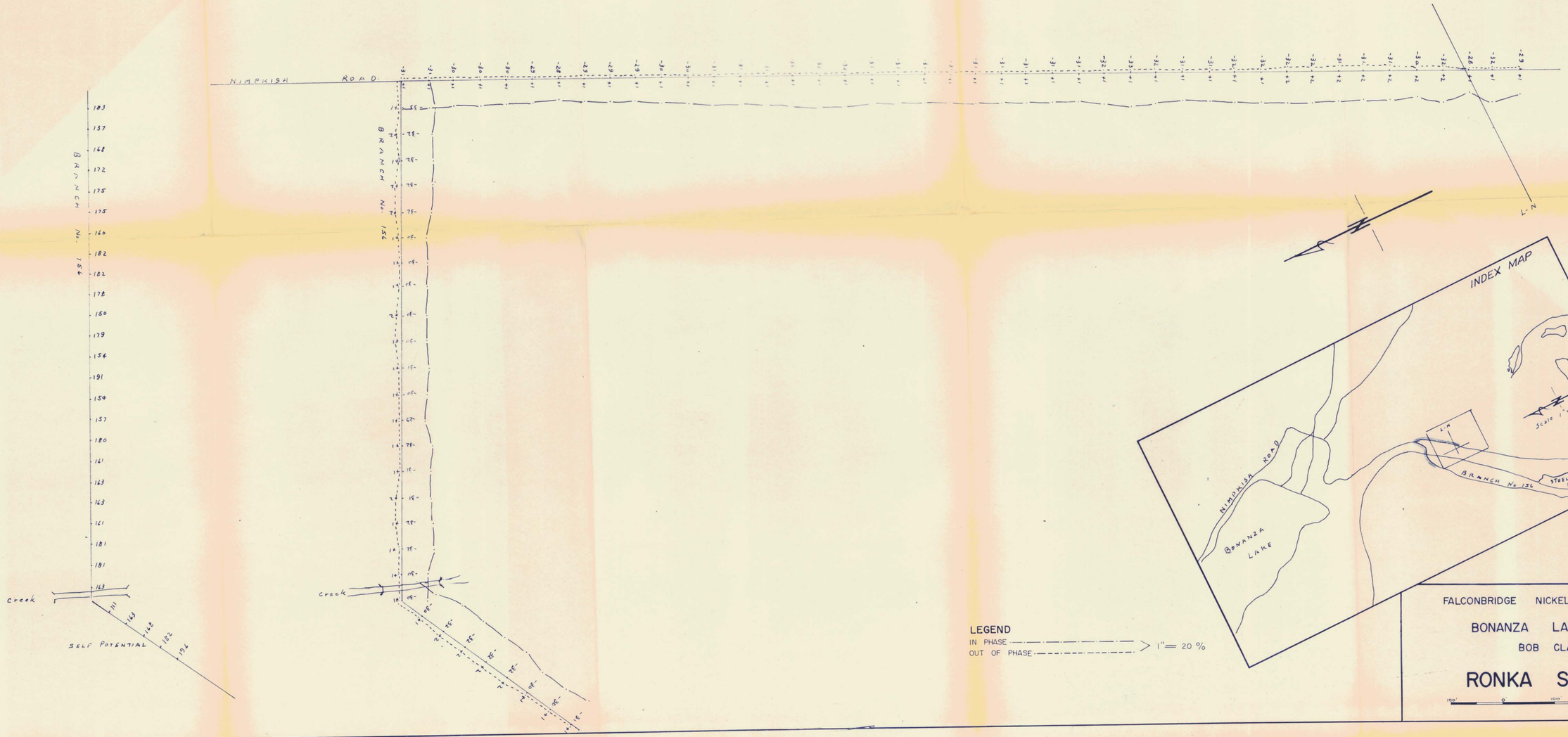
200' 0' 200' 400' 600'

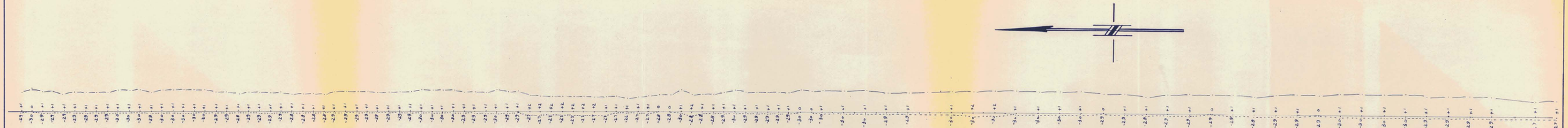
Aug. 1962

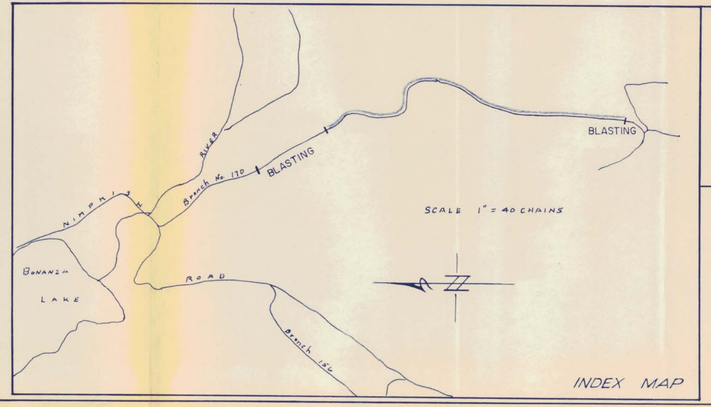
LEGEND

IN PHASE ——·——·——·—— 1" = 20%
OUT OF PHASE ----·----·----·----

Fig. 1


NIMPKISH ROAD
BRANCH No. 156
Creek
SELF POTENTIAL
INDEX MAP
NIMPKISH ROAD
BONANZA LAKE
BRANCH No. 156
STEEL LAKE
Scale 1" = 40 chains
L-N
LEGEND
IN PHASE
OUT OF PHASE
1" = 20 %
Aug 1962
FALCONBRIDGE NICKEL MINES LIMITED
BONANZA LAKE B.C.
BOB CLAIMS
RONKA SURVEY
Fig. 2





INDEX MAP

FALCONBRIDGE NICKEL MINES LIMITED

BONANZA LAKE B.C.

BOB CLAIMS

RONKA SURVEY

200' 0' 200 400' 600'

LEGEND

IN PHASE ——·——·——·—— > 1"= 20 %

OUT OF PHASE ———————————

Road 170 is very crooked. The Ronka plan shown as straight line to facilitate, plotting results.

Fig. 3

FALCONBRIDGE NICKEL MINES LIMITED

BONANZA LAKE B.C.

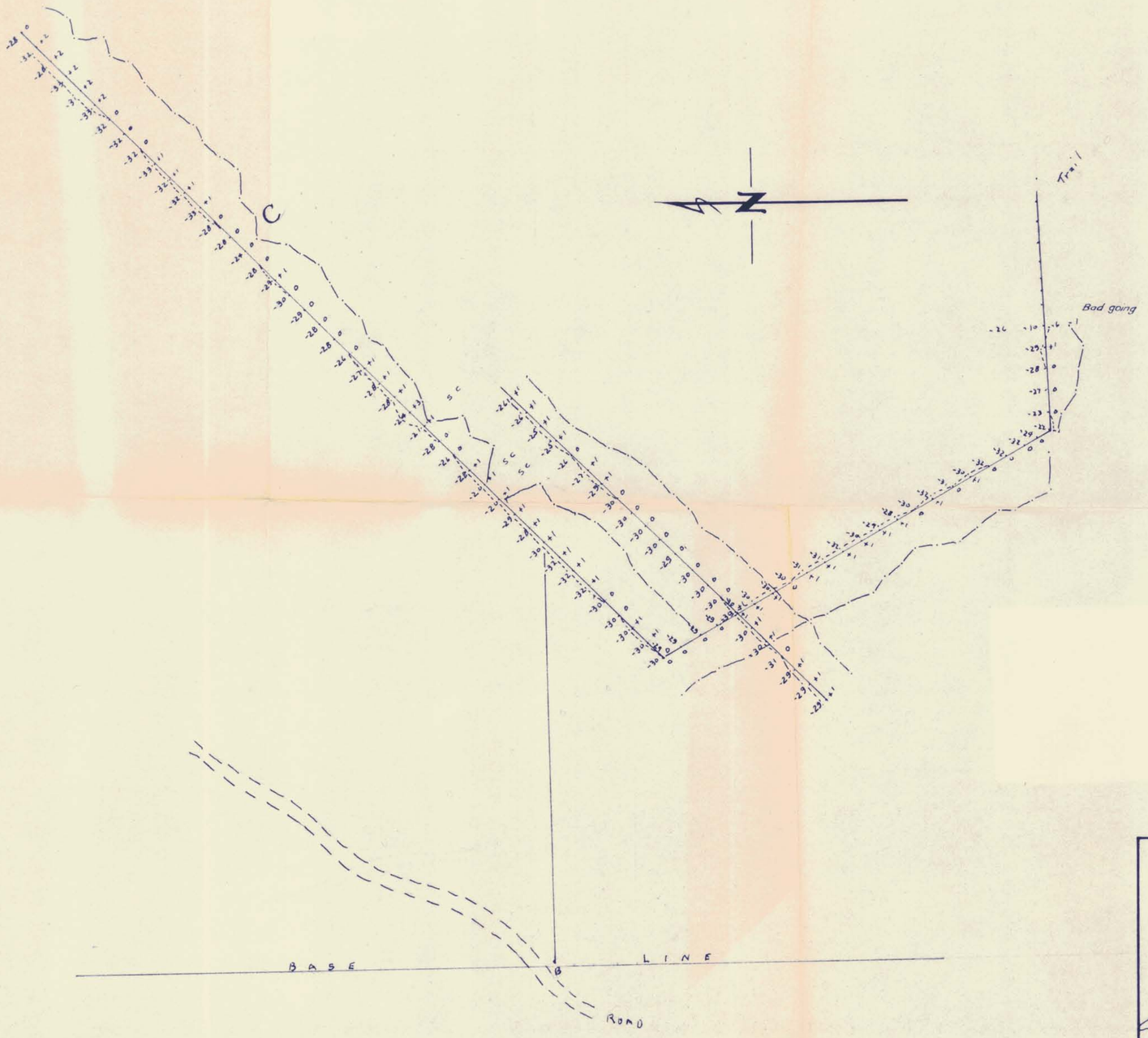
BOB CLAIMS

RONKA SURVEY

200' 0 200' 400' 600'

FEET

Aug. 1962



LEGEND

IN PHASE ——·——·——·——
OUT OF PHASE ----------
} 1" = 20 %

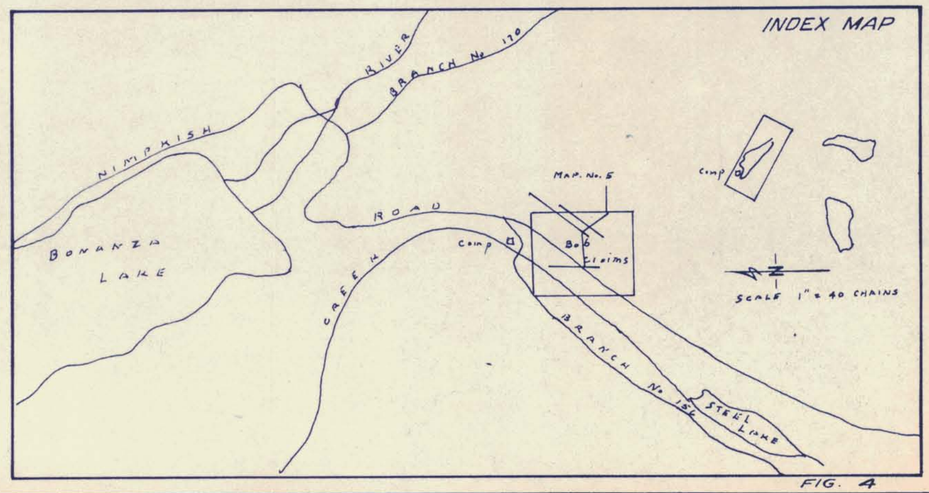
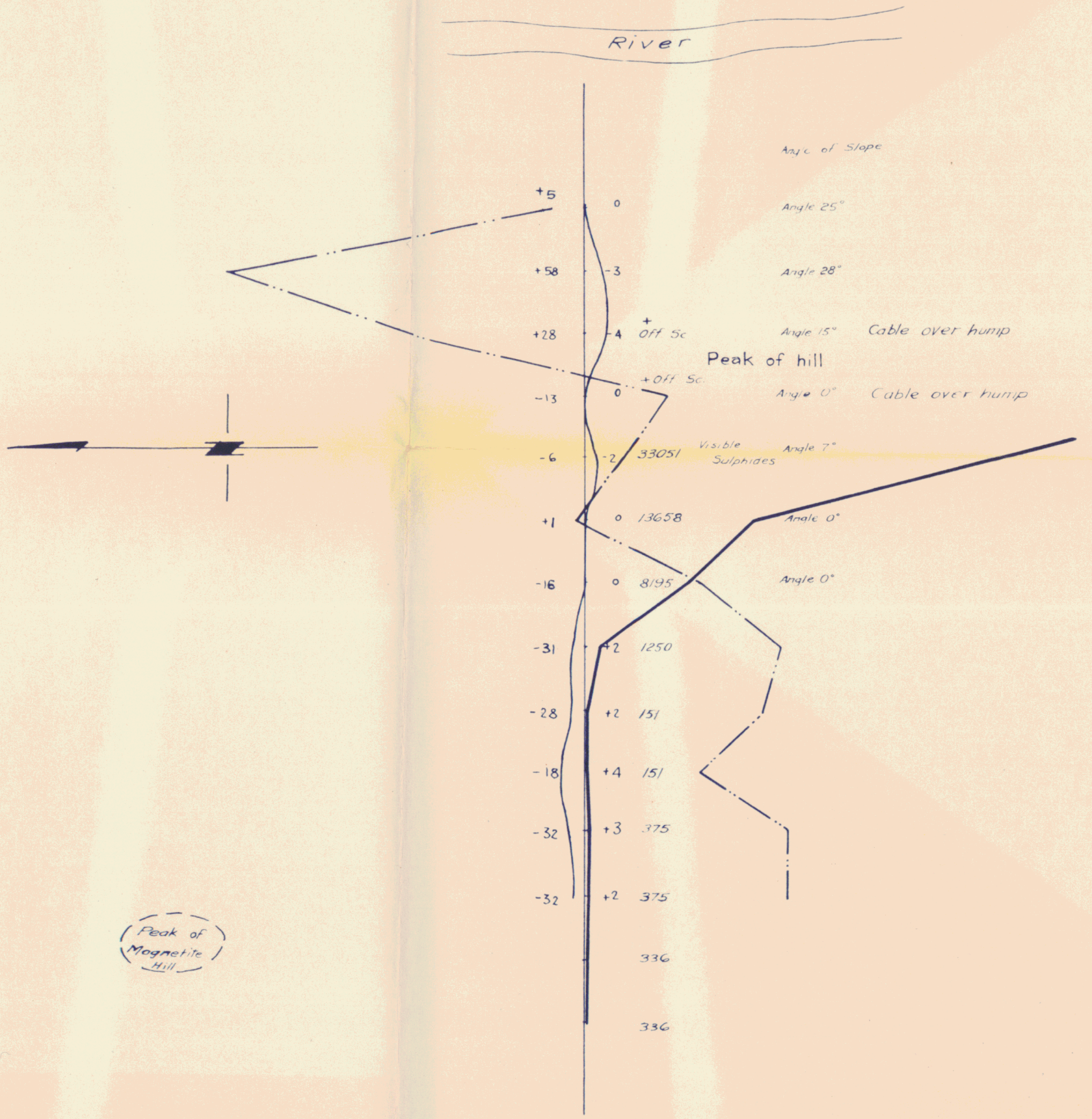


FIG. 4



(Peak of Magnetite Hill)

LEGEND

In phase
Out of phase } 1" = 20 %
Magnetometer profile 1" = 10,000 g.
Ronka — Trasmitter == East end

FALCONBRIDGE NICKEL MINES LIMITED

BONANZA LAKE B.C.

EFFECT OF MAGNETITE ON RONKA RESPONSE

100' 0 100' 200 300

Fig 5 Aug 1962

30268 gammas on line

— + — +

76 2188
75 2231 1772 1559
74 1626 1495 1423 1192 964 1083 964 1560 1582
71 1582 1582 1582 1668 2372 1888
1538 70 2533 2375 1862 1518 932 148 158 780 1890 2290 2149 67 114 1345 932 1147 1246 2685 3066 2490 B 65 141 1132 1582
64 1538
63 1586 1732
62 1659 997 1163 1163
61 1625 1673 1288 1384 682
59 1507 736 1470 1474 1288 852 975
55 1073 747 357 318 986 156 14 119 325 860 1506 1126 388 1068 378 986 986 617 51 1088

Magnetite Float

110 2110
2523 932 3/4 2450 2639
109 1192 1450 1563
108 1508 1736
107 1954 1585 1670
106 2235
105 1833 1866 1476 1455 2192 2378
103 2388 2341 2382 864 419 10 138 308
101 542 1514 1268 2745 1634 2930 1650 1942 2340 1432 868 683 977
96 771 799 977
95 1053 629 705
94 506 216 332 474 164 31 65 119 119 249 612 858 890 988 43 467 1097 1162 1504 1476 1080 1076

← (Diorite ?)

← Reading 200' bottom of cliff - Basic (Diorite ?)

O Magnetite Float

MAGNETOMETER SURVEY - ASKANIA

AUG. 1962

Fig. 6

FALCONBRIDGE NICKEL MINES LIMITED

BONANZA LAKE B.C.

MAGNETOMETER TEST ON

WILLIAMS MAGNETITE FLOAT

200' 0' 200' 400' 600'