



REPORT ON AIRBORNE GEOPHYSICAL
SURVEY
HILL AND RUST CLAIMS
Sheet 105 K-5 and 6
Approximately 133° 30' W, 62° 25' N.
Vangorda Creek Area
Yukon Territory

Survey Carried Out July, 1966
By
Lockwood Survey Corporation Limited

Report and Interpretation
By
Watts, Griffis and McOuat Limited

C. K. O'Connor, B.A.Sc.,
Supervising Engineer



Toronto, Ontario
March 1, 1967

This report has been examined by
the Geological Evaluation Unit.
Approved as to technical worth by:

D. W. H. Murray
RESIDENT GEOLOGIST

Approved as to cost in the amount
of \$ 2822.30

for [Signature]
FIELDING MINING ENGINEER

Accepted as representation work
under Section 53(4) Yukon Quartz
Mining Act.

[Signature]
COMMISSIONER OF YUKON

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MAP POCKET

Electromagnetic Map	scale - 1" = 1/4 mile
Aeromagnetic Map	scale - 1" = 1/4 mile

SUMMARY AND CONCLUSIONS

An airborne geophysical survey using magnetic and electromagnetic techniques was carried out by Lockwood Survey Corporation Limited over the Hill and Rust claim groups in July, 1966.

The claims are located in the Vangorda Creek area of the Yukon Territory, about six miles northwest of, and on strike with the "Faro" claim group of Anvil Mining Corporation on which a deposit containing at least 40 million tons of 10 percent lead-zinc plus silver is being developed.

The survey outlined a number of anomalous features, both magnetically and electromagnetically, which may represent sulphides and therefore warrant further work.

RECOMMENDATIONS

A program of ground follow-up exploration is recommended. Since the anomalies obtained in the airborne geophysical survey are spread over most of the claim group, the entire group should be gridded with 400-foot lines, rather than selecting individual areas for detail work within the group as a whole.

Magnetometer and electromagnetic surveys at 100-foot station intervals should be done. Soil geochemical sampling should be done at 200-foot intervals initially, with appropriate detail. Geological mapping is essential.

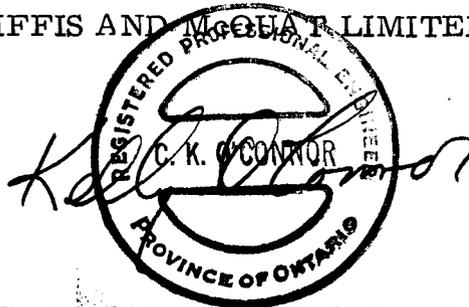
Particular attention should be paid to the strong magnetic anomaly in the eastern part of the Hill group, the northeast-striking fault crossing the Rust group, and the north-striking trend of the magnetic anomalies and weak to medium conductors crossing the centre of the property.

Following this work which will cost in the order of \$45,000, certain areas can be selected for gravity surveys which will cost about \$400 per mile, all inclusive. This kind of survey is most definitive for the type of deposits found in the Vangorda area.

Diamond drilling of the promising targets will cost about \$20.00 per foot, all inclusive.

Respectfully submitted,

WATTS, GRIFFIS AND McGEHEE LIMITED



March 1, 1967
Toronto, Ontario

C. K. Connor, B.A.Sc., P.Eng.

INTRODUCTION

A combined airborne magnetometer and electromagnetic survey was carried out by Lockwood Survey Corporation over the Hill and Rust claims in the Vangorda Creek area of the Yukon Territory, in July, 1966.

The purpose of the survey was to try to detect deposits of sulphides which might contain economic mineralization.

The survey data was compiled by Lockwood and is presented herewith in two maps, on a scale of one inch to one-quarter mile.

PROPERTY, LOCATION AND ACCESS

The property covered by the survey consists of 70 contiguous unpatented mineral claims known as the Hill and Rust claims, located between Rose Creek and Anvil Creek in the Vangorda Creek area of the Yukon Territory.

The claims are about 130 miles northeast of Whitehorse. They can be reached from Whitehorse by road to Ross River or Anvil Mining Corporation's "Faro" camp and thence by helicopter to the property, or by fixed-wing aircraft from Whitehorse to the general area and then by helicopter to the property.

There are no roads or large lakes providing access directly to the property.

GENERAL GEOLOGY AND BACKGROUND

The claims are indicated on the geological map (G.S.C. Map No. 13 - 1961, "Tay River") to be underlain by Mississippian schists on the flank of a Cretaceous granitic batholith. The schist group strikes northwest and dips southwest and consists variously of quartz-sericite, chlorite, graphite and phyllite, with minor argillite and limestone.

A major lead-zinc-silver deposit was located in the summer of 1965 by Dynasty Explorations Limited on the "Faro" claim group, about six miles on strike to the southeast.

A feasibility report is being prepared for Anvil Mining Corporation, the Cyprus-controlled company which is acting as the operating company, to develop the deposit. The results of this report are expected to be made public shortly.

Ore reserves of at least 40 million tons of better than 10 percent combined lead-zinc and one ounce of silver per ton have been announced.

SURVEY DATA

The actual airborne survey was carried out on or about July 10, 1966.

A Bell 204 B turbo helicopter supplied by Okanagan Helicopters of Vancouver was used to tow the 33-foot bird containing the Lockwood instrumentation.

Despite the relief on the property of up to 2,000 feet, this helicopter had no difficulty in maintaining a ground clearance of about 200 feet. This factor is considered to have significantly improved the penetration and resolution of the survey over those carried out in the same area previously using a smaller helicopter.

Flight-line spacing was established on a photomosaic at 1,000 feet and was maintained reasonably well.

Both the electromagnetic and magnetic maps are contoured.

Contours on the electromagnetic survey map represent the amplitude of the in-phase response of the resultant field, expressed in parts per million of the primary field.

The frequency used was 4,000 c. p. s. The ratios appearing on the contour map refer to amplitude of the in-phase over the out-of-phase components of the resultant field and are a measure of the conductivity.

DISCUSSION OF RESULTS

Magnetometer Survey

The magnetometer survey confirmed that the strike of the geological formation is northwesterly.

Three prominent anomalies were located. The largest is just touching the southwest corner of the Rust group, lying mostly outside the claim group, and has a magnitude of 500 gammas above background. This anomaly is probably caused by an ultrabasic rock. A second somewhat annular anomaly of about 300 gammas is located in the south-central part of the Rust group and is also thought to be caused by an ultrabasic plug. A fault is postulated to trend northeasterly through the Rust claim group, offsetting with left-hand movement, the above two anomalies. The third anomaly is located in the eastern portion of the Hill claim group and has a peak magnitude of about 2,200 gammas above background.

Although this anomaly is undoubtedly caused by magnetite, the irregular nature of it suggests that the magnetite is not evenly distributed throughout an ultrabasic rock, but more probably is locally concentrated within the schists, where it may be associated with sulphide minerals. A fault is also indicated by topography and the magnetics trending northeasterly along the eastern flank of this anomaly.

A number of smaller anomalies of lesser magnitude are present. Although they are not individually described, their occurrence may be significant and each of them should be checked in any ground follow-up program.

It is known that the magnetics associated with the sulphide deposits located to-date in the Vangorda Creek area, are erratic and relatively weak, and of themselves, are not a definitive indicator of sulphides.

Electromagnetic Survey

There are few strong electromagnetic conductors within the property boundaries. The strongest are located in the eastern part of the Hill group and correspond directly with the highest magnetic anomaly, suggesting that the conductors are probably caused by magnetite, although pyrrhotite may be present.

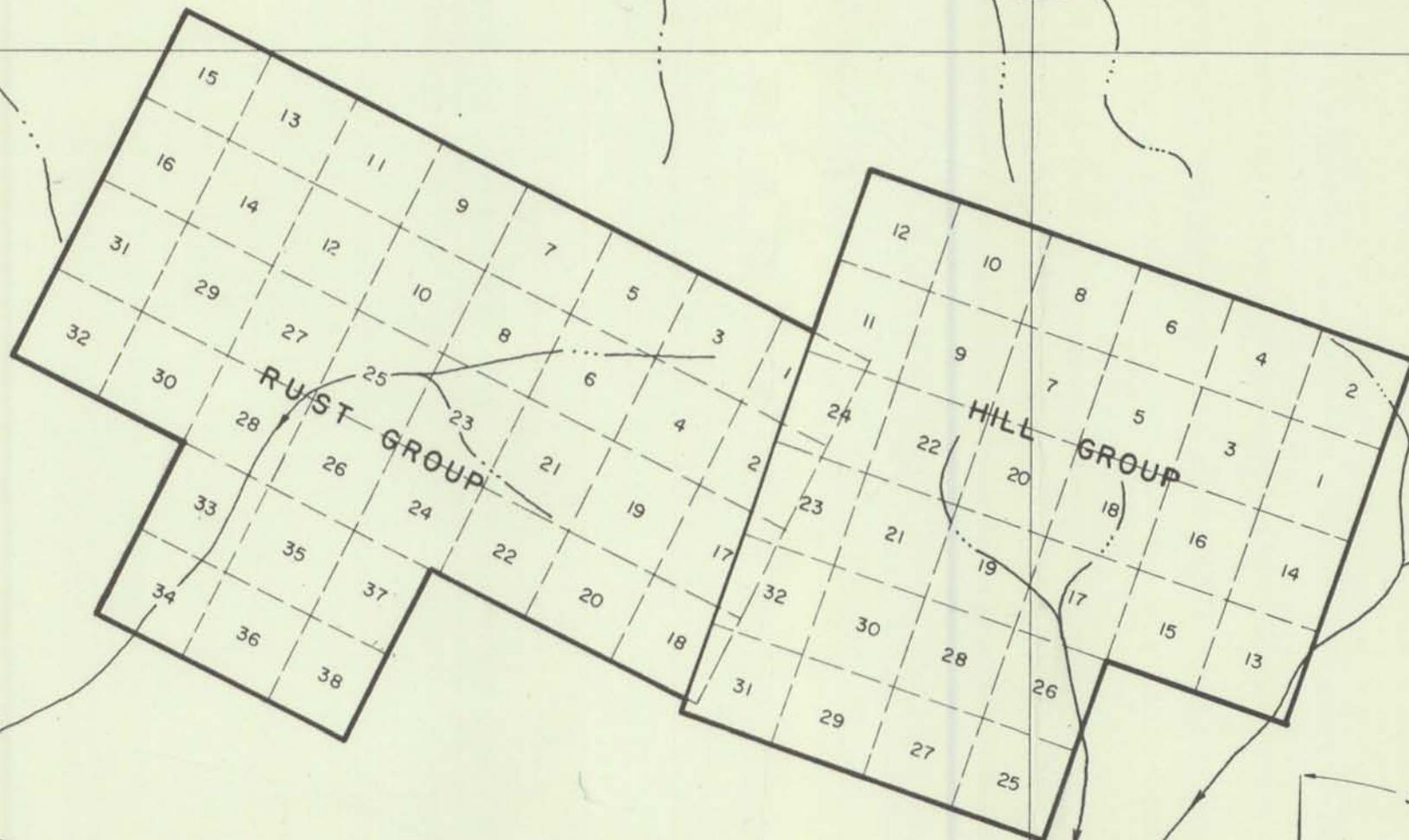
There are no conductors which appear to be due to graphite.

A number of low ratio conductors along the southern part of the map outside the claim boundary are probably due to overburden or wet ground.

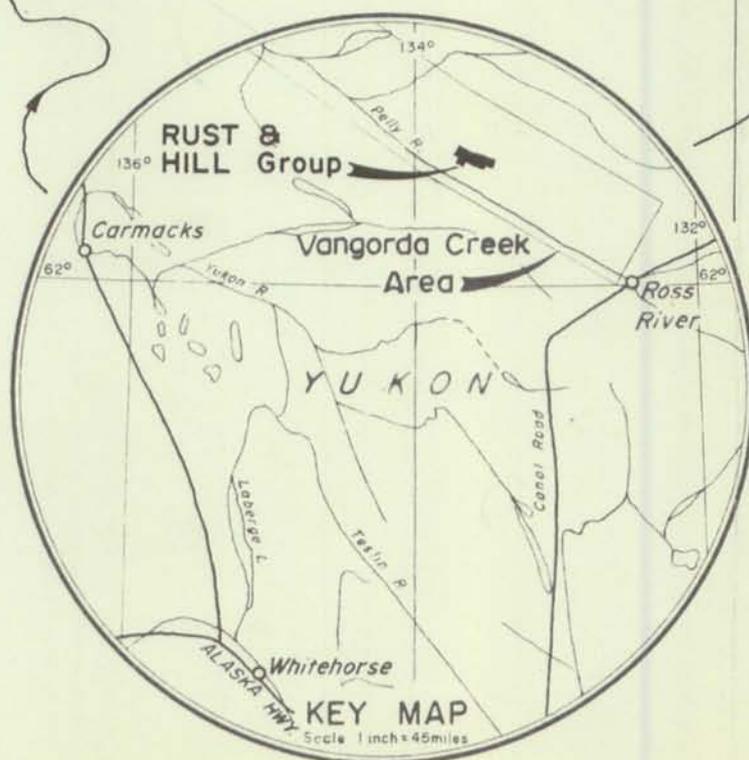
Several conductors with ratios of 1.0 or slightly greater are located along the presumed location of the fault crossing the Rust claim group, and another series is located along a north-south trend across the eastern part of the Rust claim group, and the western part of the Hill claim group. The latter series corresponds to an area of small magnetic highs showing the same trend, and although there is no direct correlation, this transverse relationship is unique and warrants further investigation.

62°25'

135°30'



Rose Creek



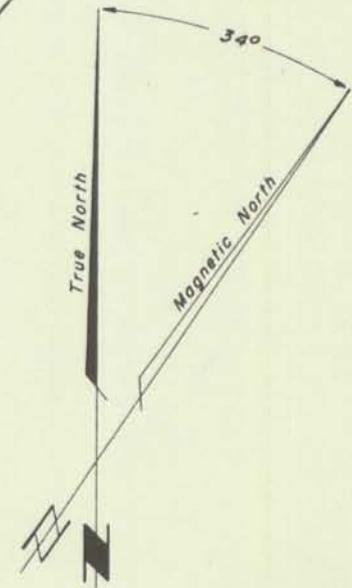
RUST & HILL Group

Vangorda Creek Area

YUKON

KEY MAP

Scale 1 inch = 45 miles



WATTS, GRIFFIS & McQUAT LIMITED

LOCATION MAP RUST & HILL CLAIM GROUP

VANGORDA CREEK AREA
Whitehorse Mining District

— YUKON TERRITORY —

Scale 1" = 1/2 mile

March 1967

CERTIFICATE

I, Caven Kelly O'Connor, hereby certify:

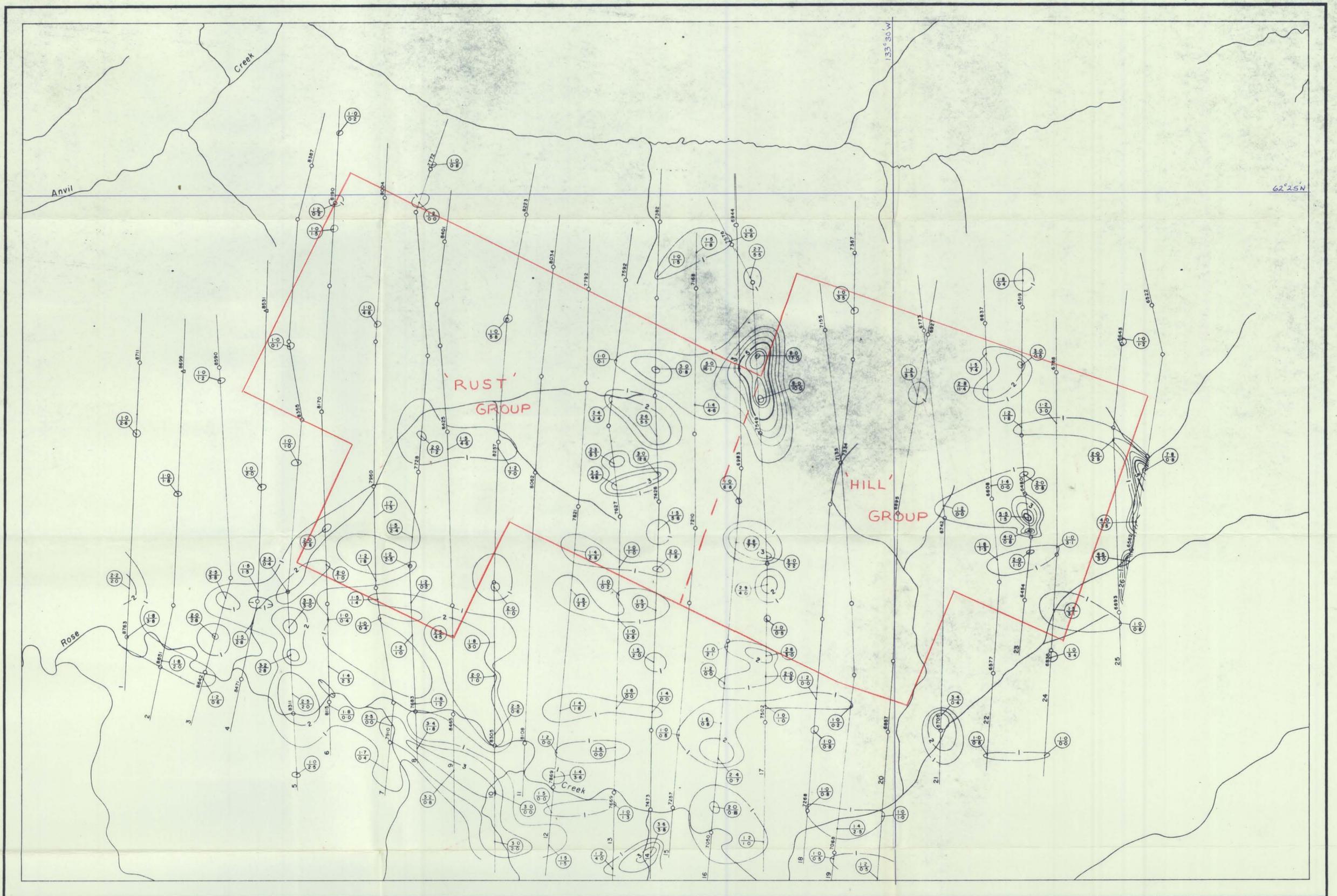
1. That I am a geological engineer and reside at 278 Princess Avenue, Willowdale, Ontario.
2. That I graduated from the University of Toronto in 1962 with the degree of Bachelor of Applied Science.
3. That I am a registered Professional Engineer in the Provinces of Ontario and British Columbia.
4. That I have been continuously engaged in my profession for five years.
5. That the foregoing report is based on the writer's personal experience in the Vangorda Creek area, and direct supervision of the survey described in this report.
6. That I have no interest, nor do I expect to receive any interest, directly or indirectly, in the property described in this report, nor in the securities of any company which may acquire the property.

Toronto, Ontario
March 1, 1967



C. K. O'Connor, B.A.Sc., P.Eng.

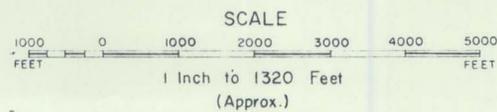
AIRBORNE GEOPHYSICAL SURVEY



MEAN FLIGHT LINE SPACING ----- 1000 FEET
 MEAN TERRAIN CLEARANCE ----- 200 FEET
 ELECTROMAGNETIC CONTOURS 5, 10, 15 etc. -----
 1, 2, 3, 4 etc. -----
 NEGATIVE CONTOURS -----
 -5, -10 etc. -----
 -1, -2, -3, -4 etc. -----
 FIDUCIAL POINTS ----- 03690
 FLIGHT LINES -----

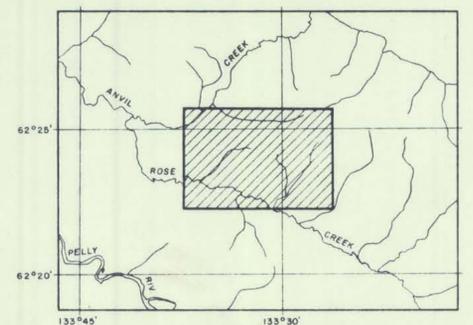
The contours represent amplitude of in phase response of the resultant field expressed in parts per million of the primary.
 The figures $\frac{2.3}{0.2}$ represent amplitude in phase component quadrature component
 The frequency of the primary current is 4000 cycles per second.

HILL & RUST AREA YUKON TERRITORY

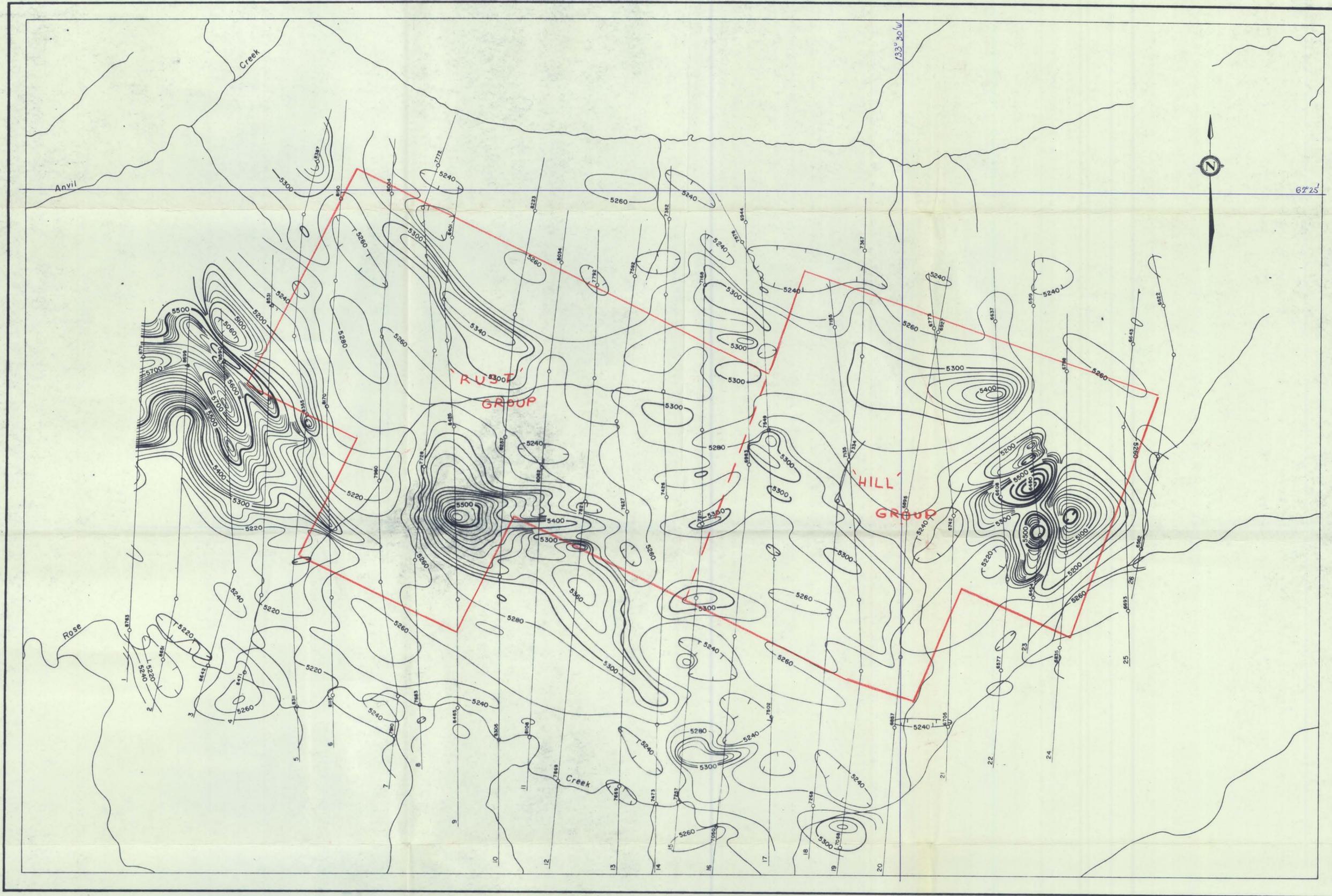


ELECTROMAGNETIC MAP

Flown and Compiled by
 LOCKWOOD SURVEY CORPORATION LIMITED
 TORONTO, CANADA
 1966

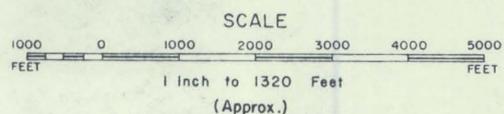


AIRBORNE GEOPHYSICAL SURVEY



- CONTOUR INTERVAL 20 GAMMA
- MEAN FLIGHT LINE SPACING 1000 FEET
- MEAN TERRAIN CLEARANCE 200 FEET
- 500 GAMMA CONTOUR
- 100 GAMMA CONTOUR
- 20 GAMMA CONTOUR
- MAGNETIC LOW
- FIDUCIAL POINTS
- FLIGHT LINES

HILL & RUST AREA YUKON TERRITORY



AEROMAGNETIC MAP

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TORONTO, CANADA
1966

