

647

REPORT OF GEOPHYSICAL SURVEY

JAN #13, JAN #1, and BARB CLAIM GROUPS

(#5767, #5773, #5774, #5775, #5776)

(#5747, #5748)

(#5750, #5752, #5754, #5755, #5756,
#5757, #5758, #5759, #5760)

58° N 131° E

ATLIN MINING DIVISION

By: G. Gutrath, B. Sc.

Supervised By: D. M. Cannon, P. Eng.

April 14, 1965

C O N T E N T S

	<u>Page</u>
Introduction	1
Location	2
Survey Equipment	2
Survey Procedure	3
Survey Performed	3
Results	4
Map ----- Airborne Magnetic Survey - Jan and Barb claims	
	647-1

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. **647** MAP

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INTRODUCTION

During June, 1965, a detailed airborne magnetic survey was carried out over the Jan and Barb Claim groups.

The base camp was located on Kennicott Lake, approximately 20 miles northwest of Telegraph Creek, B. C. The camp was serviced by Coast Range Airways "Beaver", from Atlin, B. C.

The airborne magnetometer was transported by a Bell G-2 helicopter chartered from Klondike Helicopters, Whitehorse, Yukon. - cf P. 3?

G. Gutrath, geological engineer, and A. W. Giesbrecht, assistant, carried out the survey under the overall supervision of D. M. Cannon.

Dr. Brant, consulting geophysicist, was responsible for the final interpretation of the results.

LOCATION

The Jan No. 13, Jan No. 1, and Barb claim groups are located at $131^{\circ} 53'$ East Longitude, and $58^{\circ} 13'$ North Latitude, about 34 miles northwest of Telegraph Creek, B. C.

SURVEY EQUIPMENT

The airborne magnetometer used for the survey was a Varian nuclear precession magnetometer that has been refined and improved by Mr. G. McLaughlin, electronic engineer, on the geophysical staff of Newmont Exploration Limited, Danbury, Connecticut.

The following is a brief description of the instrument by Dr. A. A. Brant, geophysicist, Newmont Exploration Limited.

"A cylindrical bottle of about one pint containing kerosene is placed within a direct current bearing coil and is oriented approximately horizontal in a bird. Direct current is pushed through the coil for approximately $\frac{1}{4}$ to $\frac{1}{2}$ second. In this time, the proton orbit planes of the hydrogen tend to align perpendicular to the coil axis. When the current is shut off, these orbit planes return to their random orientation generating a die away envelope at a frequency of about 1 c.p.s. for each 25 gammas of field present. Thus in a field of 60,000 c.p.s. the frequency generated would be 2,400 c.p.s. This signal is picked up in the same coil, scaled, converted to gammas, and recorded on a chart by step units plus chart indication. A reading is made every $\frac{1}{2}$ to 1 second so that the chart record appears as a series of points or strokes.

The sensitive bottle is placed in a bird and towed some 50 feet below a helicopter. A step switching and frequency control box is provided, and a pen and ink recorder. Total weight is about 40 pounds. Readings are good to ± 5 gammas."

The instrument measures the total intensity of the earth's field in gammas. The average total field in the area reported was approximately 57,000 gammas.

SURVEY PROCEDURE

The magnetometer was mounted on a Bell G-4 helicopter CP-LIM, under charter from Klondike Helicopters Limited, Whitehorse, Yukon. The pilot, John King, was responsible for maintaining the 500 foot elevation interval and for following a predetermined contour flight line. The magnetometer was operated by G. Gutrath, B. Sc., University of British Columbia, 1960, who has four years experience with airborne magnetic surveys.

Initial installation of the magnetometer in the helicopter was accomplished by Mr. G. McLaughlin. In addition, a series of test lines were also run in the Kennicott Lake area.

For this survey, the instrument bird was towed at 40 to 50 miles per hour and at an altitude of 500 feet above ground level.

Air photographs were used for navigation. In order to plot the flight lines on the map, all streams and prominent topographic features were marked on the recorder chart by a manually operated fiducial marker. Notes, regarding observations important to the interpretation of the chart or altitude readings from the helicopter altimeter, were recorded on the chart while it was operating.

SURVEY PERFORMED

The complete airborne survey in the Sheslay - Hackett River drainage covered 160 square miles. Of this total area, 33 square miles of magnetic coverage is shown on the enclosed map.

Between June 4th and June 8th, 10 survey lines, Nos. 1 to 10 inclusive, were flown.

After completion of the flights, the magnetic charts were edited by G. Gutrath and the results checked by D. M. Cannon. The results were compiled and drafted on contour maps by A. W. Giesbrecht.

Final interpretation of the survey results was made by Dr. A. A. Brant.

The results of the survey are shown on the accompanying map contained in the folder of this report.

RESULTS

1. The general magnetic background in this area is established at approximately 57,800 gammas. This was the datum figure used for survey purposes.
2. The Jan No. 1 and Jan No. 13 claim group covers a 1,000 gamma anomaly occasioned by a medium grained, intrusive syenite complex in which the magnetite is both disseminated and in narrow veinlets.
3. The anomalous area to the south and west of the Barb claim group is occasioned by a magnetite rich, medium to coarse grained, intrusive diorite-syenite complex.

G. Gutrath
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D. M. Cannon
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ASSESSMENT REPORT
NO. 647 MAP 1

AIRBORNE MAGNETIC SURVEY
JAN CLAIM GROUP
BARB CLAIM GROUP
ATLIN MINING DIVISION

Legend:
 Isogams 200 gamma interval
 -57,800-
 Flight lines with numbered
 fiducial

SCALE: 1" = 1000'
 Operator: G.Gutrath
 Supervisor: D.M.Cannon
 P.Eng.
 Surveyed: JUNE 1964

647

April 14, 1965

