

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
General	1
1979 Program	1
SURVEY RESULTS	3
REFERENCES	4

FIGURES

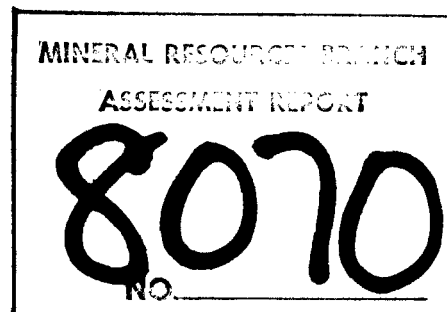
Figure 1	Location Map	1:50,000	2
----------	--------------	----------	---

APPENDICES

Appendix I	Statement of Qualifications
Appendix II	Airborne Survey Techniques
Appendix III	Specifications: Sabre Airborne Magnetometer
Appendix IV	Summary of Costs
Appendix V	Affidavit Supporting Summary of Costs

MAPS

Map No. 1	Airborne Magnetometer Survey	103 C-16-E, Part 1	1:20,000
-----------	------------------------------	--------------------	----------



'80-# 296-
#8070

AIRBORNE MAGNETOMETER SURVEY

ON THE

BLUE CLAIMS 3, 4, 5, 6 - 2 POST MINERAL CLAIMS

SKEENA MINING DIVISION

N.T.S.

103 C 16 - E

LATITUDE:

52⁰ 51' 30" N

LONGITUDE:

132⁰ 09' 30" W

FOR:

CHARLES O'BRIEN

AND

MOUNTAINEER MINES LTD.

BY:

R. W. WOOLVERTON, P. ENG.

EVERGREEN EXPLORATIONS LTD.

JUNE 20, 1980.

VANCOUVER, B.C.

FIELD WORK DONE:

DECEMBER 15, 1979.

AIRBORNE MAGNETOMETER SURVEY
ON THE
BLUE CLAIMS 3, 4, 5, 6 - 2 POST MINERAL CLAIMS

INTRODUCTION

General

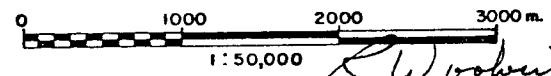
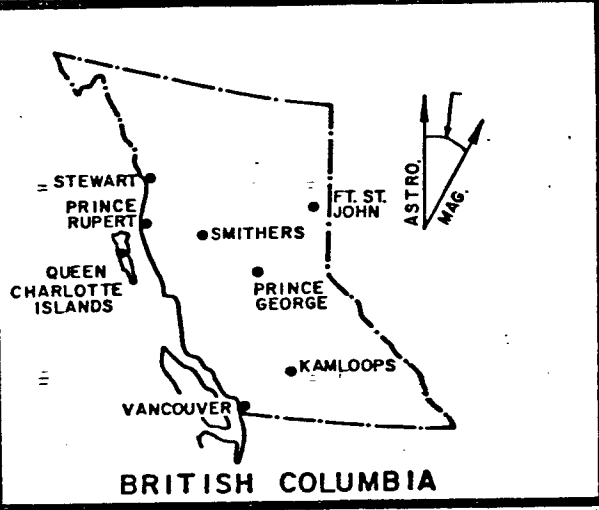
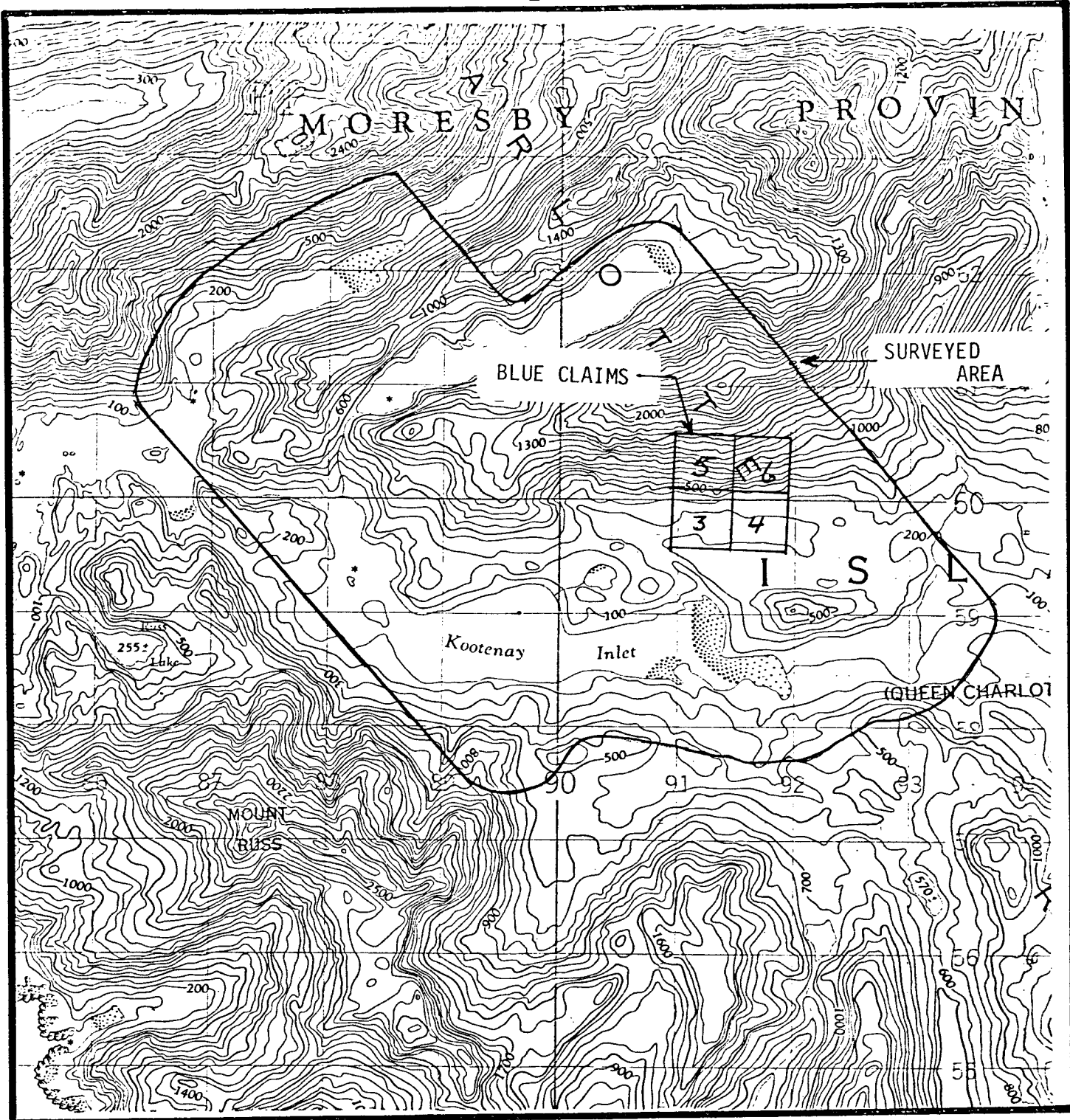
The BLUE CLAIMS are about 1.2 kilometres north of the east end of Kootenay Inlet, about 15 kilometres northwest of Tasu, on the west side of Moresby Island, Queen Charlotte Islands, British Columbia. They can be reached by boat from Queen Charlotte City during the calm summer months. However, access is normally by helicopter or amphibious Beavers from the Sandspit airport.

Gold was recovered in the early twenties from five narrow, more or less parallel veins within a 350 foot-wide zone (Sutherland Brown, B. C. Dept. of Mines Bulletin 54). The quartz veins strike northeasterly and are sparsely mineralized with pyrite, chalcopyrite, and some fine free gold.

1979 Program

Kootenay Inlet is about 4 kilometres long and is underlain by Triassic-Jurassic limestone. However, the veins on the BLUE CLAIMS cut Karmutsen volcanics. In order to trace the contact between these two units, the heavily forested area around Kootenay Inlet was surveyed with a helicopter-mounted magnetometer.

A total field proton magnetometer was mounted in a Queen Charlotte



R. Woolvert

LOCATION MAP 20 June/80
AEROMAGNETIC SURVEY
BLUE CLAIMS

QUEEN CHARLOTTE ISLANDS, B. C.

TO ACCOMPANY A REPORT BY:
 R. W. WOOLVERTON, P. ENG.; JUNE 30/80.

EVERGREEN
 EXPLORATIONS LTD.

SKEENA M. D.
 103 C - 16 - E

FIGURE 1


Helicopter's Hughes 500-D. Equipment specifications and surveying details are included in the Appendix to this report. Northwest-southeast survey lines were flown about 250 metres apart with the "bird" just above the trees. Fifty-three line miles of surveying was completed. The magnetometer readings were plotted on enlarged and filtered copies of government 1:50,000 topographic maps. The data was contoured at 100 gamma intervals and the resulting maps were reduced to 1:20,000 for convenient correlation with the latest 1:20,000 government air photos available for the area. Copies of the aeromagnetic maps are included in a pocket at the back of this report.

SURVEY RESULTS

As expected, the magnetic readings obtained over the Karmutsen volcanics are higher than those obtained over the limestone. Using Sutherland Brown's map (Dept. Mines Bulletin 54) as a guide, and disregarding mag lows that are dipoles or reflect increased terrain clearance over lakes and inlets, the volcanics are generally reflected by magnetic values above 1900 gammas and the limestone by values below 1900 gammas. However, Sutherland Brown's plot of the "approximate" location of the contact between the two rock types agrees with the magnetics for only the western half of the survey area.

About 1400 metres west of the old showings on the BLUE CLAIMS, the magnetics suggest that the contact is about 400 metres north of where it's shown on Sutherland Brown's map. Similarly, about 1600 metres southeast of the old showings, readings of 2000 gammas suggest volcanics about 500 metres south of the "assumed" contact.

Respectfully submitted,



R.W. Woolverton, P. Eng.
EVERGREEN EXPLORATIONS LTD.

June 20, 1980.

REFERENCES

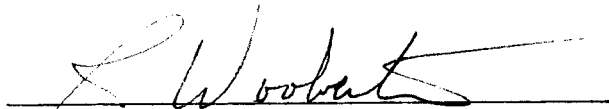
Sutherland Brown, A (1969): B. C. Department of Mines,
Bulletin 54, Geology Map.

STATEMENT OF QUALIFICATIONS

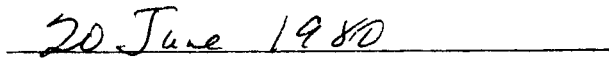
STATEMENT OF QUALIFICATIONS

I, ROY W. WOOLVERTON, Geologist, of 5424 Halifax Street, Burnaby, British Columbia, do hereby certify that:

- 1) I am a 1960 BSc graduate of the University of British Columbia.
- 2) I have worked as a mineral explorationist since graduation.
- 3) I have been a Registered Professional Engineer of the Province of British Columbia since 1969.
- 4) I personally conducted the airborne survey of the BLUE CLAIMS and supervised the drafting of the data.



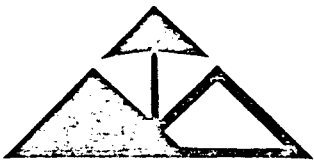
ROY W. WOOLVERTON, P. ENG.



DATE

APPENDIX II

AIRBORNE SURVEY TECHNIQUES



Evergreen Explorations Ltd.

• R. WOOLVERTON
GEOLOGIST, P.ENG.

• R. C. O'BRIEN
FIELD SUPERVISOR

CONTRACT EXPLORATION

• 5424 HALIFAX ST., BURNABY 2, B.C., CANADA, PHONE - 299-6998

AIRBORNE SURVEY TECHNIQUES

Evergreen Explorations Ltd.'s airborne geophysical system can be mounted in any helicopter that has two forward seats next to the pilot and sufficient space ahead of them for the geophysical instrument console. A Hughes 500-D is preferred. A fifty foot cable connects the instrument to a "bird" which is towed under the aircraft. The torpedo-shaped bird is approximately five feet long, eight inches in diameter, with four tail fins mounted inside a 12 inch diameter tail section. The bird weighs approximately 50 lbs and, except for an orange nose, is painted with a lampblack lacquer mixture to reduce static build-up.

The magnetometer is connected to a Bausch and Lomb V.O.M. -5 chart recorder which is normally operated at a chart speed of 5 inches per minute. The recorder is placed on the seat between the pilot and the operator so that the ground control fiducial points and other information can be written on the chart during flight.

Ground control for an airborne survey is achieved by using "flight strips" which are air photo strip-mosaics constructed with topographic map control so that straight lines on the flight strips are approximately straight lines on the ground. This isn't always achieved, of course, due to distortion in the photos, and more often, scale variations produced by topographic relief. After the flight lines are plotted on the flight strip mosaic they are flown as exactly as possible by combining a carefully followed aircraft heading with visual corrections where necessary. As the helicopter passes over each swamp, creek, or other recognisable feature (fiducial point), that can be

located on the flight strip, the operator triggers the event marker which simultaneously produces a small mark on the edge of the mag recorder chart. The fiducial points are consecutively numbered on the mag chart during flight and are also plotted on the flight strip. They are later replotted on a base map and become the control points for making a magnetic contour map.

Flight lines rarely cross one another using this technique, since it is a simple matter to break-off when the aircraft has veered too far off line, fly back to the last fiducial point and try again. In flat, featureless areas its often necessary to fly a line several times until it "comes out" where it is supposed to. Even in these extreme cases, experience over the past decade has shown that magnetic features can be located to well within 100 metres.

Survey lines are flown from 200 to 400 metres apart depending upon the detail required. The "bird" is kept as close to the tree tops as possible. In steep mountainous areas, terrain clearance is limited by the climbing ability of the helicopter so that as a general rule the magnetic readings obtained over mountain peaks and ridges are slightly high and those obtained over narrow valleys are correspondingly low.

Periods of magnetic field disturbances due to sunspot activity are avoided by monitoring the forecasts on short wave station WWV, in Boulder, Colorado. Diurnal variations are eliminated by zeroing the magnetometer at altitude immediately after take-off. If this is done at about the same location on each flight, it in effect becomes a base station.

SPECIFICATIONS: SABRE AIRBORNE MAGNETOMETER

SPECIFICATIONS: SABRE AIRBORNE MAGNETOMETER

TYPE: Proton Precession.

RANGE: 20,000 to 75,000 gammas.

REPETITION RATE: Approximately 1 second.

OUTPUT: Designed to operate into any potentiometric chart recorder with 0 - 0.1 volt scale.

DISPLAY: Digital dial + analog meter. Meter shows last 1000, 2000, or 5000 gamma of total field depending on scale selected. Zeroing system allows chart recorder pen to be positioned anywhere on paper so that if pen is centered, the resulting scales that can be selected are ± 500 , ± 1000 , and ± 2500 gamma. These scales are standard but virtually any other can be provided.

RESOLUTION: Resolution of instrument itself is better than 1 gamma but ultimate resolution depends on accuracy of chart recorder.

DETECTOR: Kerosene-filled coil, 9cm x 8cm diameter. Inductance 60 millihenries, resistance 7.5 ohms, weight 2.2 kilograms.

OPERATING TEMPERATURE:

 Instrument: -10°C to $+60^{\circ}\text{C}$.
 Detector: -40°C to $+60^{\circ}\text{C}$.

DIMENSIONS: Instrument Console: 30x10x25cm, weight 3.5 kilograms.

POWER SOURCE: 2 - 12 volt - 20 AH lead-acid batteries.

MANUFACTURER: Sabre Electronic Instruments Ltd.,
 4245 East Hastings Street,
 Burnaby, B. C.

Phone: 291-1617

SUMMARY OF COSTS

SUMMARY OF COSTS

AIRBORNE SURVEY - BLUE CLAIMS

53 line miles at \$35/line mile	\$ 1,855.00
Map enlarging and Report Preparation	<u>500.00</u>
TOTAL COST	<u><u>\$ 2,355.00</u></u>

June 20, 1980.

AFFIDAVIT SUPPORTING SUMMARY OF COSTS

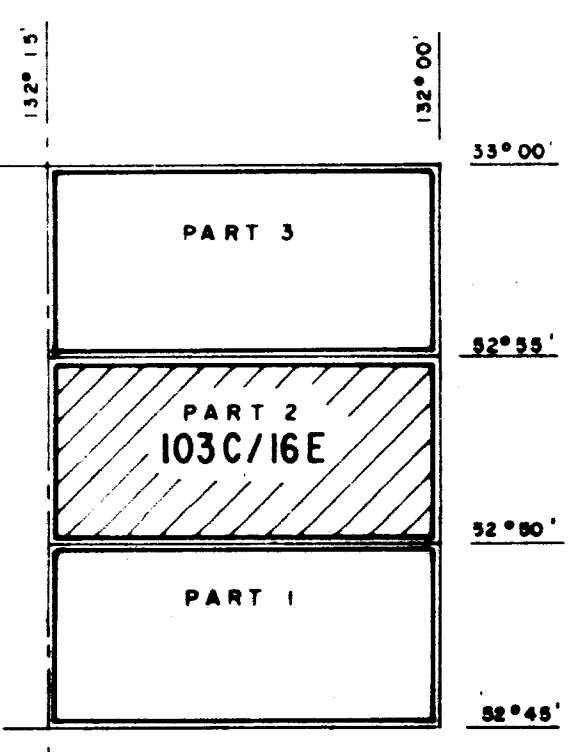
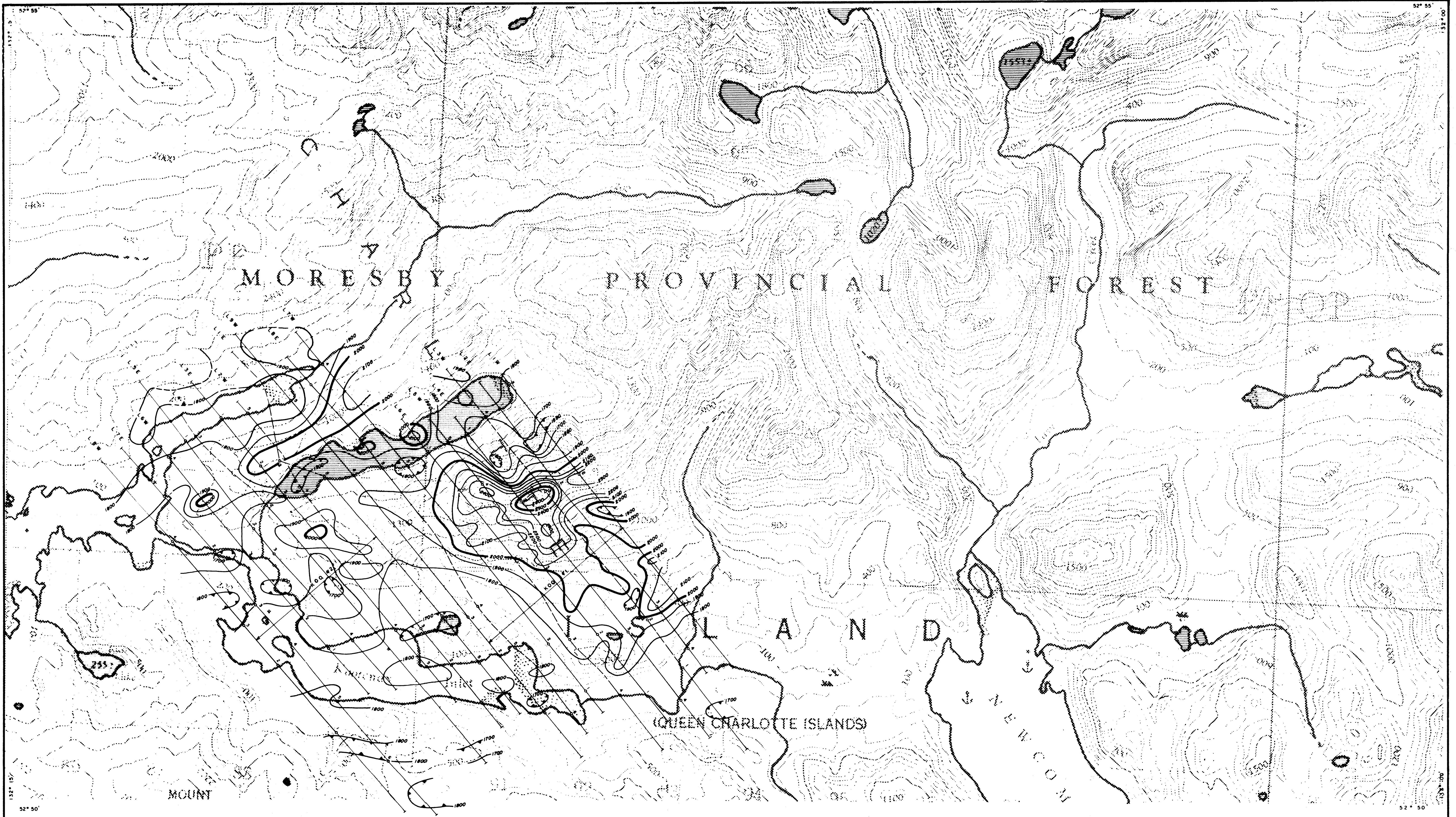
AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, ROY W. WOOLVERTON, Geologist, Evergreen Explorations Ltd., of Burnaby, British Columbia, do hereby state, that, to the best of my knowledge and belief the Statement of Costs in this report (AIRBORNE MAGNETOMETER SURVEY ON THE BLUE CLAIMS 3, 4, 5, 6 - 2 POST MINERAL CLAIMS) is a true account of expenditures from airborne surveys on the BLUE property.

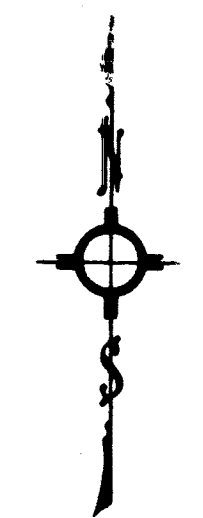


ROY W. WOOLVERTON

20 June 1980
DATE



KEY MAP



LEGEND

- FLIGHT LINES WITH IDENTITY POINTS & NUMBERS
- 500 GAMMA CONTOURS
- 100 GAMMA CONTOURS
- MAGNETIC DEPRESSION
- MAGNETIC INTENSITY IN GAMMAS PLUS 55,000 EQUALS ACTUAL INTENSITY
- LAKE
- SWAMP
- INSTRUMENT - HELICOPTER MOUNTED SABBRE PROTON MAGNETOMETER
- MEAN TERRAIN CLEARANCE 60 METERS

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8070
NO.

MOUNTAINEER-AU-1979 LIMITED PARTNERSHIP
BLUE CLAIMS - KOOTENAY INLET AREA
QUEEN CHARLOTTE ISLANDS AREA
SHEET 103C/16E
PART 1
AIRBORNE MAGNETOMETER SURVEY
CONTOUR INTERVAL 100 GAMMAS
SKEENA M.D., B.C.

SCALE IN METERS
0 500 1000 1500

SURVEY BY EVERGREEN EXPLORATIONS LTD.

OCTOBER - DECEMBER 1979

R. W. Roberts
20 JULY 1980

PLATE 103C/16E-1

MAP 10. 1