

ASSESSMENT REPORT  
on  
GEOLOGY AND GEOPHYSICS

MILL CLAIMS  
Sawmill Creek Area

FORT STEELE MINING DIVISION

NTS 82 F/9 E

Latitude  $49^{\circ} 32'N$   
Longitude  $116^{\circ} 02'W$

by

PETER KLEWCHUK  
GEOLOGIST

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**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**22,106**

## TABLE OF CONTENTS

	Page
1.00 INTRODUCTION	1
1.10 Location and Access	1
1.20 Physiography	1
1.30 History of Previous Exploration	1
1.40 Property	3
1.50 Purpose of Survey	3
2.00 GEOLOGY	5
3.00 GEOPHYSICS	5
4.00 CONCLUSIONS	6
5.00 STATEMENT OF EXPENDITURES	6
6.00 AUTHOR'S QUALIFICATIONS	10

## LIST OF ILLUSTRATIONS

Figure 1. Property Location Map	2
Figure 2. Claim Map showing location of VLF-EM Survey	4
Figure 3. Surface Geology, Plan of VLF-EM Lines and Summary of VLF-EM Responses	7
Figure 4a. VLF-EM Profiles	8
Figure 4b. VLF-EM Profiles	9

## 1.00 INTRODUCTION

### 1.10 Location and Access

The Mill claims are located approximately 15 kilometers SSW of Kimberley, B.C., in the Fort Steele Mining Division (Fig. 1). They are immediately north of the confluence of Perry Creek and Sawmill Creek, centered approximately at  $49^{\circ} 32'N$  Latitude,  $116^{\circ} 02'W$  Longitude (Fig. 2).

Access to the property is via good logging roads into the Perry Creek drainage from the old highway between Kimberley and Cranbrook. Both the main Perry Creek logging road and the Sawmill Creek logging road cross the claims.

### 1.20 Physiography

The property is situated west of the Rocky Mountain Trench within the Moyie Range of the Purcell Mountains. The claims are immediately north of Perry Creek and east of Sawmill Creek, between 1230 and 1500 meters elevation.

Vegetation cover is mainly of pine, larch and fir, with part of the property recently clear-cut logged.

### 1.30 History of Previous Exploration

Sawmill Creek on the western boundary of the Mill claims is historically the most prolific placer gold tributary of Perry Creek and has consequently seen extensive prospecting for lode gold sources of the placers.

A number of important lode gold prospects occur in the vicinity of the Mill claims. These include the Rome prospect on Rome Creek to the southeast, Price's Pit at the north end of the Mill claims and Kimberley Goldfield's further to the northwest. Two adits on the Mill claims are part of the former Birdie Lode prospect. All these occurrences have received minor historic production.

Brief references to the Birdie Lode workings are given in old B.C. Ministry of Mines Reports (eg. 1924, p.187 as the Birds Nest Group and 1925, p. 231 as the Bird Bros. property). Unfortunately these reports provide no data on the nature of the prospect or the extent of the workings. The two adits occur just above Perry Creek, on a steep slope, and thus much of the adit muck probably was washed away by the creek, preventing any evaluation of the workings based on the muck pile size.

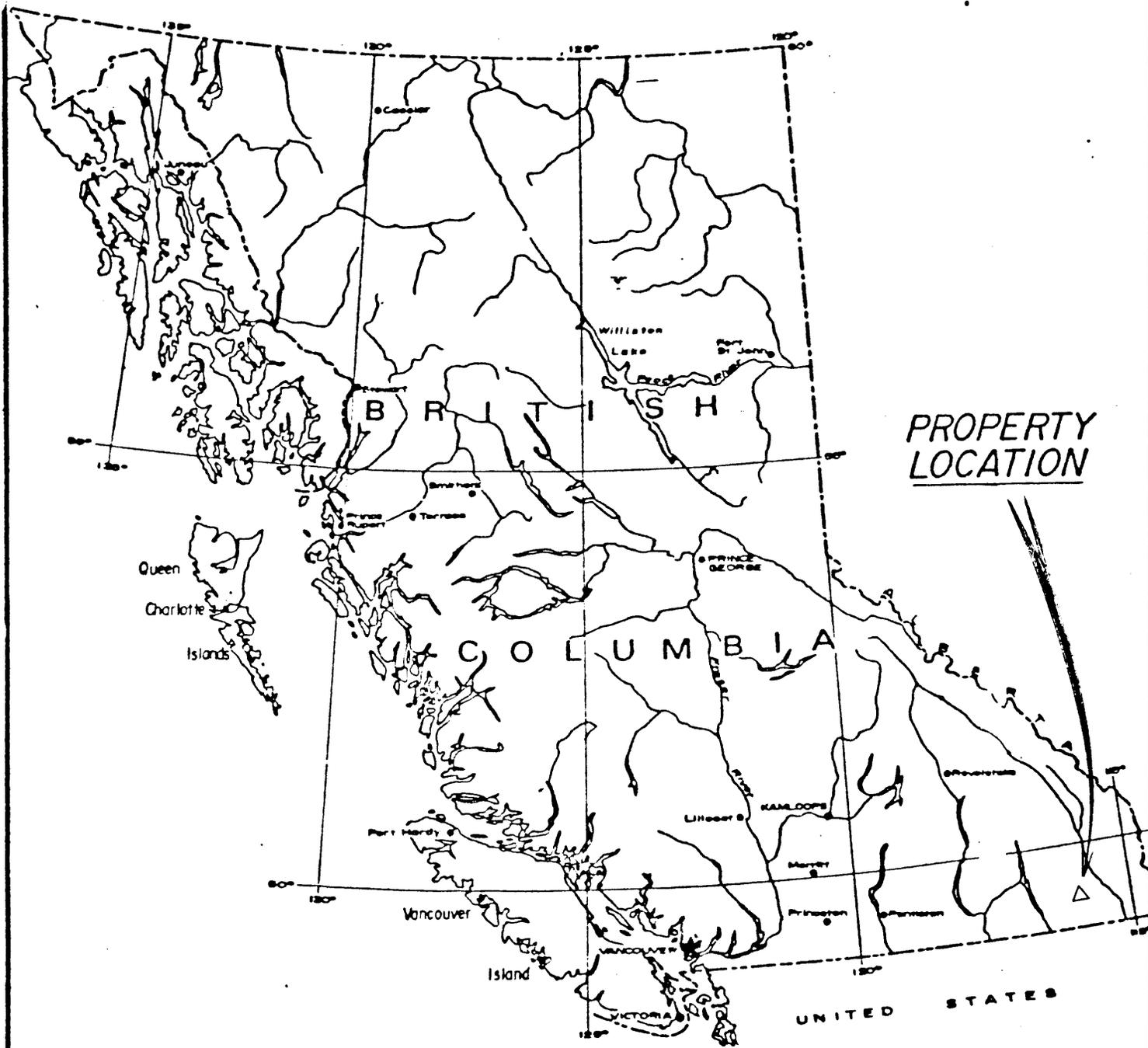


Figure 1  
MILL CLAIMS  
LOCATION MAP



More regionally, historic exploration for lode gold has been generally similar to the Sawmill Creek area, with small gold occurrences identified and a few with minor production. A few recent gold exploration discoveries have provided substantial new information on the nature of the mineralizing activity. In 1990 Dragoon Resources Ltd. drilled the David property (located 20 kilometers southwest of the Mill claims) and proved up a reserve of nearly 100,000 tonnes with a grade of 8 grams gold/tonne. The David deposit is hosted by a prominent shear zone, unlike the massive quartz veins which have received the historic attention. Also in 1990, Goldpac Investments and White Knight Resources discovered low grade gold mineralization hosted by a wide altered syenite dike within the Cranbrook Fault zone (located 9 kilometers southeast of the Mill claims). This discovery followed a 1988 drilling program by Chapleau Resources further west on the Cranbrook Fault where a large quartz flooded zone hosts copper and minor gold mineralization.

These recent discoveries have established a genetic relationship to Cretaceous felsic intrusives as well as structural control, and have provided a new focus to exploration for gold mineralization in the East Kootenay region of B.C.

#### 1.40 Property

The Mill claims include 7 two-post claims staked in 1989 by L.D.Morgan of Cranbrook, B.C. (Fig. 2):

Claim Name	Title Number	Date Staked	Due
Mill 1	211066	89-11-11	1992
Mill 2	211067	89-11-11	1992
Mill 3	211068	89-11-11	1992
Mill 4	211069	89-11-11	1992
Mill 5	211070	89-11-11	1992
Mill 6	211071	89-11-11	1992
Mill 7	211072	89-11-18	1992

#### 1.40 Purpose of Survey

In 1990 a VLF-EM survey on the Mill claims successfully detected a north-striking conductor located about 350 meters west of the Birdie Lode adits. Geophysical surveying was continued in 1991 over the Birdie Lode adits and to the north in the hope of defining a structure which controls the mineralization encountered in the adits. Geological mapping was conducted in the vicinity of the adits.

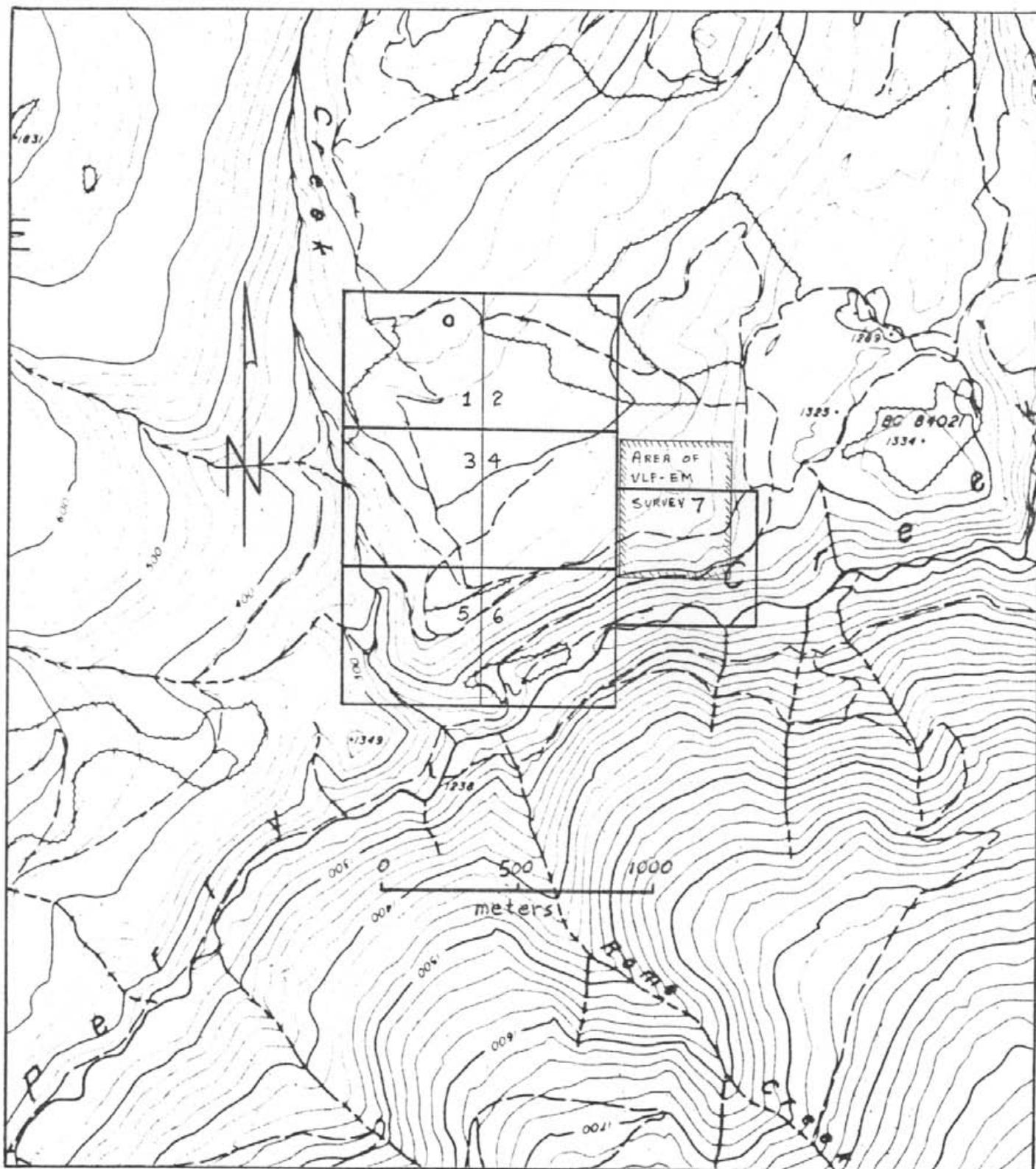


Figure 2. MILL CLAIMS Claim map showing location of VLF-EM Survey  
Scale 1:20,000 NTS 82 F/9 E

## 2.00 GEOLOGY

The area of the Mill claims is underlain by Creston Formation siltstones, quartzites and argillites. Bedding strikes north-northeasterly with steep to moderate west dips and local steep east dips. Occasional northwest-striking beds demonstrate local minor folding.

Both of the Birdie Lode adits are covered at the portals and no evidence of the exploration target is evident on surface. Bedding near the upper adit trends 017/85E with minor quartz and brecciation but no obvious faulting or shearing. The adits were driven parallel to the structure and presumably they are on a NNE zone. The adits occur within a small draw whose recessive-weathering character is compatible with a shear zone.

The adit dump material consists partly of massive vuggy chloritic milky white quartz. Abundant crystalline veined quartz is suggestive of open space filling within a fault zone. Some quartz is strongly brecciated with iron and manganese-stained slickensides. Brown-weathering ankerite veins and pods are common with the quartz. Occasional clots of galena were seen in the milky white quartz and, at the upper adit, fragments of galena-bearing quartz were seen to carry small grains of visible gold.

Minor copper mineralization, noted as malachite on weathered surfaces, occurs on the periphery of the 'Birdie Lode structure'. Malachite occurs with lenticular quartzites which are evidently silicified and which contain disseminated iron sulfides about 110 meters west of the adits (Fig. 3). Malachite also occurs about 200 meters east of the adits as a common coating on otherwise bland looking greenish argillites, adjacent to a narrow altered micaceous diorite dike. This copper mineralization may be related specifically to the mineralization at the Birdie Lode adits or to a more regional mineralizing process.

## 3.00 GEOPHYSICS

A VLF-EM grid of nine east-west lines, spaced 50 and 100 meters apart, was surveyed from Perry Creek road north, in the vicinity of the Birdie Lode adits (Fig. 3). The survey lines were run east-west in the hope of detecting a structure which controlled the Birdie Lode mineralization. Readings were taken every 25 meters along the lines with a total of 2.8 kilometers surveyed.

A Crone Radem VLF-EM unit manufactured by Crone Geophysics Ltd. of Mississauga, Ontario was used for the survey. Cutler, Maine (24.0 KHz) and Annapolis, Maryland (21.4 KHz) were the transmitting stations used for the survey.

Figure 3 shows a plan of the survey lines while Figures 4a and 4b are VLF-EM profiles. No obvious extensive conductor was detected by the survey. Although no strong Field Strength peaks were obtained, there are two broad peaks of possible interest; on Line 300N from 25 to 75 W and on Line 450N from 100 to 125E. Similarly, no strong Dip Angle change was seen although a series of weak results may be of possible interest. Thus no obvious linear structure was detected in association with the Birdie Lode adits and if the mineralization is structurally controlled, it is not apparent by the VLF-EM results.

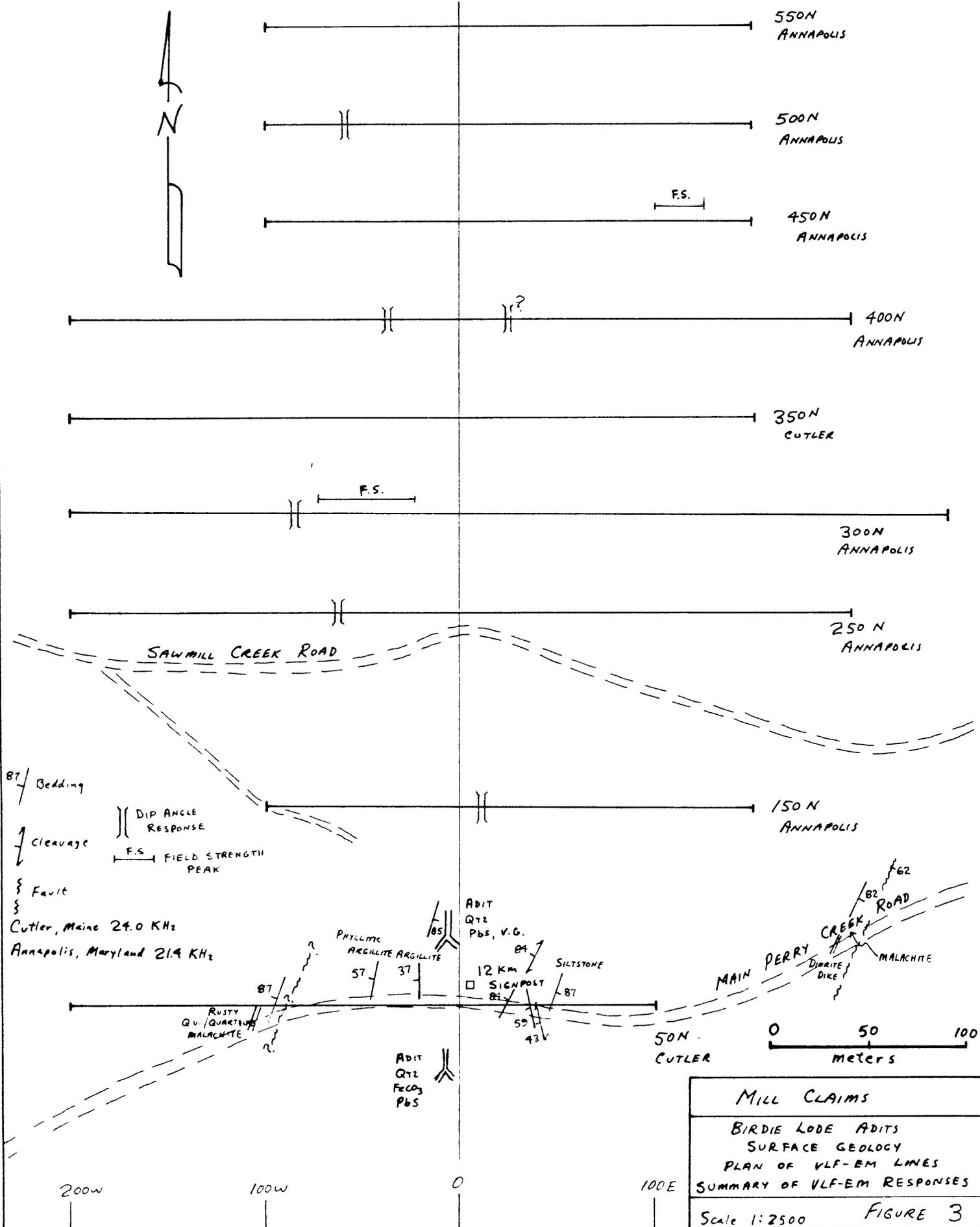
#### 4.00 CONCLUSIONS

The inferred northerly-striking Birdie Lode structure was not detected by a 2.8 kilometer, 9 line VLF-EM survey which tested a strike length of 500 meters. Weak Field Strength and local Dip Angle anomalies do not correlate well across the survey area and probably do not relate to a northerly oriented structure.

#### 5.00 STATEMENT OF EXPENDITURES

3 man-days geology and geophysics @ \$225.00/day	\$675.00
Truck rental 3 days @ \$50.00/day	150.00
VLF-EM rental 2 days @ \$25.00/day	50.00
Report and Drafting 2 days @ \$225.00/day	450.00
Total Expenditure	\$1325.00
	=====

200W 100W 0 100E 200E



B7 / Bedding  
 Cleavage  
 { Fault  
 Cutler, Maine 24.0 KHz  
 Annapolis, Maryland 21.4 KHz

|| DIP ANGLE RESPONSE  
 F.S. FIELD STRENGTH PEAK

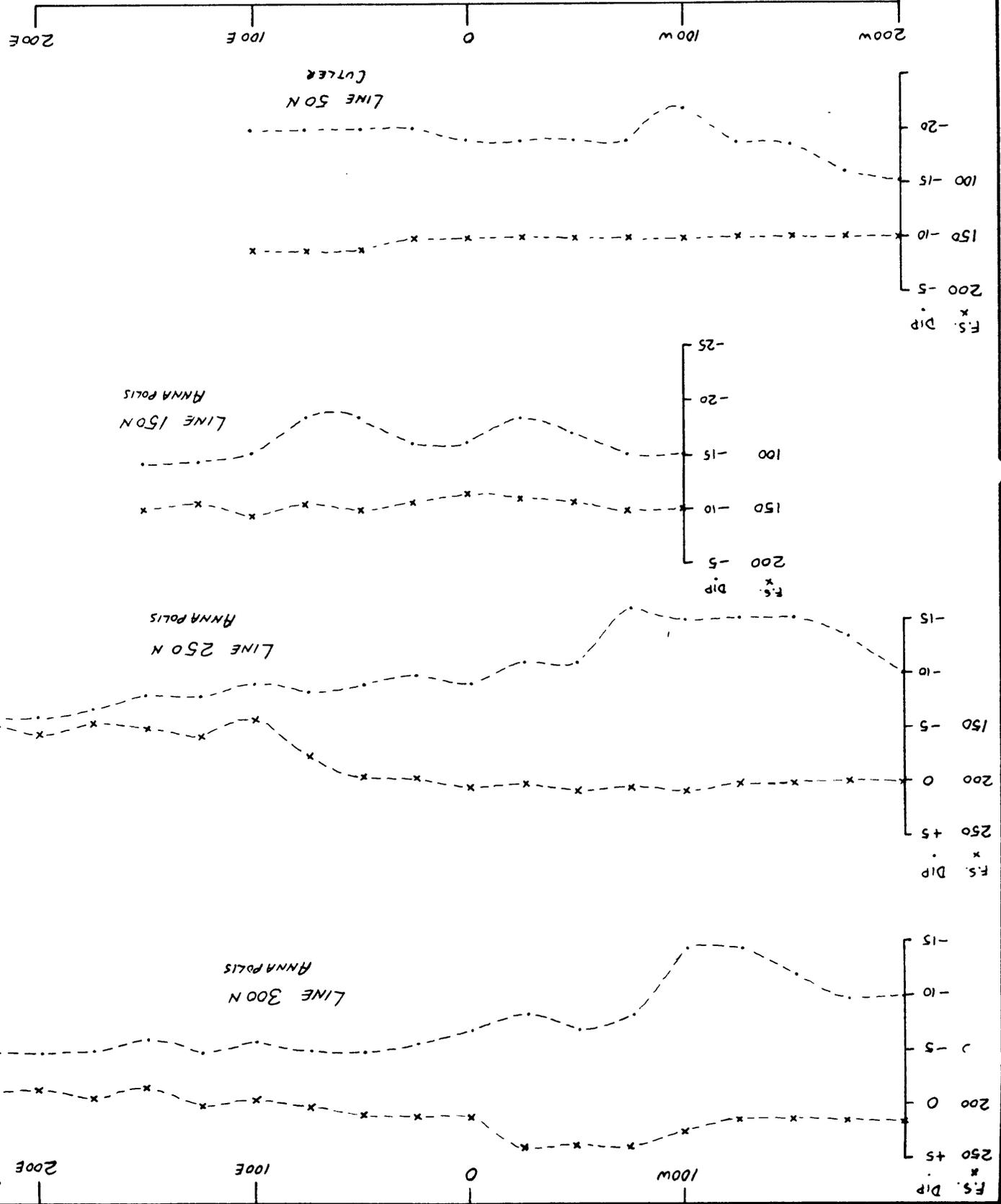
MILL CLAIMS  
 BIRDIE LOBE ADITS  
 SURFACE GEOLOGY  
 PLAN OF VLF-EM LINES  
 SUMMARY OF VLF-EM RESPONSES  
 Scale 1:2500 FIGURE 3

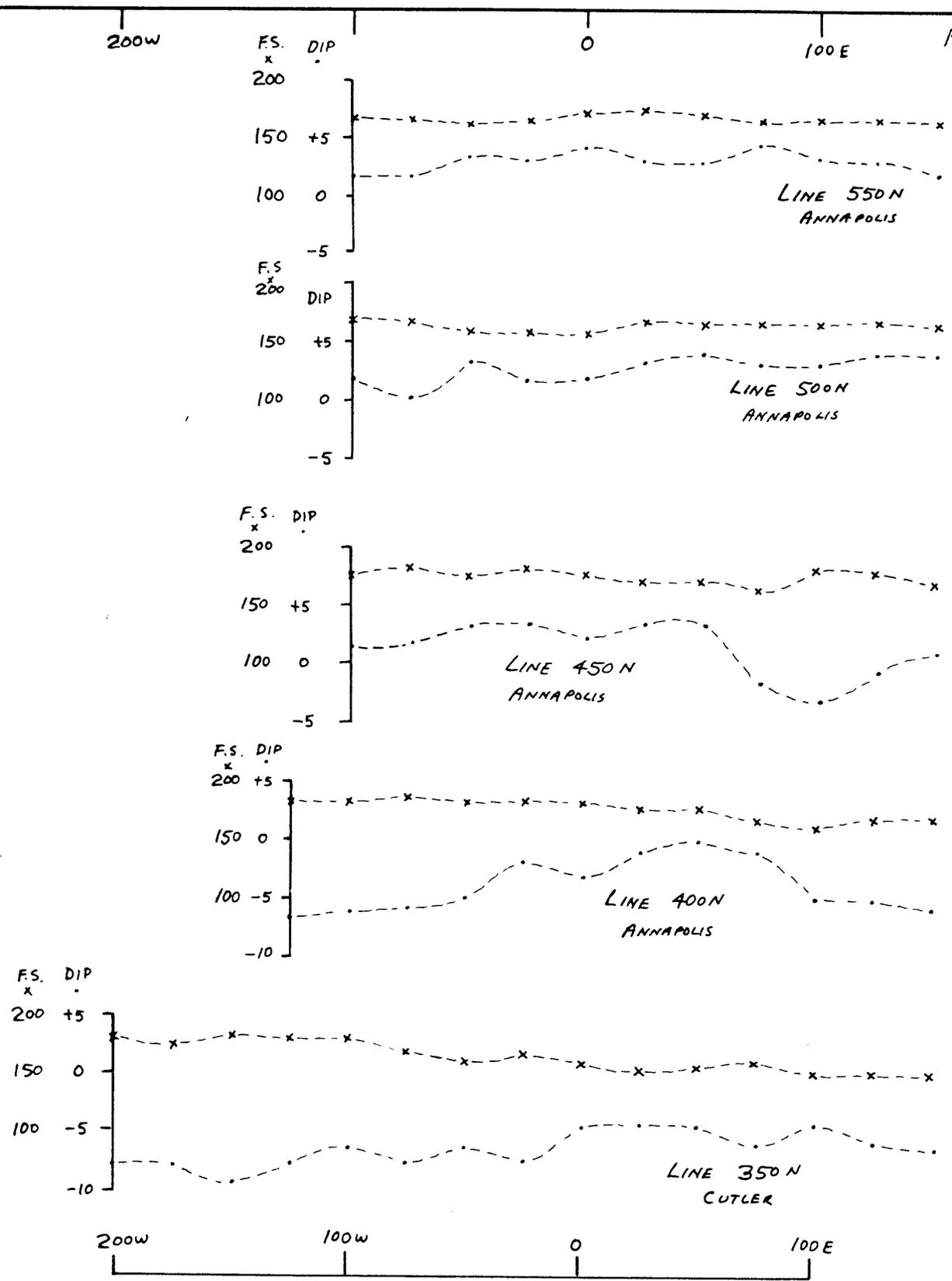
Figure 4a

BIRDIE LODGE ADITS  
VLF-EM PROFILES

MILL CLAIMS

Meters  
Scale 1:2500  
0 50 100





0 50 100  
meters  
Scale 1: 2500

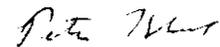
MILL CLAIMS  
 BIRDIE LODE ADITS  
 VLF-EM PROFILES  
 FIGURE 4b

6.00 AUTHOR'S QUALIFICATIONS

As author of this report I, Peter Klewchuk, certify that:

1. I am an independent consulting geologist with offices at 246 Moyie Street, Kimberley, British Columbia.
2. I am a graduate geologist with a BSc degree (1969) from the University of British Columbia and an MSc degree (1972) from the University of Calgary.
3. I am a Fellow in good standing of the Geological Association of Canada.
4. I have been actively involved in mining and exploration geology, primarily in the province of British Columbia, for the past 18 years.
5. I have been employed by major mining companies and provincial government geological departments.

Dated at Kimberley, British Columbia, this 7th day of February, 1992.



Peter Klewchuk  
Geologist