

ASSESSMENT REPORT ON THE  
LILY MAY CLAIM GROUP  
ROSSLAND, BRITISH COLUMBIA  
VLF-EM SURVEY

Trail Creek Mining Division  
NTS: 82 F/4 W  
Longitude: 117 49' 50"  
Latitude: 49 03' 40"

Owners: Bryndon Ventures Inc.  
Suite 300 - 837 Homer St.  
Vancouver, B.C. V6B 2W2

Antelope Resources Inc.  
Box 849 2038 Washington St.  
Rossland, B.C. V0G 1Y0

Stan Endersley  
1124 Lee St.  
White Rock, B.C. V4B 4P4

Operator: Antelope Resources Inc.

Author: Dan M. Wehrle, Geologist

January 2, 1992  
**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**22,095**

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## INTRODUCTION

The VLF-EM data described in this report is being presented as assessment work for the following claims in the Lily May claim group:

<u>Claim</u>	<u>Title No.</u>	<u>Claim</u>	<u>Title No.</u>
Jero 5	257558	Jero 7	257585
Jero 8	257586	Antelope #14 Fr.	257684
Antelope #16 Fr.	257686	Bender #10	257640
Bender #11	257691	Bender #12	257692
Bender #13	257693	Bender #14	257694

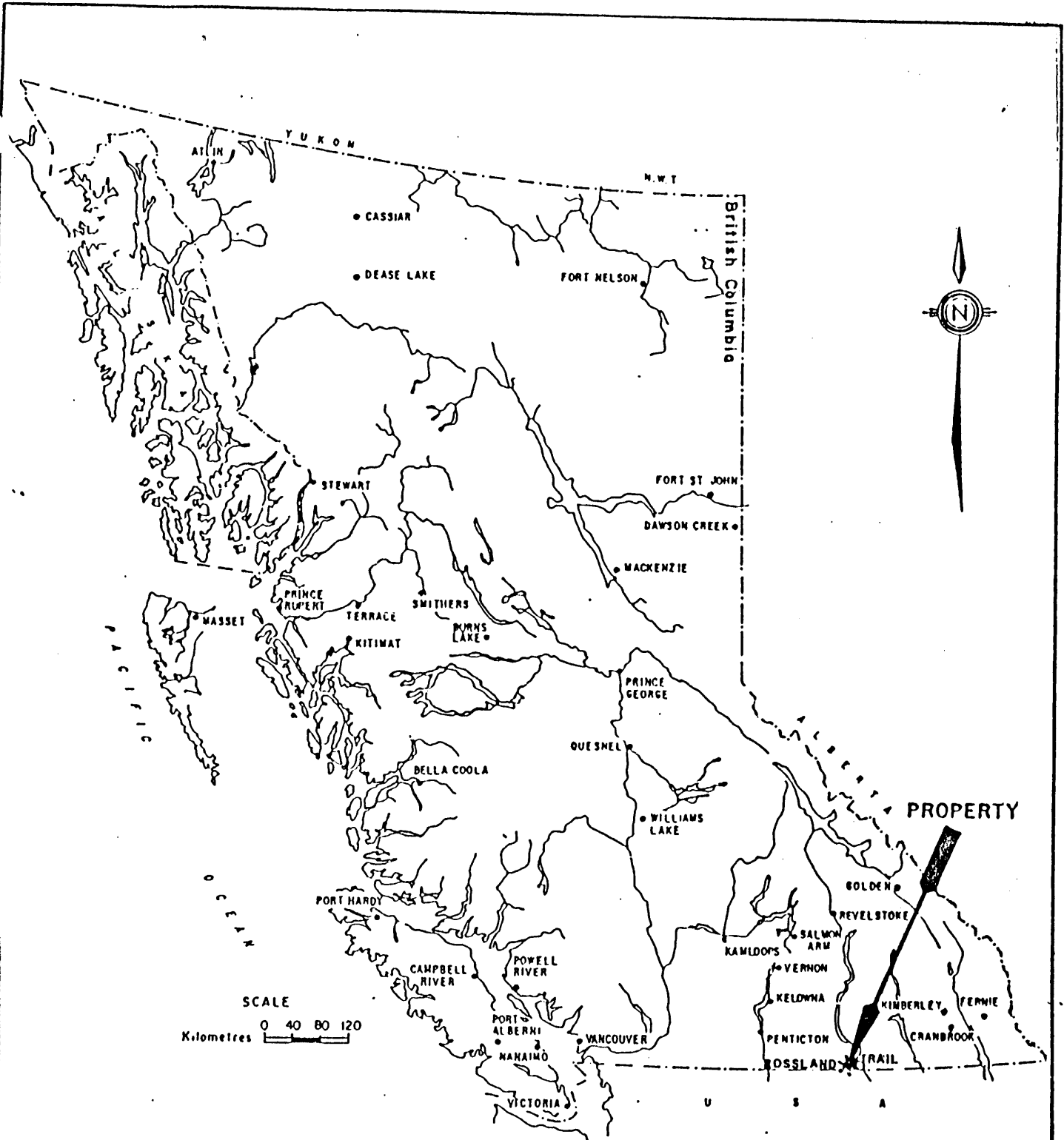
The VLF-EM survey, covering 8.0 kilometers, was conducted from October 1, 1991 to November 3, 1991 over the Jero 5, Bender #10 and Bender #11 claims of the Lily May claim group.

This survey forms part of an on-going exploration program whose goal is to locate and define economic concentrations of mineral bearing sulfides along shear zones marginal to the monzonite intrusion which underlies the City of Rossland, British Columbia.

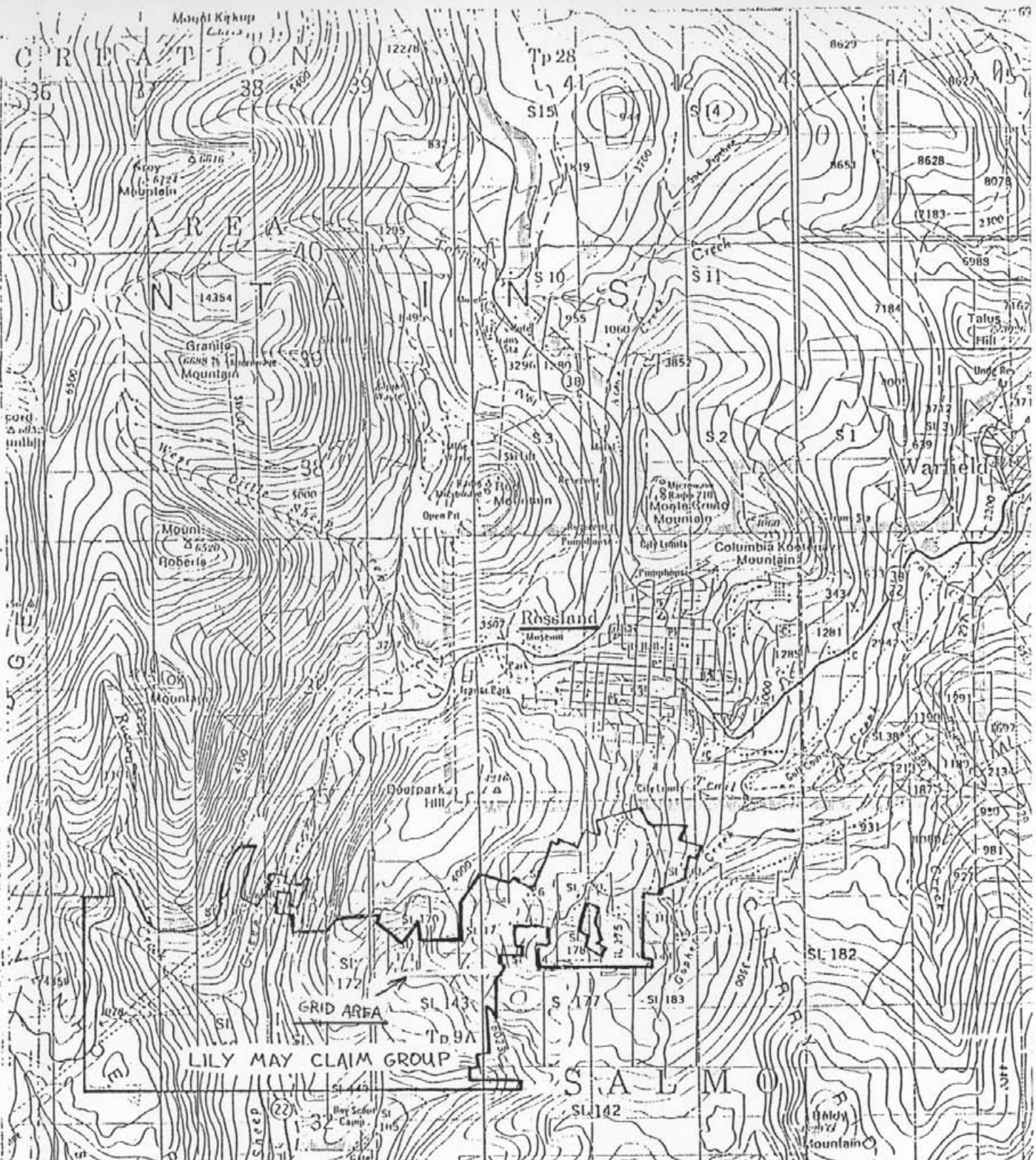
## LOCATION AND ACCESS

The Lily May claim group is located immediately south and southwest of the city of Rossland, B.C. (Figure 1 and 2). Rossland is located approximately 6 kilometers south-westerly from the City of Trail, B.C. and about 7 kilometers north of the United States border.

Geographic coordinates of the approximate center of the Lily



<b>ANTELOPE RESOURCES</b>	
ROSSLAND PROPERTY TRAIL CREEK MINING DIVISION, B. C.	
<b>PROPERTY LOCATION MAP</b> PROVINCE OF BRITISH COLUMBIA	
SCALE:	
DATE: 29/01/9	FIGURE: 1



# ANTELOPE RESOURCES

## INDEX MAP



DATE: 27/01/92      FIGURE: 2  
 SCALE: 1:50,000      NTS 82T/4 W

May claim group are longitude 117 49' 50" W; latitude 49 03' 40" N on N.T.S. Map Sheet 82 F/4 W.

Rossland and vicinity is served by major provincial highways and by Castlegar airport located 26 kilometers north of Trail, B.C. Access to the property is good along many 4-wheel drive logging, power-line and hunting roads. The VLF grid lies approximately 1.5 kilometers east of the Patterson Highway; and 6 kilometers north of the Canada/U.S.A. border.

#### PHYSIOGRAPHY AND VEGETATION

Relief on the Lily May claim group is approximately 428 meters with moderate to locally steep slopes. An existing system of gravel and 4-wheel drive roads provide good access to much of the property and the remainder could be reached by bulldozer.

The region has been affected by continental glaciation. Two ice directions have been recorded with the final advance being south to southwest. The Lily May claim group is almost totally blanketed by a thin cover of glacial till on the order of 3 to 8 meters in thickness. Consequently, outcrop is limited.

The property is moderately treed with some locally dense bushy areas. Interior Douglas fir and Lodgepole pine with localized stands of cedar are predominate forest cover. Numerous stands of poplar and birch occur in the lower elevations and along drainages. As a result of virtual clear-cut logging in the early 1900's, few stands of merchantable timber occur. Most surface rights within the claim group are privately owned.

Although snow covered for upwards of four months per year,

TABLE 1

LILY MAY CLAIM GROUP

<u>Crown Granted Mineral Claims</u>	<u>Lot No.</u>
Esmeralda Fraction	L. 2980
Modena	L. 1694
Rhoderick Dhu	L. 1493
Fairview	L. 1058
Copper Queen	L. 1210
Homestake	L. 936
Bluebird	L. 1053
Hattie Brown	L. 1047
Alcome Fraction	L. 11468
Monday	L. 995
Tuesday	L. 1278
Richmond	L. 1508
Lily May	L. 1052
Black Horse	L. 1059

<u>Reverted Crown Granted Mineral Claim</u>	
Hattie	L. 1054

<u>Fractional Mineral Claims</u>	<u>Rec. No.</u>
Antelope #1 Fr.	1001
Antelope #2 Fr.	1002
Antelope #3 Fr.	1003
Antelope #4 Fr.	1004
Antelope #5 Fr.	1005
Antelope #6 Fr.	1016
Antelope #8 Fr.	1008
Antelope #9 Fr.	1020
Antelope #10 Fr.	1021
Antelope #13 Fr.	1024
Antelope #14 Fr.	1058
Antelope #16 Fr.	1060
Antelope #17 Fr.	1061
Antelope #18 Fr.	1062
Antelope #19 Fr.	1063
Antelope #22 Fr.	1076
Antelope #23 Fr.	1077

<u>Modified Grid Mineral Claims</u>	
Jero 5	773
Jero 7	865
Jero 8	866

<u>2-Post Mineral Claim</u>	
Bender #10	1064
Bender #11	1065
Bender #12	1066
Bender #13	1067
Bender #14	1068

the property is accessible year round, allowing all but surface geological mapping to be conducted.

#### PROPERTY DESCRIPTION AND EXPLORATION HISTORY

The Lily May claim group consists of 40 contiguous claims located immediately south and southwest of the City of Rossland (Figure 2 and 3). Of these, 14 are Crown Granted Mineral Claims, one is a Reverted Crown Granted Mineral Claim, 17 are Fractional Mineral Claims, 3 are Modified Grid Mineral Claims, and 5 are 2-post Mineral Claims (Table 1).

The Lily May claim was first recorded in the district after gold and silver were found there in 1887-1889. This was followed by the discovery and development of the Le Roi, Center Star, War Eagle and other famous mines in the Rossland camp some 2 kilometers to the northwest which produced over 3,000,000 ounces of gold and an equal amount of silver until their closure in 1928.

Between 1889 and 1938, the Crown Granted Mineral Claims of this group were staked by different owners and a limited amount of development and production (535 tons) were effected. In 1947, Rossland Mines Ltd. assembled a land package including this group and, until 1956, carried out exploration and underground development work leading to calculation of ore reserves, a mill feasibility study and production of 1077 tons of Pb-Zn-Ag ore from the Bluebird-Mayflower zone.

Between 1962 and 1967 ground electromagnetic, magnetometer, potentiometer land soil surveys of selected claims under various



option agreements, including Noranda Inc. and Northwood Mining Ltd., were carried out. Between 1972 and 1980 part of this group was leased by Ross Island Mining Co. Ltd. (previously Rossland Mines Ltd.) to Standonray Mines who produced 6450 tons of Pb-Zn-Ag ore from the Bluebird zone.

In the period from 1981 through 1986 Bryndon Ventures Inc. (previously Ross Island Mining Co. Ltd.) updated the ore reserve calculations of the Bluebird-Mayflower zone and carried out surface geophysical surveys, trenching and 631 meters of diamond drilling along the Gopher-Homestake, Bluebird-Mayflower and North shear zones.

In 1987 this group, along with other claims, was optioned by Bryndon Ventures Inc. to Antelope Resources Inc. culminating in a joint venture agreement between these two parties with Antelope as operator to carry out exploration in the Rossland area. Additional surface geophysical surveys (VLF-EM, magnetometer, Pulse EM and IP/resistivity) were carried out followed by 6,641.3 meters of diamond drilling.

In the fall of 1990, Antelope optioned the Jero 5, 7, and 8 claims from Gunsteel Resources Inc. and formed the Lily May claim group. At approximately the same time, the partners Antelope/Bryndon initiated a diamond drill program.

The Lily May claim group is jointly owned by Bryndon Ventures Inc., Antelope Resources Inc. and Gunsteel Resources Inc. under the terms of option agreements between these parties. Antelope Resources Inc. is the operator.

OBJECTIVE OF PRESENT WORK

Numerous workings and extensive exploration on the core claims of the Lily May group show an east - west mineralized vein system traversing the ground. A VLF-EM geophysical program was designed to test for any anomalous extensions of this vein system west onto the Bender #10, #11, and Jero #5 claim area, in the south west corner of the group.

INSTRUMENTATION AND THEORY

A VLF-EM receiver, Model 27, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. was used for the VLF electromagnetic survey. This instrument is designed to measure the electromagnetic component of the very low frequency field (VLF-EM). The source of the primary field used was the U.S. Navy submarine transmitter at Seattle, Washington which transmits at a frequency of 18.6 KHz.

In electromagnetic prospecting, a transmitter produces an alternating magnetic field (primary) by a strong alternating current usually through a coil of wire. If a conductive mass such as a sulfide body is within the magnetic field, a secondary alternating current is induced within it which in turn produces a secondary magnetic field which can be detected at surface through deviations of the normal VLF field.

VLF means very low frequency, about 15 to 25 kilocycles/second. Relative to frequencies generally used in geophysical exploration, this is actually very high. Consequently, the high frequency of the VLF-EM method results in

numerous anomalies from lower conductive sources such as swamp edges, creeks, topographic highs, electrolyte-filling faults or shear zones, and porous horizons, graphite, carbonaceous sediments, lithological contacts as well as sulfide bodies of too low a conductivity for other EM methods to pick up. On the other hand, the tendency for VLF to respond to poor conductors has aided in mapping faults and rock contacts as well as picking up sulfide bodies of too low a conductivity for conventional EM methods and too small for induced polarization.

VLF data may have anomalies, and it would be nearly impossible to differentiate between those that are geologically significant and those that are not. Thus, VLF-EM preferably should not be interpreted without a good geological knowledge of the property and/or other geophysical and geochemical surveys.

#### PROCEDURE

Dip angle readings were taken at 10 meter intervals along the established grid from line 500W to line 200E. Readings were always made with the instrument pointed away from the 18.6 KHz transmitter station at Seattle, Washington.

Due to the proximity of the City of Rossland, local cultural effects such as powerlines and fences hampered the survey and meaningful readings could not be taken in those areas.

#### COMPILATION OF DATA

The VLF-EM field results were reduced for plotting by applying the Fraser-filter. This is essentially a 4-point

difference operator which transforms zero crossings into peaks, and a low pass smoothing operator which reduces the inherent high frequency noise in the data. Thus, noisy, non-contourable data are transformed into a less noisy, contourable form. Another advantage is that a conductor that does not show up as a crossover on the unfiltered data will quite often show up as a peak on the filtered data. The original field data is recorded on Figure 3 (map pocket). The filtered data was plotted at reading station midpoints and the positive values contoured at 5 degree intervals beginning at zero (Figure 4, map pocket).

#### DISCUSSION OF RESULTS

A very strong east-west trend is evident for the anomalies, roughly paralleling the trend of known mineralized structures. There are six moderate to strong anomalous trends. They are approximately 700 meters in strike length, 30 to 50 meters each in width and separated by 10 to 70 meters of non-anomalous readings.

The conductive trend is open both to the east and west of the grid. This suggests that the known mineralized vein system on the core claims of the Lily May group, extends westward onto and through the Bender #10, #11, and Jero #5 area. The regular pattern of the anomalies suggests that similar trends lie to the north and south of the grid. However, the West Kootenay Power line near the north of the grid obscures readings.

CONCLUSIONS AND RECOMMENDATIONS

The VLF-EM responded well to the known mineralized trends of the area. Extension of the mineralized vein system present at the core of the Lily Way claim group west onto the Bender/Jero #5 area seems likely. It is quite possible that these conductive trends represent areas of increased sulfide content in the host Rossland volcanics.

In addition, there are areas of increased conductivity along the main trends. These anomalous areas could be further tested by back hoe trenching, followed up by rock geochemical sampling.

ITEMIZED COST STATEMENT

Consolidated Cost Statement:

Labour:

Dan Wehrle - Geologist

- 1 day prospecting @ \$250.00/day	\$ 250.00
- 3 days report writing @ \$250.00/day	750.00

Dennis McNulty - Exploration Foreman

- 30 days field labour @ \$200.00/day	\$6000.00
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Expenses:

- 34 days 4 x 4 Truck rental @ \$50.00/day	\$1700.00
- VLF rental	<u>600.00</u>

TOTAL	\$9300.00
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REFERENCES

- Drysdale, C.W., 1915, Geology and Ore Deposits of Rossland, B.C.; G.S.C. Memoir 77.
- Fyles, J.T., 1984, Geological Setting of the Rossland Mining Camp; B.C. Ministry of Energy, Mines and Pet. Res., Bull. 74.
- Hodges, L.K., 1987, Mining in the Pacific Northwest; The Post-Intelligencer, Seattle, Wash.

AUTHOR'S QUALIFICATIONS

I, Dan M. Wehrle, of the City of Rossland, in the Province of British Columbia, do hereby certify that:

1. I am a geologist residing at 2414 Thompson Ave, Rossland, B.C., V0G 1Y0.
2. I am a graduate of the University of Saskatchewan (1985) in Geology, B.Sc. Honors.
3. I have been employed with various companies as an exploration assistant/geologist since 1979.
4. This report is based on an analysis of work supervised by myself.
5. I have not received, nor expect to receive, any interest direct or indirect, in the properties mentioned in this report.



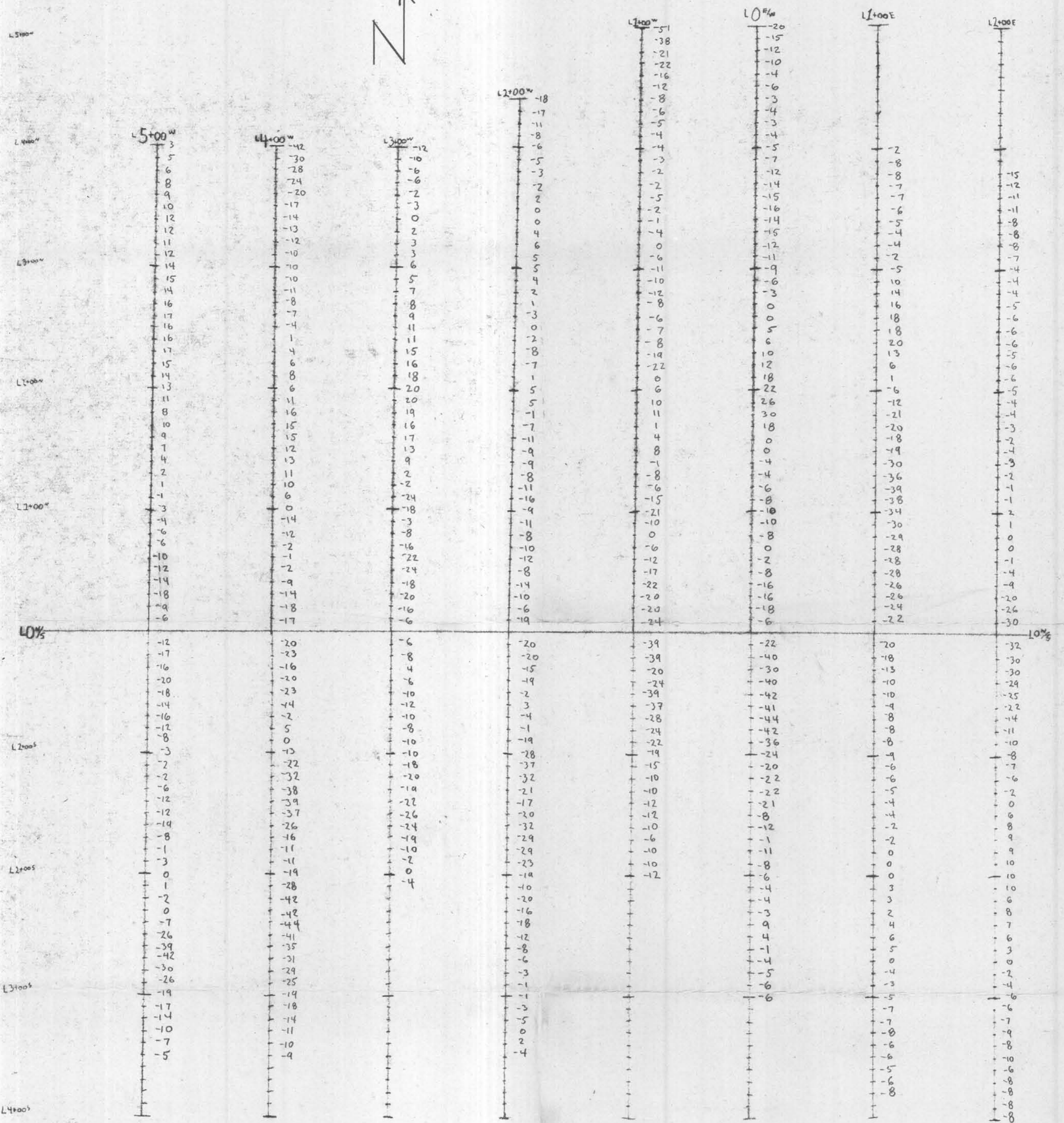
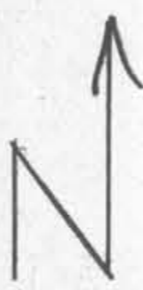
Dan M. Wehrle, Geologist

January 29, 1992  
Rossland, British Columbia









VLF - EM FIELD DATA  
LILY MAY GROUP, BENDER #10

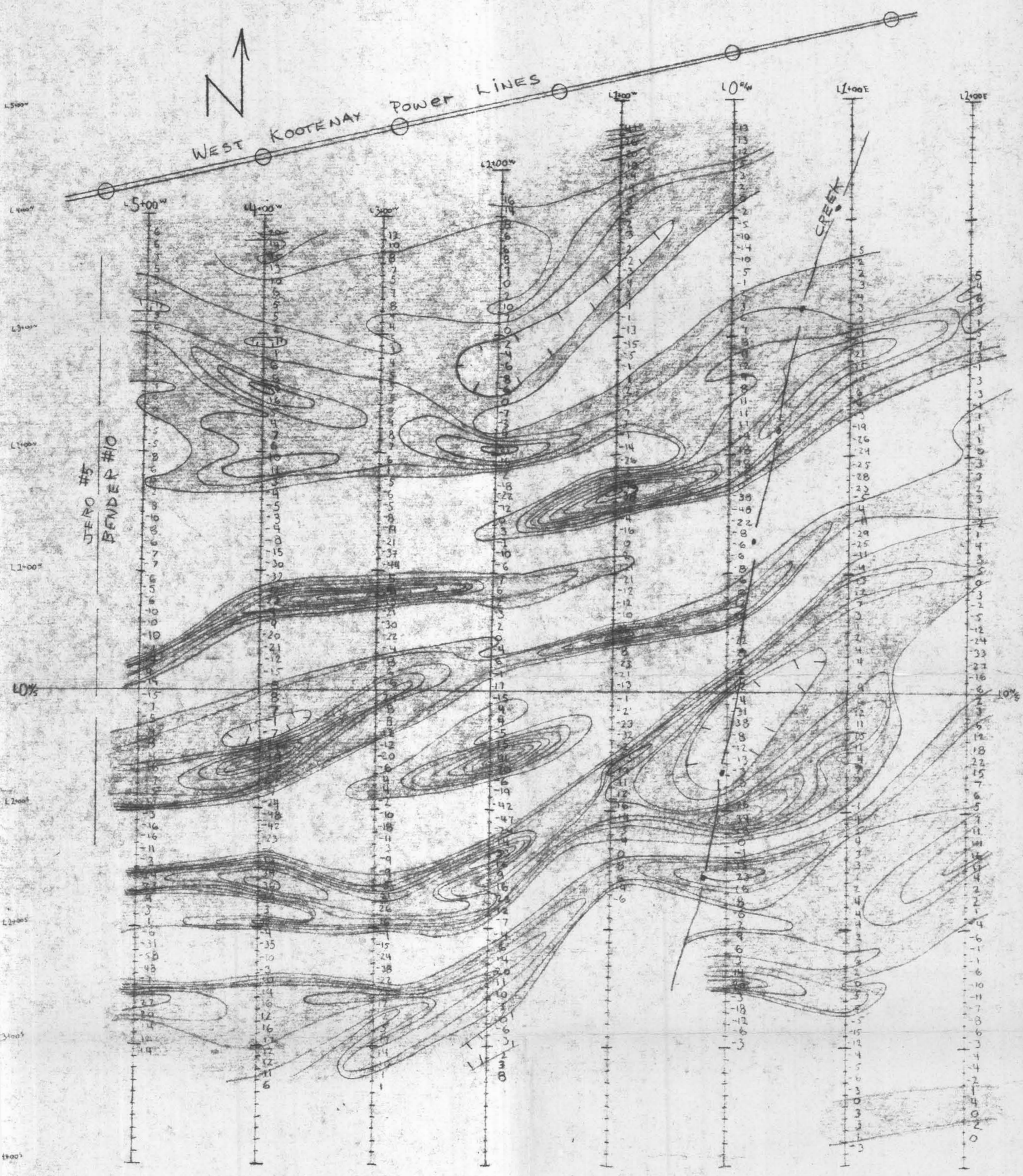
0 50 100 200  
METERS

DATE: 28/01/92      FIGURE: 4  
SCALE: 1:2,000      NTS: 82 F/4 W

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FRASER FILTERED VLF DATA MAP  
 WILY MAY GROUP, BENDER #10

0 50 100 200  
 METERS

DATE: JAN 28, 1992      FIGURE: 5  
 SCALE: 1:2,000      NTS: 82 F/4 W

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