

HUDSON BAY EXPLORATION AND DEVELOPMENT

COMPANY LIMITED

091861

GEOPHYSICAL REPORT

OF

GROUND MAGNETIC AND ELECTROMAGNETIC

SURVEYS

ON THE DANGER CREEK GRID

GRAND CLAIMS

49-82 YA 85284 - YA 85317  
99-132 YA 85334 - YA 85367  
149-158 YA 85384 - YA 85393

WHITEHORSE MINING DISTRICT

105 F 15

61°59' 132°40'

August 21 - Sept. 6. 1986

ROBERT STROSHEIN



091861

This report has been examined by  
the Geological Evaluation Unit  
under Section 53 (4) Yukon Quartz  
Mining Act and is allowed as  
representation work in the amount  
of \$ 7800.00.

*DA Emend*

*for* Regional Manager, Exploration and  
Geological Services for Commissioner  
of Yukon Territory.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION.....	1
CLAIM OWNERSHIP.....	1
LOCATION AND ACCESS.....	4
GEOLOGY AND GEOCHEMISTRY.....	4
SECANT CHAINING.....	5
VLF-EM SURVEY.....	6
MAGNETIC SURVEY.....	7
DISCUSSIONS OF RESULTS.....	7
CONCLUSIONS AND RECOMMENDATIONS.....	8
APPENDIX I SUMMARY OF EXPENDITURES	
APPENDIX II BIBLIOGRAPHY OF ASSESSMENT REPORTS	
APPENDIX III QUALIFICATIONS: R. STROSHEIN	
LIST OF FIGURES	
Figure	
1	LOCATION MAP..... 2
2	CLAIM LOCATION PLAN..... 3
3	VLF-EM DIP ANGLE PROFILES..... pocket
4	TOTAL MAGNETIC FIELD PLOT..... pocket

INTRODUCTION:

The Danger Creek area was identified as a potential target area requiring detailed ground investigation. Reconnaissance geological mapping, geochemical sampling, VLF-EM surveys and air photo interpretation indicated possible important structural configurations occurring on the flank of the rhyolite porphyry complex in the Danger Creek area. The area is completely overburden covered and therefore visual prospecting methods were not practical.

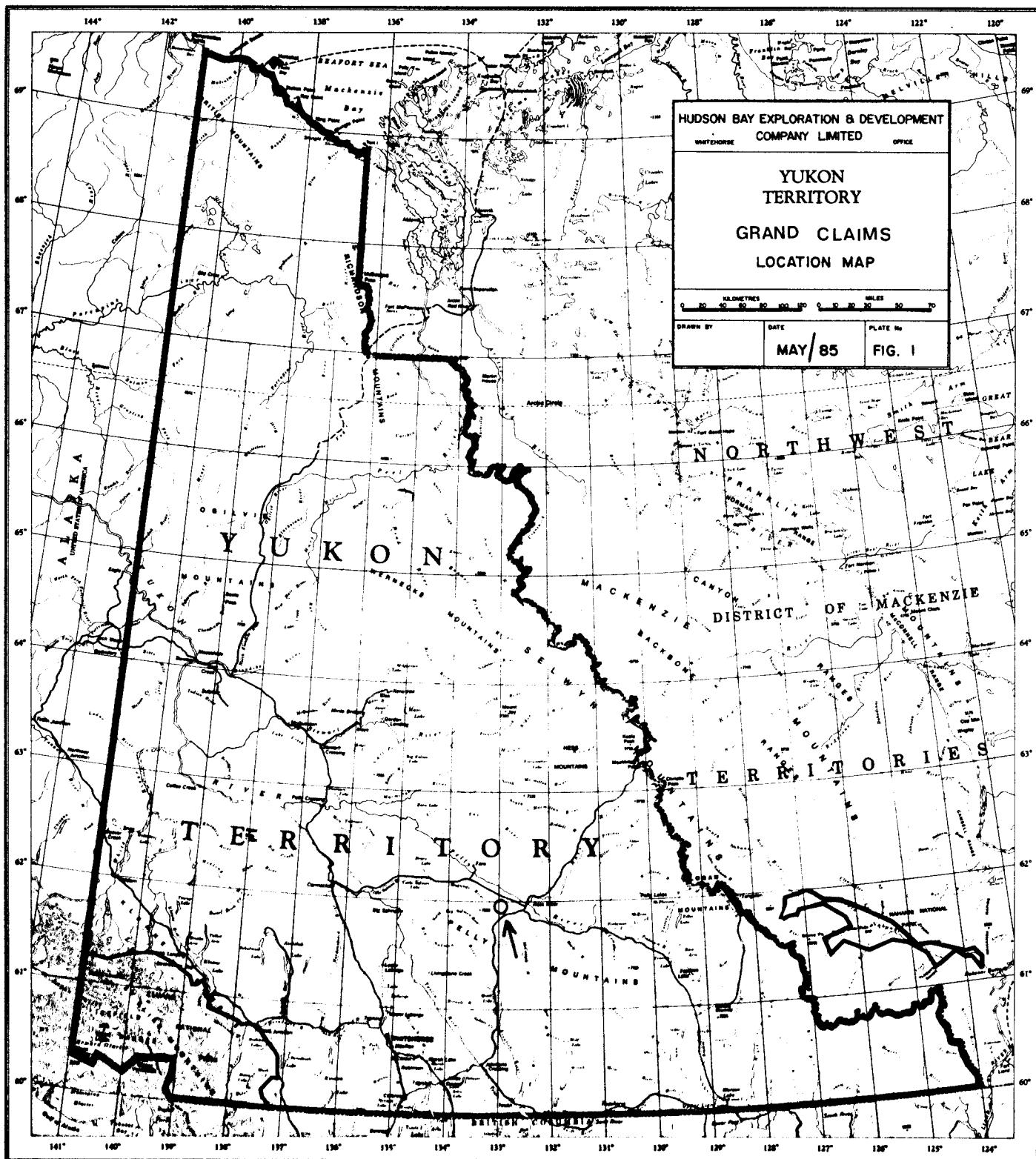
Geophysical surveys in the Grew Creek area had been useful in identifying important structural features and late stage igneous events associated with the gold bearing zone within a local volcanic center. To determine the significance of the reconnaissance interpretation a cut line grid was established to cover the northern and eastern flank of the rhyolite porphyry along Danger Creek.

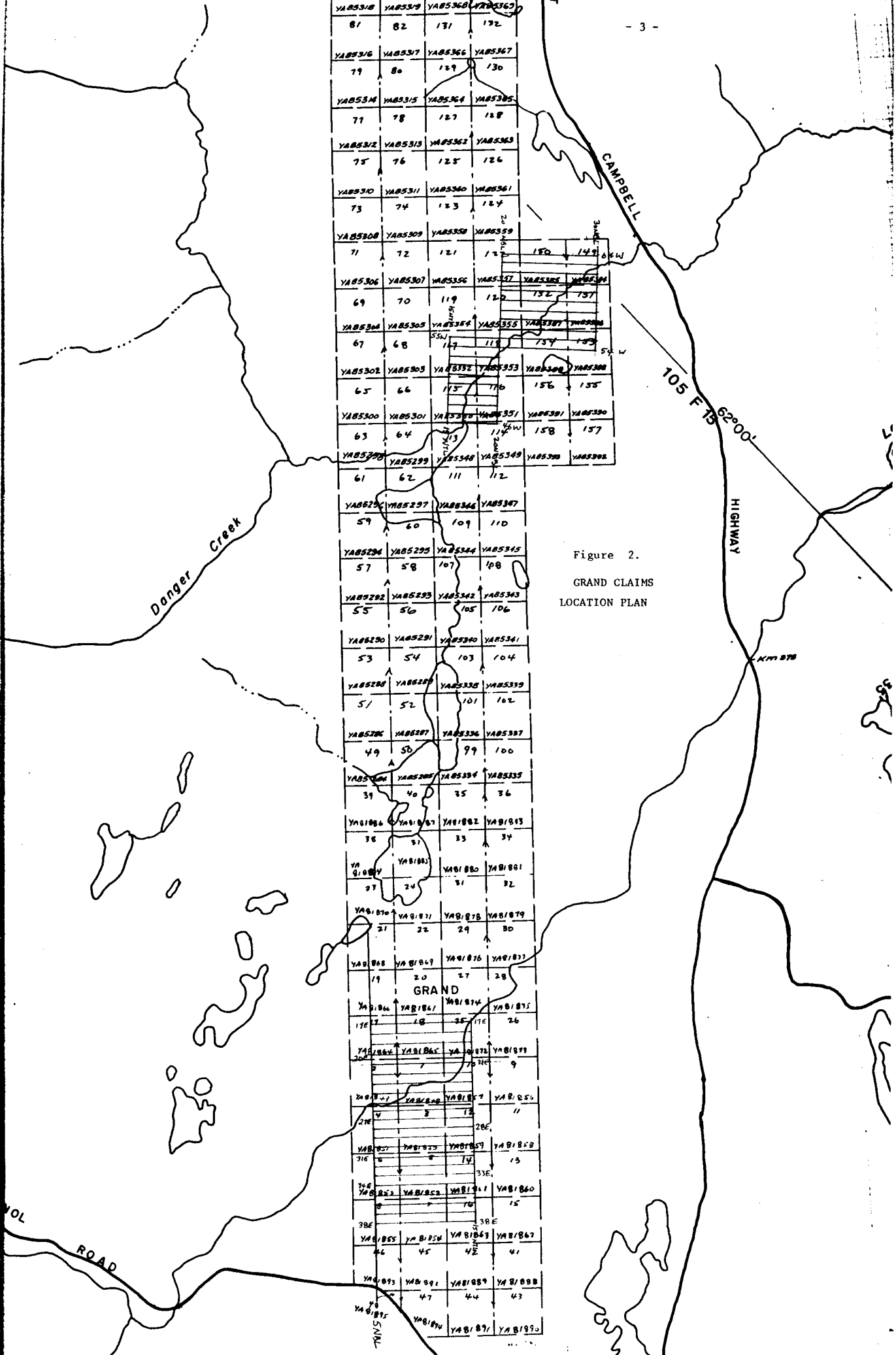
The cutting of the line grid was contracted to Eastern Associates of Whitehorse. A total of 20 kilometers of line was cut including 16 kilometers of section lines from August 21 to September 6, 1986. The grid was chained and surveyed with VLF-EM and magnetometer instruments by personnel employed by Hudson Bay Exploration and Development Company Limited between August 29 and September 6, 1986.

The survey results were processed and compiled on 1:2500 scale plan maps for interpretation. The final plots of the VLF-EM and ground magnetic surveys were included with this report which was completed at the office of Hudson Bay Exploration and Development Company Limited in Whitehorse, Yukon Territory.

CLAIM OWNERSHIP:

The Grand Claims are owned by Hudson Bay Exploration and Development Company Limited of Box 4280, Whitehorse, Yukon Territory. The claims are owned under the terms of an option agreement with Mr. A. Carlos of Whitehorse.





The line grid is located on the Grand 113-120 (YA85348-YA85355) and 149-154 (YA85384-YA85389) claims. The claims covered by this report are:

GRAND 49 - 82 YA85284-YA85316  
GRAND 99 - 132 YA85334-YA85367  
GRAND 149 - 158 YA85384-YA85393

A total of 78 quartz claims. Figure 2.

LOCATION AND ACCESS:

The claim group is located in the Whitehorse Mining District on claim sheet 105 F 15. The claims are located south of the Robert Campbell Highway and are closest to the highway at Danger Creek. The claims are accessible from the highway on foot and the north west corner of the grid is beside a 4 wheel drive access road which quickly becomes an impassable fire break trail.

The Danger Creek crossing is located at approximately kilometer 380 of the Robert Campbell Highway.

GEOLOGY AND GEOCHEMISTRY:

The claims are situated to cover the area bounded by the Grew Creek fault to the southwest and the Danger Creek Fault to the northeast. The area between the faults formed a graben structure during Cretaceous to Tertiary time as part of the Tintina Fault System. The rocks within the fault zone occur as two lithological divisions separated by an apparent intermediate fault.

The southern division of volcanic rocks is dominated by a grey quartz eye rhyolite porphyry complex which is laterally flanked by clastic felsic volcanic and intermediate to basaltic volcanic tuffs, tuff breccias and pyroclastic units. All the preceding units have been intruded by olivine basalt dykes, domes or volcanic necks.

The northern division of the Danger-Grew Creeks fault system consists of variable dark clastic sediments of siltstone, sandstone and conglomerate.

Outcrops north of the Danger Creek fault are predominantly massive grey limestone with rare meta-basalt hills. A small outcrop of quartz-muscovite phyllite has been located 200 meters north of the 30 NBL near 63W. Outcrops south of the Grew Creek fault are composed of grey green chlorite phyllite and meta-chert.

There are no outcrops located in the area of the Danger Creek grid. Several sub-cropping occurrences of porphyritic rhyolite have been exposed along the fire break trail southwest of the grid area.

A total of 8 silt sediment (1 soil) samples were collected in the grid area and analysed by geochemical methods for silver, arsenic, mercury and gold. Figure 4.

Gold values were low 5-10 ppb.

Silver values were less than .2 ppm except sample 07 which was .4 ppm. These values are not significant.

Arsenic values had a background level of 6-11 ppm with one sample of rusty sediments number 07 analysed at 160 ppm. The significance of this value is low as sample 08 was obtained from the same stream flow 10 meters upstream.

The mercury values were of background levels from 35-60 ppb.

#### SECANT CHAINING:

The grid starting point is at a tree stump arbitrarily assigned as 30+00N and 65+00W. The 30 NBL was cut on a  $135^{\circ}$  bearing with section line 55+00W as a control line for the 20 NBL and the 15 NTL. The section lines are nominally located at 100 meters on a bearing of  $225^{\circ}$ .

All section lines as well as base and tie lines were surveyed with an inclinometer to determine the slope in per cent. Stations along the lines were established at 25 meter horizontal intervals. By utilizing a correction chart based on the per cent slope a correction was determined in the field to locate the slope interval accurate to one hundredth of a meter.

The survey was conducted by two people using a 30 meter chain. The per cent slope and correction factor was recorded for each station while the stations are pickets labelled with the grid coordinates in the field. The section lines were chained from the 30 NBL for sections west of and including line 54W and from the 20 NBL for the lines east, this was done to insure a constant reference line.

VLF-EM SURVEY:

The section lines were surveyed with a Scintrex EM-16 unit. All readings were determined facing south. The transmitting station used was Seattle which is on an approximate bearing of 150°.

Readings were taken at 12.5 meter intervals with dip angles recorded in per cent slope. The quadrature was also recorded for each station. The dip angle readings were corrected to remove terrain influence before plotting. The following formula is applied to each slope per cent to produce the terrain correction factor T:

$$T = \frac{1}{2} \arctan \frac{\sqrt{2}}{\tan \tau - \cotan \tau}$$

where

$$\tan \tau = \tan \tau_1 \times \frac{\sin e_2}{\sin e_1}$$

where

$\tau_1$  = measured terrain slope angle along survey line

$e_1$  = angle between incoming electromagnetic field and strike of morphology

$e_2$  = angle between strike of survey line and strike of morphology

The terrain factor produced is a per cent tilt angle factor to be applied to the field reading (plus for minus terrain slopes and minus for plus terrain slopes).

The corrected dip angles and quadrature are plotted on figure 3. The dip angles are profiled to identify the anomaly cross overs.

MAGNETIC SURVEY:

The grid was surveyed using a Geometrics model G-816 proton magnetometer. The readings were corrected to a common datum by relating each to a series of base stations established along the 20 NTL-NBL. Readings of the total magnetic field were recorded at 25 meter intervals with intermediate readings in anomalous areas. Readings were recorded in a field notebook with time log between the established base stations.

The readings were plotted on a 1:2500 scale base map (Figure 4) for interpretation.

DISCUSSION OF RESULTS:

Figure 3;

The interpretation of the dip angle profiles indicates four prominent trends labelled A-D on the figure.

The "A" anomaly is a strong multibanded conductor sub-parallel the grid baseline. The anomaly trends across the grid. The anomaly is diminished along line 54W at 28+00N where depths of overburden probably increase. The western extent is masked by the presence of the powerline. This anomaly may represent the trace of the Danger Creek fault.

The "B" anomaly appears to separate into two zones west of line 56W @ 25+00N.

The "C" anomaly is adjacent to and sub-parallel the length of the 20 NBL. This structure occurs at the base of the hill to the south which is underlain by outcrops of rhyolite porphyry. This location is consistent with the apparent fault contact with the volcanic-sediment division within the Grew Creek-Danger Creek fault zone.

The "D" anomaly immediately separates to two zones west of line 46W at 18+00N.

The prominent and persistent structures that sub-parallel the grid baselines are low priority exploration targets but the discontinuous and disjointed structures may warrant further evaluation.

Figure 4:

The total magnetic field is plotted on the figure. The 450  $\gamma$  and 500  $\gamma$  contours are indicated on the figure.

The apparent separation of slightly higher readings may be related to depth of overburden which is apparently greater north of the 20 NBL than the southern portion of the grid.

The localized spot highs recorded in the southern part of the grid may reflect the location of small domes or dykes of olivine basalt which are known to intrude the rhyolite porphyry at other locations.

CONCLUSIONS AND RECOMMENDATIONS:

The VLF-EM survey has indicated several trends consistent with the prominent northwesterly-southeasterly regional trend. The survey also indicates several discontinuous and disjointed structures associated with the major trends. These anomalies represent potential targets for further evaluation.

The magnetic survey has indicated possible intrusive basalts associated with the underlying rhyolite porphyry in the vicinity of the "D" structures.

It is recommended to carry out soil sampling where practical at the following locations:

Lines 46W-51 W @ 17+00N - 18+50N

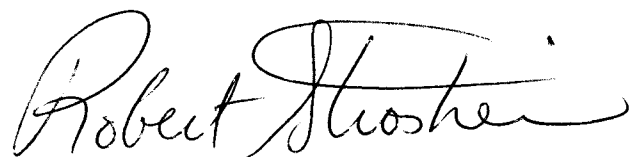
Lines 56W-57W @ 28+00N - 29+00N

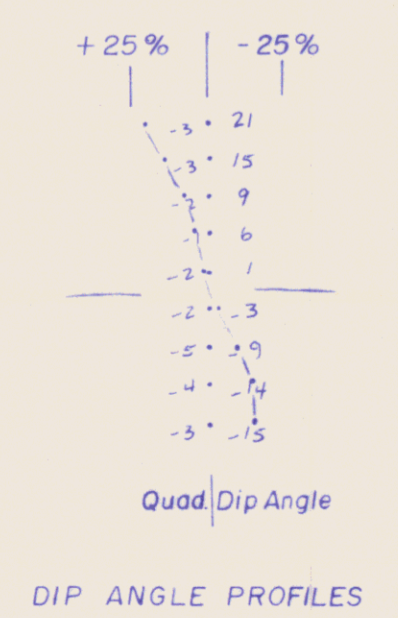
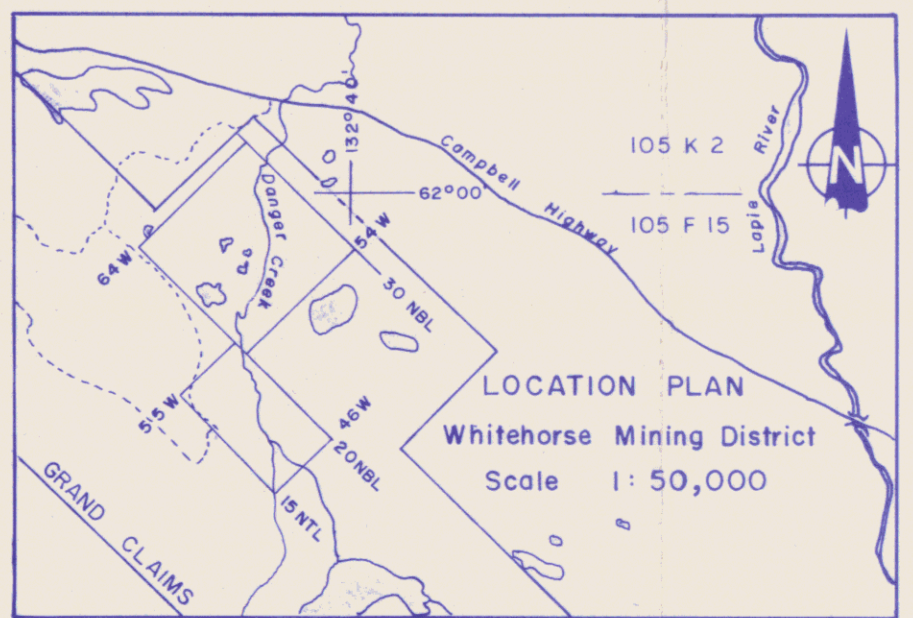
Lines 59W-61W @ 25+00N - 26+50N

Lines 60W-62W @ 21+50N - 23+00N

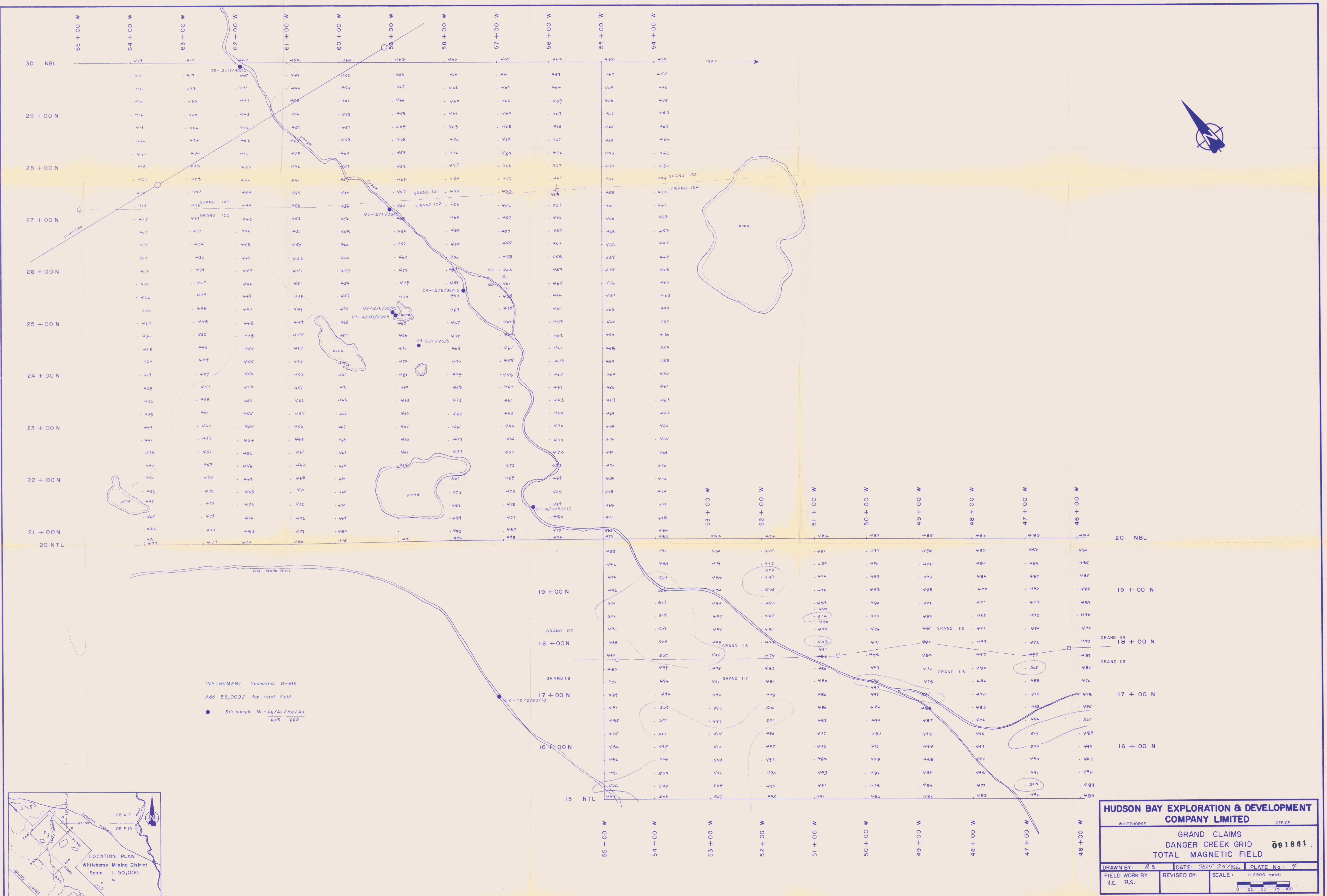
A sample spacing of 25 meters could be used with samples collected on alternate lines and analysed for gold, silver, arsenic and mercury.

Further sampling or possible trenching would be dependent upon the geochemical survey.

A handwritten signature in cursive script, reading "Robert Stosher". The signature is written in black ink and is located in the lower right quadrant of the page.

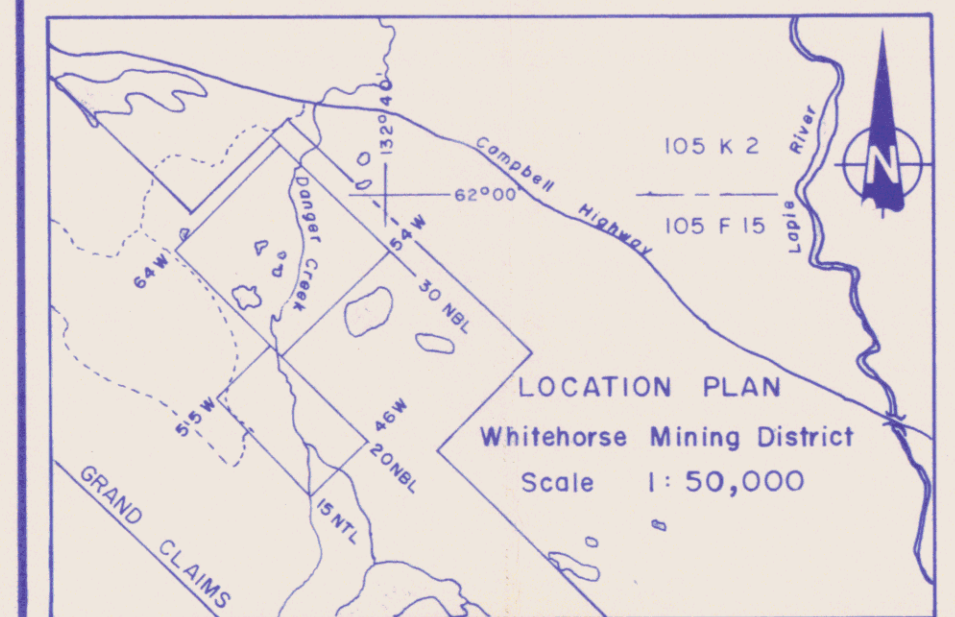


<b>HUDSON BAY EXPLORATION &amp; DEVELOPMENT COMPANY LIMITED</b>			
WHITEHORSE	OFFICE		
GRAND CLAIMS			
DANGER CREEK GRID			
VLF-EM DIP ANGLE PROFILES			
091861			
DRAWN BY: RS	DATE: SEPT 25/86	PLATE No.: 3	
FIELD WORK BY: KG: RS.	REVISED BY:	SCALE: 1:2500 metric	
0 25 50 75 100			



INSTRUMENT: Geometrics G-816  
 Add 58,000' for total field.

● Silt sample No.-Ag/As/Hg/Au  
 ppm ppb



**HUDSON BAY EXPLORATION & DEVELOPMENT COMPANY LIMITED**

WHITEHORSE OFFICE

GRAND CLAIMS  
 DANGER CREEK GRID  
 TOTAL MAGNETIC FIELD 091861

DRAWN BY: A.S. DATE: SEPT 25/86 PLATE No.: 4  
 FIELD WORK BY: V.C. R.S. REVISOR: SCALE: 1:2500 metric

0 25 50 75 100

APPENDIX I

SUMMARY OF EXPENDITURES: Danger Creek Grid

Linecutting; Eastern Associates Reg'd Invoice # 085556 20 km @ \$225.00 per km	\$ 4,500.00
Salaries:	
R. Stroshein 4 days @ 200\$/day	800.00
K. Galambos 8 days @ 130\$/day	1,040.00
V. Celuszak 7 days @ 110\$/day	770.00
Transport:	
Truck Rental Norcan Leasing 9 days ÷ 30days/month x 1550\$/month	465.00
Gasoline and Maintenance	
Barry's Auto Center Invoice 11706 Aug. 29/86	37.00
Ross River Service Centre Invoice 0556 Sept. 1/86	60.02
Geochemical:	
8 silt (soil) samples @ 15.50\$ each	124.00
Camp Supplies:	
Ice House Invoice 004679 Aug. 29/86	67.25
Super Valu Invoice 0173384 Aug. 29/86	<u>199.08</u>
Total Expenditures -	\$ 8,064.35

## APPENDIX II

### BIBLIOGRAPHY OF ASSESSMENT REPORTS

1. GEOPHYSICAL REPORT OF GROUND MAGNETIC AND ELECTROMAGNETIC SURVEYS ON THE CANYON CLAIM GROUP; Hudson Bay Exploration and Development Company Limited. April 30 to May 20, 1984.
2. ASSESSMENT REPORT OF DIAMOND DRILLING AND TRENCHING ON THE CANYON CLAIM GROUP; Hudson Bay Exploration and Development Company Limited. June 2-6, 1984.
3. REPORT OF BORE HOLES CAN 11 & 12 ON CANYON 2 CLAIM; Hudson Bay Exploration and Development Company Limited. October 10-15, 1984.
4. EXPLORATION REPORT OF GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL SURVEYS ON THE CANYON CLAIM GROUP; Hudson Bay Exploration and Development Company Limited. December 4, 1984.
5. ASSESSMENT REPORT OF GEOLOGICAL MAPPING GEOCHEMICAL SAMPLING AND LINECUTTING ON THE GRAND 1-48 CLAIMS AND TRENCHING ON GRAND 1; Hudson Bay Exploration and Development Company Limited. June 23/84 - May 22/85.
6. ASSESSMENT REPORT OF GEOLOGICAL MAPPING AND GEOCHEMICAL SAMPLING ON THE GRAND 49-162 CLAIMS; Hudson Bay Exploration and Development Company Limited. May to Sept. 6, 1985.
7. ASSESSMENT REPORT OF GEOLOGICAL MAPPING AND GEOCHEMICAL SAMPLING ON THE CANYON 300-320 CLAIMS; Hudson Bay Exploration and Development Company Limited. May to Sept. 6, 1985.
8. CANYON-GRAND CLAIMS - ROTARY DRILL PROGRAM ; Hudson Bay Exploration and Development Company Limited. August 30-September 14, 1985.
9. ASSESSMENT REPORT OF GEOLOGY AND GEOCHEMICAL SAMPLING CANYON CLAIMS (216, 218-222, 311-312, 353-356); Hudson Bay Exploration and Development Company Limited. June 10, 1986.
10. GEOPHYSICAL REPORT OF GRAND MAGNETIC AND ELECTRO-MAGNETIC SURVEYS ON THE DANGER CREEK GRID GRAND 49-158 CLAIMS; Hudson Bay Exploration and Development Company Limited. August 21 - September 6, 1986.

APPENDIX III

ROBERT W. STROSHEIN

EDUCATION:

B. Sc. (Geological Engineering) from  
University of Saskatchewan  
Graduated in 1973

EMPLOYMENT:

1973 - 1984 Hudson Bay Exploration & Development Co. Ltd.

Flin Flon Office 1973 - 1975

Drill Geologist - field supervisor of diamond  
drill projects Northern Manitoba and Saskatchewan.

Whitehorse Office

Project Geologist 1975-1980 - field supervisor of  
geological mapping, geophysical, geochemical and  
prospecting programs in the Yukon Territory.  
Included report preparation and assessment.

Senior Exploration Geologist - 1981 - planning,  
monitoring and assessing exploration projects  
conducted in the Yukon Territory.