

REPORT ON A  
MULTIFREQUENCY ELECTROMAGNETIC AND  
MAGNETIC SURVEY

IN THE SUMMIT LAKE AREA

FOR OWNER AND OPERATOR  
SCOTTIE GOLD MINES LTD.

Latitude 56° 14' 00" N  
Longitude 130° 05' 00" W

N.T.S. 104 B-1

MINING DIVISION: SKEENA

SURVEY DATES: September 1 - 9, 1983

 **GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**12,342**

October 25, 1983  
Vancouver, British Columbia

Apex Airborne Surveys Ltd.  
Ronald F. Sheldrake, B.Sc.

**PART 1 OF 2**

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### LIST OF PLATES - in map pocket

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(This map displays claim and flight line disposition)

APPENDIX I - INSTRUMENTATION

APPENDIX II - IN-FLIGHT RECORD AND FLIGHT PATH RECOVERY

APPENDIX III - PERSONNEL

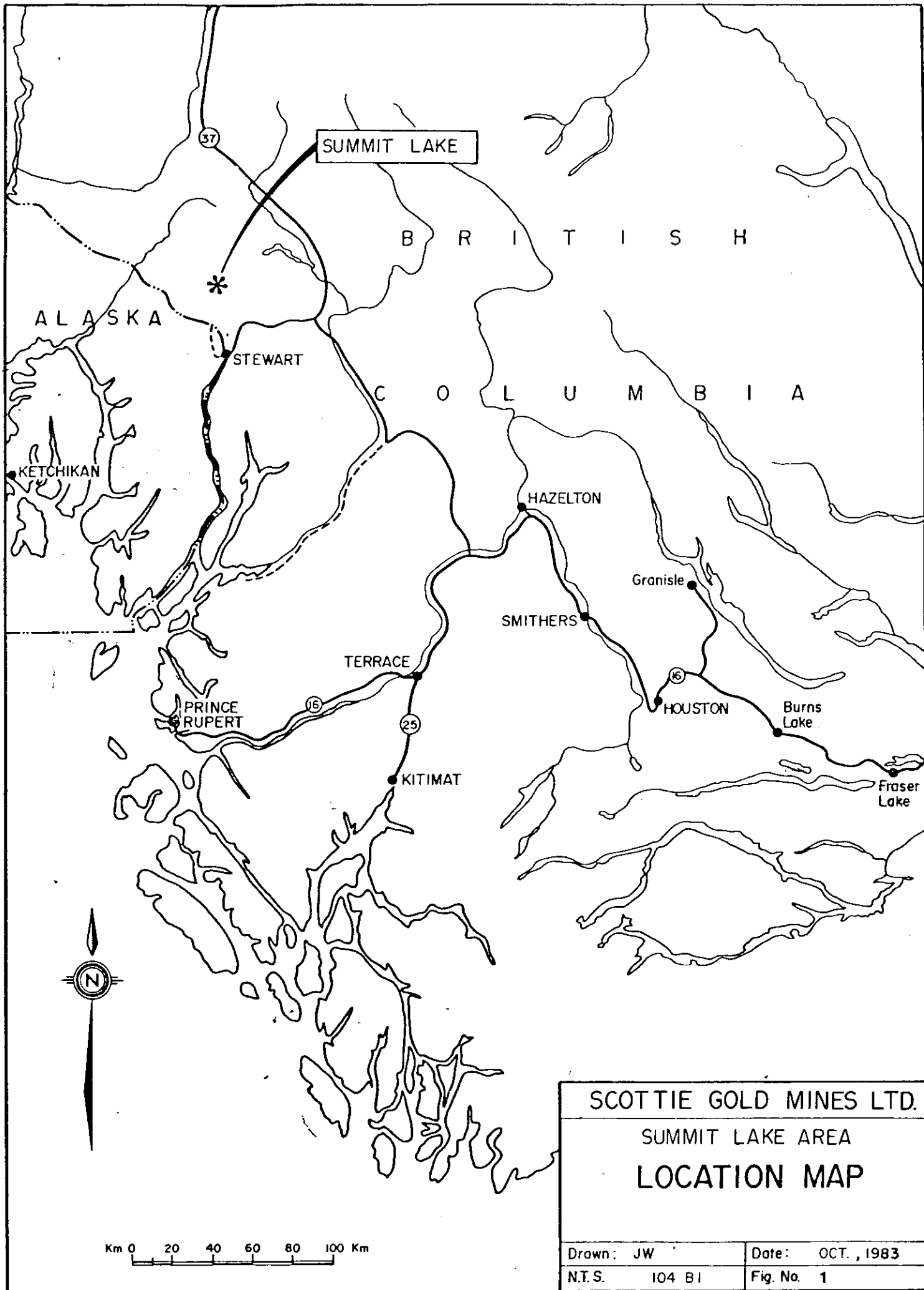
APPENDIX IV - STACKED PROFILES - scale 1:15,000 (in binder)

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1. SUMMARY

The Apex E.M. and Magnetometer system has easily identified the massive sulphide veins of the SCOTTIE GOLD MINE area.

Three areas have been identified by the present survey that indicate the presence of SCOTTIE GOLD MINES type mineralization.

Further, an anomalous magnetic response was identified on the DON I claim that may be a target for a relatively large metalliferous deposit.

Recommendations for follow-up of these areas have been made.

## 2. INTRODUCTION

The purpose of the helicopter borne electromagnetic and magnetic survey was to locate massive sulphide veins that are host to the gold and silver mineralization that is presently being mined at the SCOTTIE GOLD MINE.

The veins are typically less than a meter in thickness and less than 60 meters in length. (1)

The electromagnetic equipment used for this survey consists of an in-phase out-of-phase system comprising of two sets of transmitters and receivers operating at different frequencies and configurations. See FIGURE 1.

The E.M. data measurements are acquired every 0.1 second (which is about every 3 meters on the ground at survey flight speed) therefore the system is ideal for the location of small targets. Magnetometer readings are acquired at 1.0 second intervals with a sensitivity of 1 gamma.

APPENDIX I gives the details of the geophysical equipment used for this survey. APPENDIX II describes the flight record and flight path recovery process.

The survey comprised of 44 traverses totalling 199 kilometers. A Bell 206 L Long Ranger supplied by SCOTTIE GOLD MINES (ex Vancouver Island Helicopters Ltd.) was used as a platform for the geophysical equipment.

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(1) Personal communication, Mr. N. Tribe, Geologist, Scottie Gold Mines.

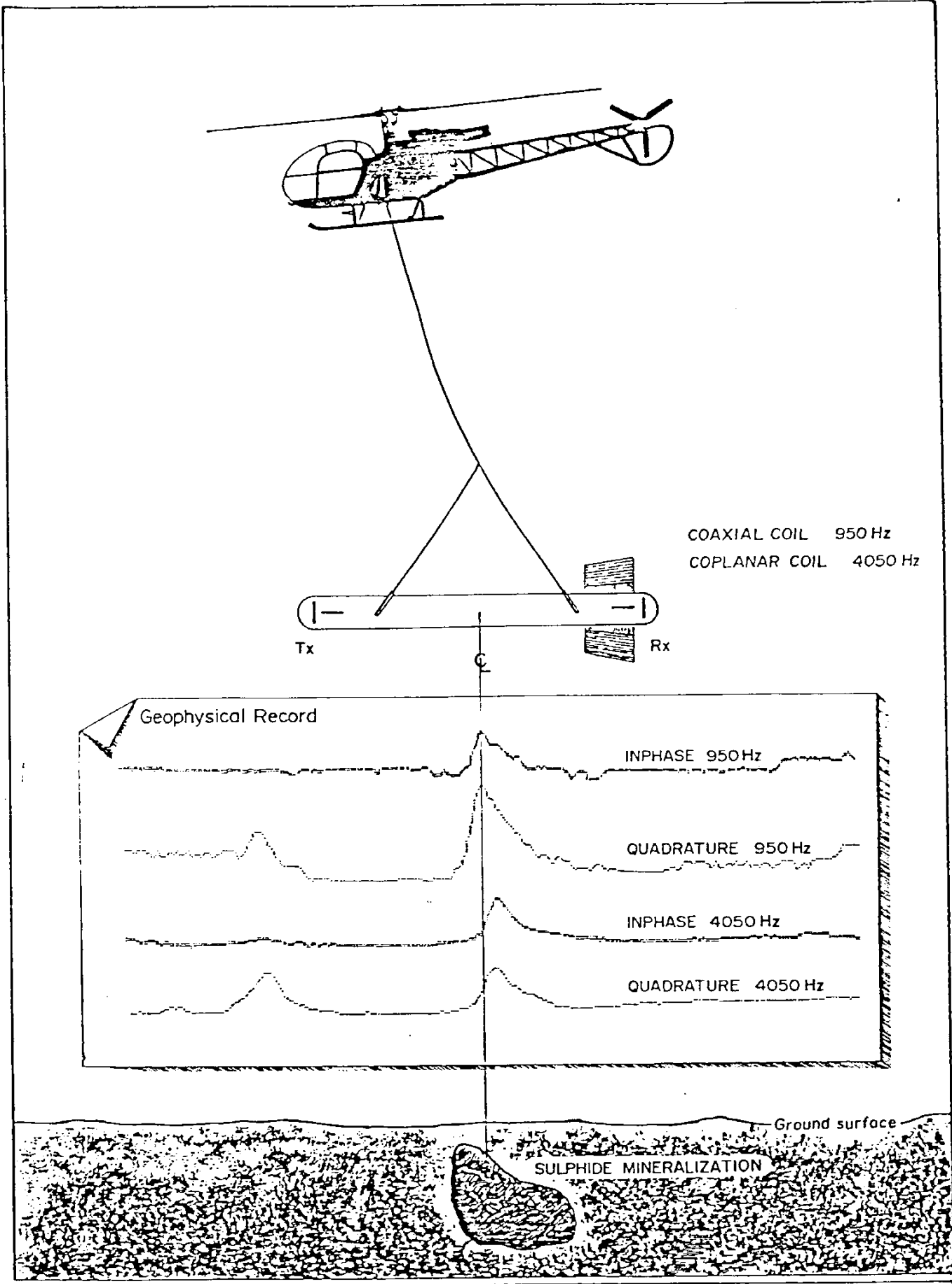


FIGURE 2  
 SCHEMATIC OF TWO FREQUENCY-CONFIGURATION  
 H.E.M. SYSTEM  
 APEX AIRBORNE SURVEYS LTD.

## GEOLOGY (1)

The general geology is described as a strongly faulted assemblage of volcanic breccias and pyroclastic debris intruded by a quartz monzonite/diorite stock.

## LOCATION AND ACCESS (1)

The Scottie claim group is located about 24 miles (38 kms) north of Stewart, B.C. The claim group is located on the west side of Summit Lake, 2 - 3 kms. south of the Canada Wide concentrator.

Access to the property is from Stewart by the restricted access Canada Wide road. The claim groups are located on the west side of Summit Lake and are accessible in part from the Scottie Mine road. The mine road transects the eastern edge of the claim group. Access elsewhere on the property is on foot.

## TOPOGRAPHY (1)

The topography of the claim group is rugged. Elevation ranges from 2600' (800 m) to 6200' (1900 m). The central area of the claim group is occupied by a relatively static snow field (Fig. 2) with strongly serrated ice fields occupying the upper reaches of the Morris Summit glacier. Although outcrops are generally plentiful, some are inaccessible by virtue of their steepness.

Scrub timber and slide alder occupies ground below 1050 m except where recent ice retreat has occurred.

In general, there has been a rapid ablation of ice and snow fields in the area, giving rise to large areas of fresh outcrop with little established alpine vegetation.

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(1) Taken from an internal corporate report by R. Wares, P.Eng. and W. Gewargis, B.Sc. "Geological Report; Surface Mapping," Scottie Gold Mines Ltd., October 29, 1982.

**CLAIMS**

The claims that are listed below have been covered, or partly covered, by the present geophysical survey.

**Scot Group**

Scot I  
Scot II  
Scot 3  
Scot 4  
Scto 5  
Scot 6  
Scot 7  
Scotty  
Crown Grants 6407 - 6412  
Crown Grants 6296 - 6301  
Crown Grants 6405 - 6406  
Don 1  
Don 2  
Don 3

**Northcal Group**

Aug 1  
Sal

**Carmac Group**

Summit #1  
Summit #2

The location of the claims is identified on PLATE 1 - THE E.M. CONDUCTOR AND MAGNETIC CONTOUR MAP.

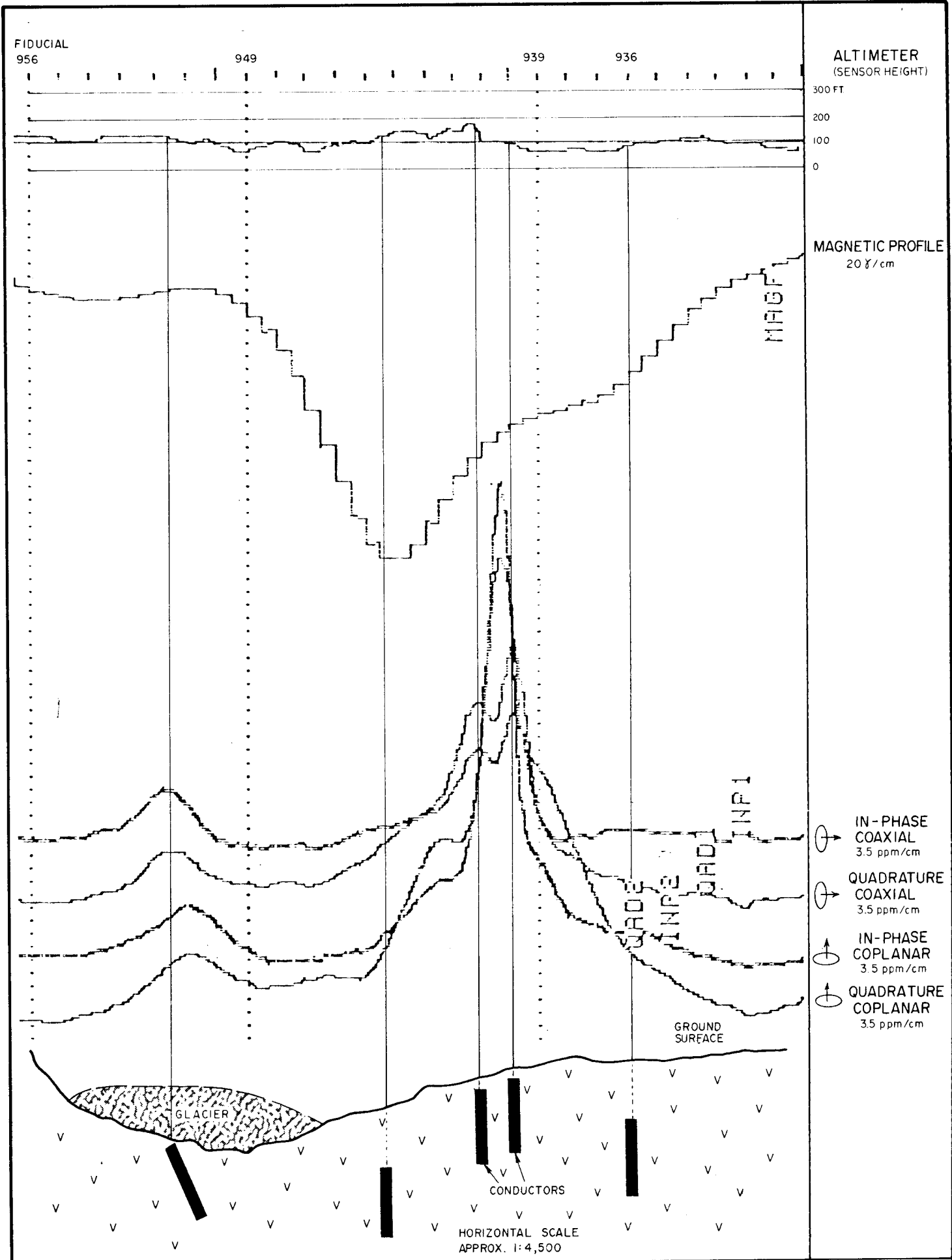


### 3. DATA PRESENTATION

A contour map of the total field magnetometer values (Plate 1) has been provided at a scale of 1:15,000. The data have been corrected for diurnal variation but are uncorrected for regional gradient. The contour interval is 10 gammas. The electromagnetic anomalies are also plotted on this map.

Computer plots of each of the traverses that comprise this survey are included in a separate binder and submitted to the client with this report (APPENDIX IV). The profiles are corrected for flight speed variations and are plotted at the scale of the base map. The profiles display the following:

magnetic profile	55 gammas/cm
E.M. 1 coaxial coil in-phase	5 ppm/cm
E.M. 2 coaxial coil quadrature	5 ppm/cm
E.M. 3 coplanar coil in-phase	5 ppm/cm
E.M. 4 coplanar coil quadrature	5 ppm/cm
radar altimeter (helicopter)	275 ft/cm
sferics and powerline monitor	



DIAGRAMMATIC SKETCH: SCOTTIE GOLD MINE AREA, L.5.0

FIGURE 3

APEX AIRBORNE SURVEYS LTD.

OCTOBER 1983

#### 4. DISCUSSION OF RESULTS

##### SCOTTIE MINE AREA

The Apex System recorded 11 distinct conductors on 4 lines in the area of the SCOTTIE GOLD MINE. These responses are thought to arise from massive sulphide veins.

The strongest responses were recorded on L 5.0 on which five conductors are indicated. FIGURE 3 displays the data from this traverse and provides an interpretational sketch. The conductor at fiducial 951.5 lies beneath 30 meters (interpreted depth) of glacier and is part of the zone presently being mined.

The magnetic depression associated with the SCOTTIE MINE AREA may indicate a zone of alteration and could be an important marker to the gold and silver ore. This magnetic signature is evident in 3 other places on the map sheet:

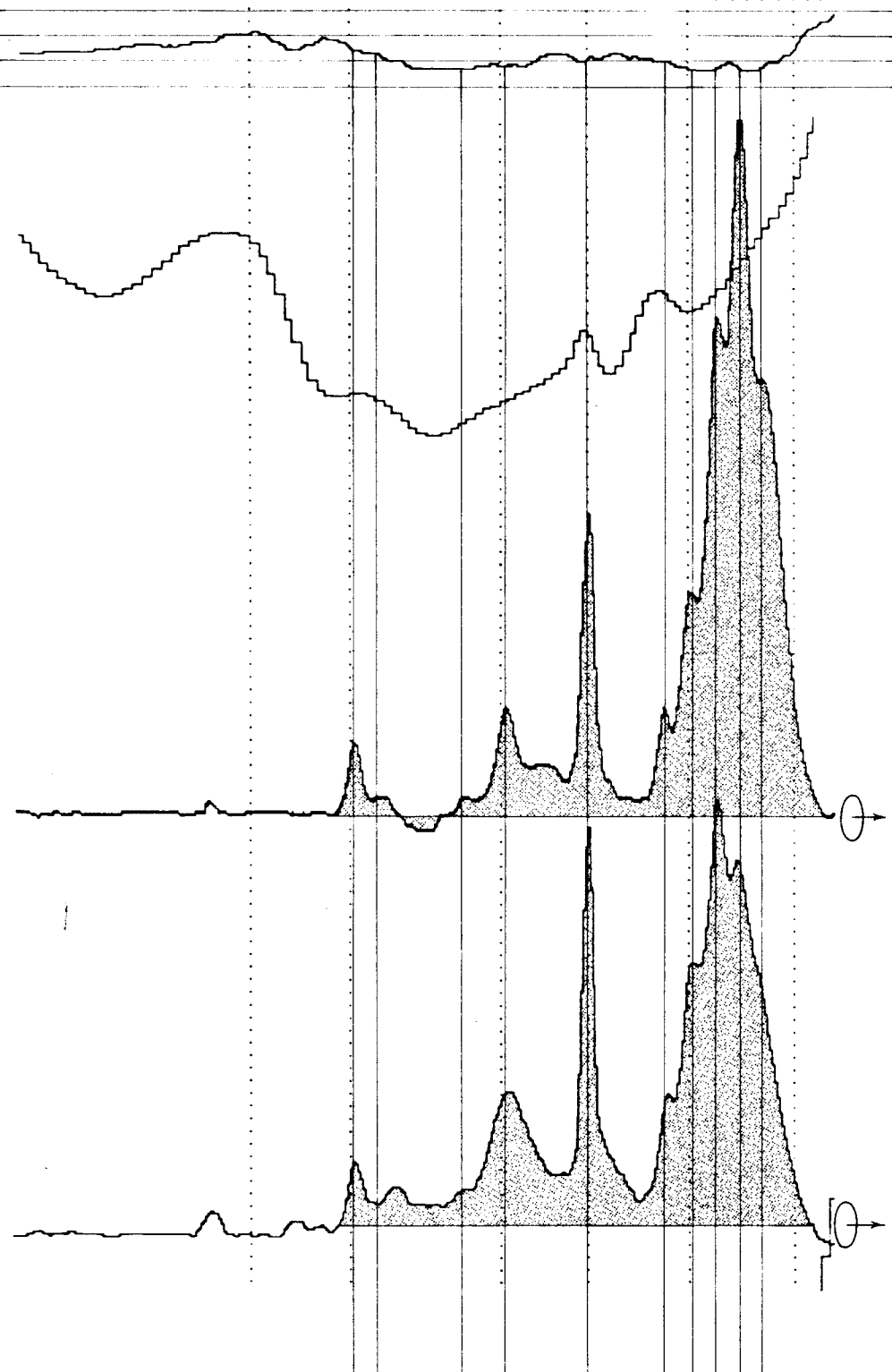
1. in the "SCOTTY" area,
2. in the area of the crown grants in the AUG claim,
3. and at the southern end of Lines 21 and 22.

Electromagnetic conductors were recorded in all of these areas and could be caused by veins of massive sulphides. Each area is discussed below.

FIDUCIAL 652 658 667 673 681 688

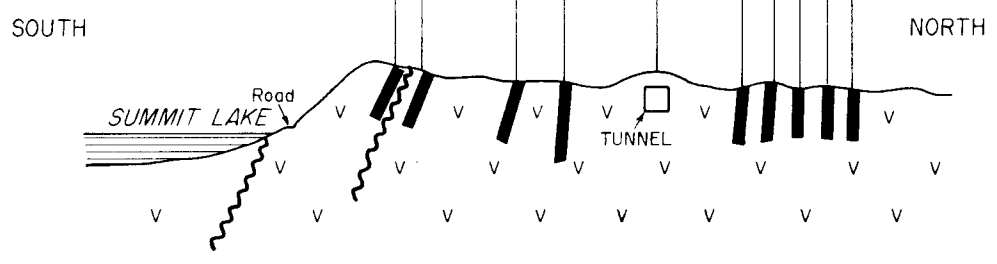
ALTIMETER  
300 FT.  
200 (SENSOR TERRAIN CLEARANCE)  
100  
0

MAGNETOMETER  
30  $\gamma$ /cm



IN-PHASE COAXIAL COIL  
5 ppm/cm

QUADRATURE COAXIAL COIL  
5 ppm/cm



FAULTS LOCATED FROM PHOTO DATA.

DIAGRAMMATIC SKETCH: PART LINE 1.5 "SCOTTY" AREA

APEX AIRBORNE SURVEYS LTD.

FIGURE 4

OCTOBER 1983

## 1. SCOTTY AND SCOT 1 CLAIM AREA

As previously mentioned this area is characterized by a zone of magnetic disturbance, suggesting a zone of alteration.

The geophysical data indicates that for the most part the "altered" zone lies east of the mine road under SUMMIT LAKE and probably extends beyond the data collected by the present survey.

Evidently the sedimentary rocks lying east of SUMMIT LAKE overlie the volcanic rocks that are host to the sulphide veins. The geophysical responses suggest the capping is not very thick and is in the order of 10 - 30 meters.

The portion of L 1.5 that was flown over the SCOTTY AND SCOT 1 AREA has been replotted in FIGURE 4. (For clarity only the COAXIAL COIL data is plotted.) Ten conductors are indicated from the data, including one that is due to the railway tracks in the tunnel to the mine. The remaining conductors are thought to be veins of massive sulphide materials.

The traverses L 1.5 and L 5 are two of seven test lines that were flown with the DIGHEM System (a subsidiary of Tech Corporation) in May 1983 on behalf of NORTHAIR MINES LTD.

The data from both the APEX and DIGHEM systems over these traverses are included in APPENDIX V for comparison purposes. Although the DIGHEM system provides for an additional third frequency the APEX data is significantly more sensitive to the targets of the SCOTTIE GOLD MINE area. For example the DIGHEM data that was collected over the mine area (L 20) did not respond significantly to the mineralized zone that lies beneath the glacier.

2. AUG - CROWN GRANT AREA

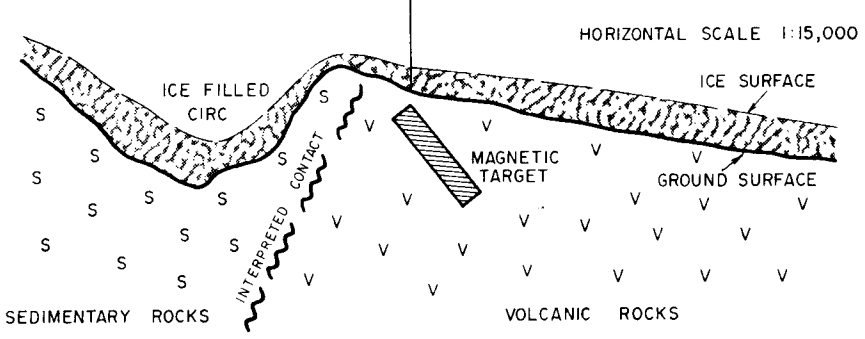
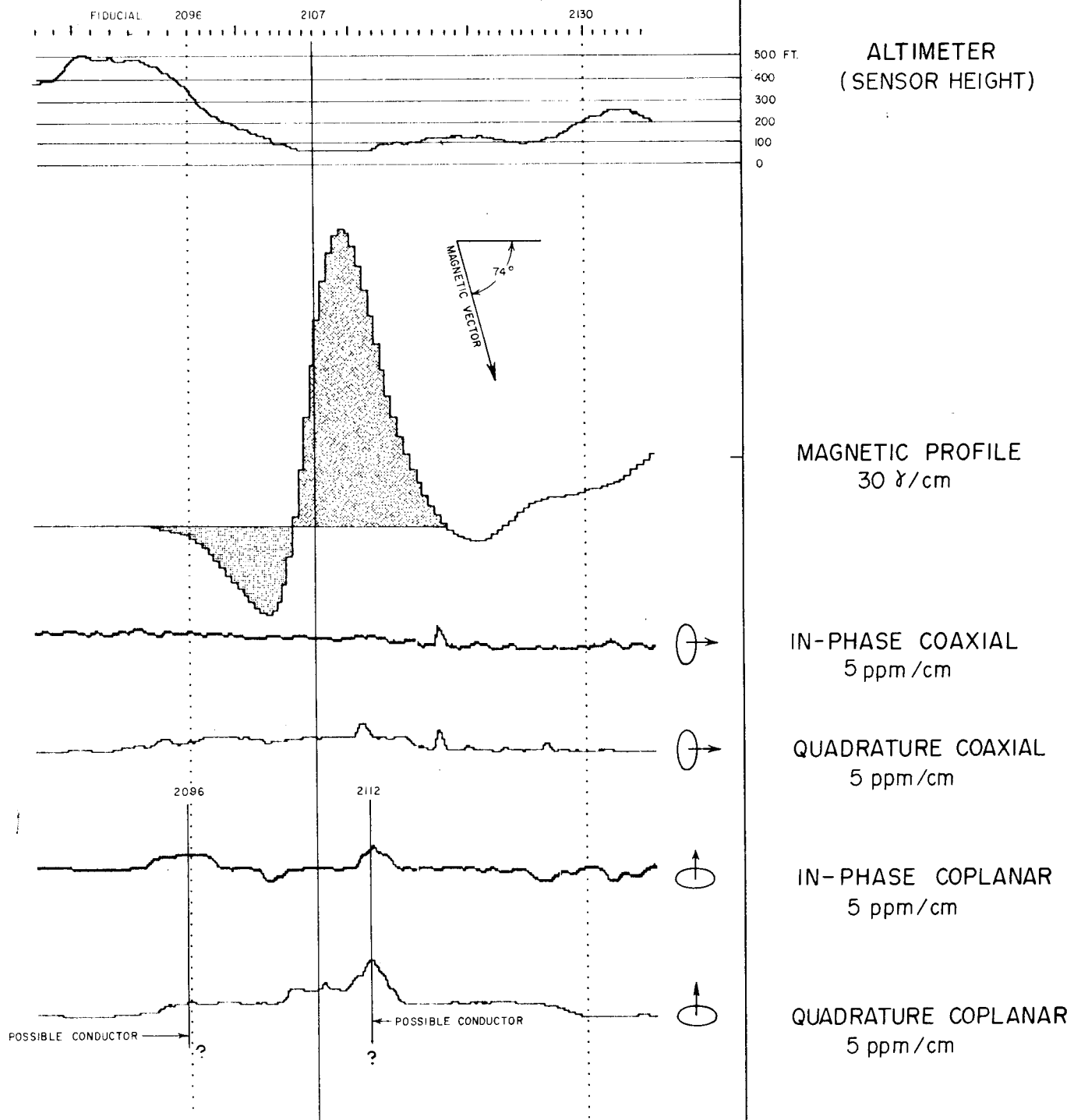
The magnetic characteristic of this area is similar to the Scotty Gold Mine (i.e., negative magnetic response - suggestive of altered zone). Although the E.M. responses are less well defined (because of terrain clearance) the area warrants further examination.

The best responses in this area were recorded on L 13-1 between fiducials 2113 and 2130. Four conductors are indicated on this traverse.

3. SOUTH AREA - L 21 FID 1022 - 1054

This area is also characterized by a magnetic depression and a number of strong electromagnetic conductors. The E.M. conductors could arise from massive sulphide veins, but the presence of conductive graphitic rocks cannot be ruled out. The two possibilities cannot be distinguished from the geophysical data.

However, the photo base map indicates that outcrop is plentiful along traverse L 21 and a geological examination of the area should be possible.



DIAGRAMMATIC SKETCH: MAGNETIC ANOMALY-LINE 15, Fid. 2107  
 APEX AIRBORNE SURVEYS LTD.

FIGURE 5  
 OCTOBER 1983

MAGNETIC ANOMALY - L 15 FIDUCIAL 2107

This response is anomalous to the mapsheet and different from that of the SCOTTIE GOLD MINE AREA. However, it may provide a target for a large tonnage metalliferous deposit.

The response is displayed in FIGURE 4 with a diagrammatic sketch.

The magnetic profile indicates a tabular body that is dipping approximately  $45^{\circ}$  northwards. The interpreted depth to the top of the source is about 30 - 50 meters.

The anomalous response was recorded on the Don 1 claim and lies contiguous to an interpreted contact between the sedimentary rocks in the southwest and the volcanic breccias in the northeast.

There is some weak E.M. response associated with the magnetic anomaly but it is close to the noise level of the system and is not very distinctive.

The magnetic response indicates a fairly large zone (about 100 m x 100 m) and ought to be given first priority.

Although the target is under the glacier the magnetic response is well defined and the selection of a drill hole location from ground detail surveying ought to locate the target with good accuracy.



E.M. RESPONSES - L 8, L 8.5, L 9.5, L 10, L 10.5 (these traverses are located about 700 meters west of the SCOTTIE GOLD MINE).

These are weak E.M. responses that were recorded near where massive sulphide float was discovered in 1980.<sup>(1)</sup> The float contained excellent gold and silver values.

REMARK: A small sample of the float material (about 36 cubic centimeters) was made available to the writer to test its conductivity. The sample was tested with a Simpson voltmeter which indicated it was very conductive.

REMARK: It is instructive to compare the responses of this area to the ones recorded on L 5 at the SCOTTIE GOLD MINE (FIGURE 3). The response recorded at fiducial 951.5 is stronger than any of the responses recorded in this area, even though the SCOTTIE GOLD MINE response is due to a conductor below 30 meters (interpreted depth) of glacier.

The question of whether these responses could be caused by veins similar to the ones at the SCOTTIE GOLD MINE or veins of the above mentioned float material cannot be answered with surety. If a massive sulphide conductor has been fractured or contains non-conductive sulphide minerals (sphalerite, for example) so that the conductor is not continuously conductive (over meters or tens of meters) then the apparent conductance (or geophysical response) will be lower than expected.

The strongest response in this group was recorded on L 10 at fiducial 1341 and fiducial 1345. The response is supported as anomalous by its permeability effect (negative in-phase response) which suggests a concentration of magnetic minerals.

The conductors that were recorded lie near outcropping rocks and geological examination may be possible.

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(1) Taken from an internal corporate report by R. Wares, P.Eng. and W. Gewargis, B.Sc. "Geological Report; Surface Mapping," Scottie Gold Mines Ltd., October 29, 1982.

## APPENDIX I

### INSTRUMENTATION

#### Electromagnetic Instrument

- Type: Helicopter mounted in-phase - quadrature instrument. Coplanar coils - 4050/hz. Coaxial coils 950 hz. Manufactured by Geonics Ltd., Toronto.
- Coils: Coplanar - 5.5 meter separation 4050 hz.  
Coaxial - 6.0 meter separation 950 hz.
- Noise Level: Less than 1.0 ppm peak to peak (0.6 sec. time constant)

#### Magnetometer

- Type: Towed sensor type, proton precession model G803 manufactured by Geometrics Corporation, Toronto.
- Cycling Time: 1.0 second.
- Sensing Head Design: 5 inch diameter toroid.

#### Ancillary Equipment:

UDAS Digital Acquisition System with recorder.  
Geocam 35 mm Flight Path Camera  
Bonzer Radio Altimeter  
Geometrics G806 Magnetic Base Station and recorder.

- Helicopter: Bell 206 L supplied by Vancouver Island Helicopters, Stewart, B.C.

**MAGNETIC ANOMALY L 1.5 FIDUCIAL 626**

A magnetic response of 50 gammas was recorded within the SUMMIT 1 claim. The response warrants mention because of its relative isolation; no correlatable response was recorded on the adjacent lines. This suggests the presence of an anomalous concentration of pyrrhotite or magnetite. One difficulty however, is that the source for this anomaly lies under SUMMIT LAKE.

**5. CONCLUSIONS AND RECOMMENDATIONS**

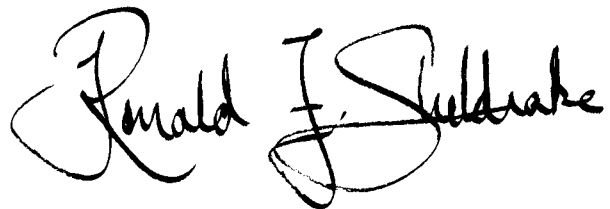
The APEX geophysical system is an excellent tool for the location of the massive sulphide veins in this geological environment.

It is recommended that a low frequency electromagnetic system (MAX-MIN or equivalent) be used to locate the airborne conductors on the ground. A frequency range of 200 to 4,000 herz should be used with readings taken every 5 meters.

For the MAGNETIC ANOMALY located on L 15 it is recommended that detail magnetic readings be taken on the glacier. Readings should be taken to a 1 gamma precision at a line and station interval of 10 meters. Drill hole locations ought to be identifiable from that data.

Because of its close proximity to camp, the anomaly located on L 1 at fiducial 469 would offer the best immediate prospect as a target for SCOTTIE GOLD vein type mineralization.

Respectfully submitted

A handwritten signature in black ink, reading "Ronald F. Sheldrake". The signature is written in a cursive style with large, sweeping loops.

---

Ronald F. Sheldrake  
Apex Airborne Surveys Ltd.

## BIBLIOGRAPHY

- Geonics Ltd. (Toronto) - Technical note TN-4 - "Interpretation Aids for E.M. 33 Helicopter Electromagnetic System".
- M.K. Gosh and G.F. West - A.E.M. Analogue Model Studies, produced by Norman Paterson & Associates Limited, Toronto.
- Vacquier V., Steenland, N.C.- and Henderson, R.G. - Interpretation of Aeromagnetic Maps, Geological Society of America, Memoir No. 47.
- Douglas C. Fraser - The Multicoil II Airborne Electromagnetic System, Geophysics, Vol. 44, No. 8, August 1979, pp. 1367 - 1394.
- Mr. N. Tribe, Geologist - Personal communication, September 1, 1983.
- R. Wares, P.Eng. and W. Gewargis - Geological Report; Surface Mapping, Scottie Gold Mines Ltd., October 29, 1982, internal corporate report.
- Z. Dvorak - DIGHEM III SURVEY of the SCOTTIE MINE AREA, Stewart, B.C. for Northair Mines Ltd., July 7, 1983.

## APPENDIX I

The electromagnetic instrumentation used on this survey utilized both coplanar and coaxial coil configurations at two different frequencies.

The system is comprised of two sets of receivers and transmitters as follows:

- (1) COAXIAL PAIR - The coaxial transmitter-receiver pair are separated by 6 meters and utilize a "low frequency" signal of 950 Hz. This configuration couples best with vertical dike or vein-like targets.
- (2) COPLANAR PAIR - The coplanar transmitter-receiver pair are separated by 5.5 meters and utilize a "high frequency" of 4050 Hz. This configuration couples best with flat lying and tabular targets.

The transmitter and receiver coils for the two frequencies are located at the ends of the six meter bird. The bird is towed 30 meters below the helicopter by means of a suitable cable which also carries the electric signals to and from the bird.

Changes in the alternating magnetic field at the receiver coil, caused by eddy currents in the subsurface rock are recorded. These changes are expressed in ratios of the normal undistorted primary field. They are so small as to be expressed in parts per millions (p.p.m.).

The magnetometer used on this survey was a Geometrics Corp. G803. It is a total field nuclear precision instrument which measures the magnetic field strength with a resolution of 1 gamma. The sensor is toroidal and is positioned half way between the helicopter and the E.M. bird.

The measuring technique of the proton magnetometer can be understood by making the proton analogous to a tiny bar magnet spinning about its longitudinal axis, which has the properties of both a magnetized needle and gyroscope. The spinning magnet tries to align itself along the lines of force but the gyroscopic properties oppose this and the spinning magnet gyrates. The essential characteristic of the system is that the rate of gyration is proportional to the ambient magnetic intensity. This rate is measured electronically, multiplied by a suitable factor then displayed on the chart.

## APPENDIX II

### THE "ANALOGUE" CHART AND FLIGHT PATH RECOVERY

The in-flight tape is a roll of chart paper which moves through the digital printer at a speed of 5.48 cm per minute.

The digital printer chart facilitates the use of a full alpha-numeric system. All "header" sensitivity and fiducial information is printed automatically.

The chart is 520 dots wide as follows:

#### **DOTS**

0 - 10	powerline and spherics monitor
0 - 60	Altimeter - 10 feet per dot (0-600 feet)
60 - 160	quadrature - high frequency - $\frac{1}{4}$ ppm/dot
160 - 260	in phase - high frequency - $\frac{1}{4}$ ppm/dot
260 - 360	quadrature - low frequency - $\frac{1}{4}$ ppm/dot
360 - 460	in phase - low frequency - $\frac{1}{4}$ ppm/dot
460 - 520	magnetometer 2 gammas/dot

The helicopter flight path is recovered from 35 mm film, which is exposed at 2.0 second intervals during the flight traverses. After processing and anotating, recognizable fiducials are pin-pointed on a photomosaic map.

### APPENDIX III

#### Survey Personnel:

- Field Geophysicist: - Ronald F. Sheldrake  
1271 W. 22nd Street  
North Vancouver, B.C.
- Field Technician: - Michael Magee  
c/o Apex Airborne Surveys Ltd.  
Vancouver, B.C.
- Helicopter Pilot - Kevin Dawson  
c/o Vancouver Island Helicopters  
Stewart, B.C.

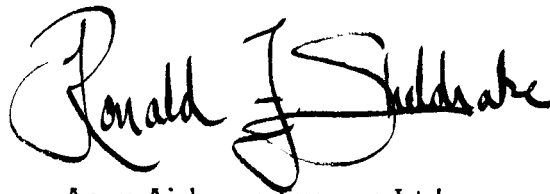


## CERTIFICATION

I, RONALD F. SHELDRAKE, of the City of Vancouver, Province of British Columbia, hereby certify as follows:

1. I am President of **Apex Airborne Surveys Ltd.** a company incorporated under the laws of the Province of British Columbia.
2. The Vancouver Office of **Apex Airborne Surveys Ltd.** is located at Suite 514 -625 Howe Street, Vancouver, British Columbia.
3. I received my B.Sc., in Geophysics from the University of British Columbia in May, 1974.
4. I have practised my profession since that date.
5. I have no interest, direct or indirect, in the properties or claims of **Scottie Gold Mines Ltd.**, nor do I expect to receive any.
6. I consent to the use of this report in or in connection with engineering reports or in a Statement of Material Facts.

Ronald F. Sheldrake

A handwritten signature in black ink that reads "Ronald F. Sheldrake". The signature is written in a cursive style with a large, stylized initial 'R'.

Apex Airborne Surveys Ltd.

October 25, 1983

October 25, 1983

STATEMENT OF COSTS

Type of Survey: Electromagnetic-Magnetic Helicopter Platform

Date(s) of Fieldwork: September 1 to September 9, 1983

Survey Kilometers: 199 Kilometers

Cost per Linear  
Kilometer: \$85.43

Additional Charges: None

Total Cost of Survey: \$17,000.00

# Scottie gold mines ltd.

1450 - 625 howe st., vancouver, b.c. V6C 2T6 telephone 687-7545

Sept. 1983

## COST STATEMENT - SCOTTIE AIRBORNE

1. Apex Airborne costs (attached):	\$17,000.00
2. Vancouver Island Helicopter (attached):	14,054.50
3. Helicopter Fuel (attached) - est. minimum 23.9 hrs x \$100/hr.	2,390.00
4. N. Tribe Supervision: - 3 days @ \$250/day	750.00
5. Room & Board - 3 men @ 9 days @ \$25/day	675.00
	<hr/> <hr/>
	\$34,896.50

A. Total Survey = 199 km.  
Total cost/km. =  $\frac{\$34,896.50}{199 \text{ km.}}$  = \$175.36/km.

B. Total Survey = 199 km  
Est. 65% on new claims =  $.65 \times 199 \text{ km}$   
129.35 km.

C. Total cost to new claims = A x B  
 $129.35 \text{ km} \times \$175.36/\text{km.} = \underline{\underline{\$22,682.82}}$

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**12,342**  
**PART 1 OF 2**

*J. J. Hurd*

		<u>Seattle Airtime</u>	
Aug 31		4 hrs	-
Sept 1		6.8 hrs	2 hrs fuel
Sept 2		-	-
Sept 3		5.5 hrs	2 hrs fuel
Sept 5		1.1 hrs	-
Sept 7		4.6 hrs	-
Sept 6		1.5 hrs	-
Minimum		0.4 hrs	-

23.9 hrs @ 575¢/hr  
 fuel 4.0 hrs @ 78¢/hr

13,742.50  
 312.00  
 14,054.50

from the desk of  
 FRED G. HEWETT + on fuel.

**VANCOUVER ISLAND HELICOPTERS LTD.**  
 #1, 9600 CANORA ROAD, SIDNEY, BRITISH COLUMBIA V8L 4R1  
 TELEPHONE (604) 656-3987

**DAILY FLIGHT INVOICE - CUSTOMER'S COPY**

ACT SCOTTIE GOLD.  
 SS \_\_\_\_\_

FT \_\_\_\_\_ DATE AUG. 31 19 83 BASE STEWART

TIME	REMARKS
4.0	MINIMUM HOURS CHARGED AS MACHINE TIED UP WITH APEX AIRBORNE SURVEY FOR SCOTTIE.
4.0	VIH FUEL _____ HRS.

30 DAYS INTEREST AT 2% PER MONTH (24% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS.

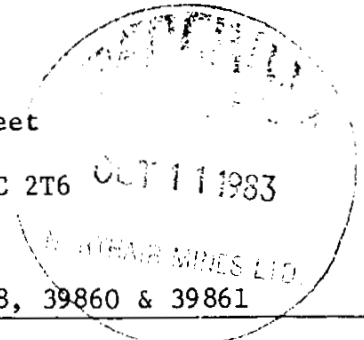
This company complies with the CODE OF ETHICS of the Helicopter Association International

NUMBER 354 SIGNATURE [Signature] PILOT [Signature]

DATE September 23, 1983

In Account With

Scottie Gold Mines  
 1450 - 625 Howe Street  
 Vancouver, B.C. V6C 2T6



REFERENCE Invoice #39854-39858, 39860 & 39861

FLYING SERVICE FOR MONTH OF August 31, September 19 83  
AS PER ATTACHED FLIGHT INVOICES 1,3,5,6 & 7

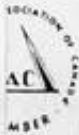
HELICOPTER TYPE Bell 206L-1 REG. No. C.F. VVI

BASE OF OPERATION Stewart

BALANCE FORWARD		
25.0 HOURS	@ \$ 575.00 PER HR.	<i>All-04 90.5</i> <i>Tenaga 8.5</i> 
4.0 HOURS V.I.H. FUEL	@ \$ 78.00 PER HR.	
_____ HOURS	@ \$ _____ PER HR.	
_____ HOURS V.I.H. FUEL	@ \$ _____ PER HR.	
MINIMUM CHARGES, IF APPLICABLE:		
Crew Expenses		
ADDITIONAL CHARGES		
TOTAL CHARGES		<u>13,201.74</u> <u>1,395.26</u> <b>\$ 14,687.00</b>

TERMS: 30 DAYS NET  
Interest at 2% per month (24 per cent per annum) charged on overdue accounts.

This company complies with the CODE OF ETHICS of the Helicopter Association of Canada



# VANCOUVER ISLAND HELICOPTERS LTD.

#1, 9600 CANORA ROAD, SIDNEY, BRITISH COLUMBIA V8L 4R1  
TELEPHONE (604) 656-3987

DAILY FLIGHT INVOICE - CUSTOMER'S COPY

TRACT	SCOTTIE GOLD
RESS	

AIRCRAFT	DATE	BASE
UUI	SEPT 3 1983	STEWART.

OFF	TIME	REMARKS
1	11	MOVE FOR FUEL
2	15	STEWART → CAMP.
1	1:0	FLY ON BIRD.
2	1:8	" " "
2	1:3	" " "
8	0.8	" " "
AL	5:5	VIH FUEL 2.0 HRS.

NET 30 DAYS. INTEREST AT 2% PER MONTH (24% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS.

This company complies with the CODE OF ETHICS of the Helicopter Association International

VOICE NUMBER	SIGNATURE	PILOT
9856		



# VANCOUVER ISLAND HELICOPTERS LTD.

#1, 9600 CANORA ROAD, SIDNEY, BRITISH COLUMBIA V8L 4R1  
TELEPHONE (604) 656-3987

DAILY FLIGHT INVOICE - CUSTOMER'S COPY

CONTRACT	SCOTTIE GOLD
ADDRESS	

AIRCRAFT	DATE	BASE
C6 <del>UUI</del> JVI	SEPT 1 1983	STEWART.

TIME OFF	TIME	REMARKS
1004	1.2	TEST AND CALIBRATION FLIGHT → BEAR PASS + RET.
1146	.7	STEWART → SCOTTIE GOLD CAMP.
1311	2.2	FLY E.M. BIRD OVER DESIGNATED GRID.
1546	2.0	" " " " "
1855	.6	RET STEWART.
1953	.1	MOVE BIRD → E. SIDE OF AIRFIELD.
TOTAL	6.8	VIH FUEL 2.0 HRS.

TERMS: NET 30 DAYS. INTEREST AT 2% PER MONTH (24% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS.



This company complies with the CODE OF ETHICS of the Helicopter Association International

INVOICE NUMBER	SIGNATURE	PILOT
39855		



# VANCOUVER ISLAND HELICOPTERS LTD.

#1, 9600 CANORA ROAD, SIDNEY, BRITISH COLUMBIA V8L 4R1  
TELEPHONE (604) 656-3987

## DAILY FLIGHT INVOICE - CUSTOMER'S COPY

ACT	SCOTTIE GOLD
SS	

FT	DATE	BASE
UWI	SEPT 7 1997	STEWART

TIME	REMARKS
109	FLY E.M. BIRD
27	" " "
07	" " "
107	" " " (07 TOWER)
	RET STEWART
50	VIH FUEL _____ HRS.

30 DAYS. INTEREST AT 2% PER MONTH (24% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS.

This company complies with the CODE OF ETHICS of the Helicopter Association International

INVOICE NUMBER	SIGNATURE	PILOT
358		



# VANCOUVER ISLAND HELICOPTERS LTD.

#1, 9600 CANORA ROAD, SIDNEY, BRITISH COLUMBIA V8L 4R1  
TELEPHONE (604) 656-3987

## DAILY FLIGHT INVOICE - CUSTOMER'S COPY

CONTRACT	SCOTTIE GOLD
ADDRESS	

AIRCRAFT	DATE	BASE
CG UWI	SEPT 7 1997	STEWART

TIME OFF	TIME	REMARKS
1619	102	FLY E.M. BIRD (07 TOWER)
1851	06	" " " "
TOTAL	108	VIH FUEL _____ HRS.

TERMS: NET 30 DAYS. INTEREST AT 2% PER MONTH (24% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS.

This company complies with the CODE OF ETHICS of the Helicopter Association International

INVOICE NUMBER	SIGNATURE	PILOT
39857		

# VANCOUVER ISLAND HELICOPTERS LTD.

#1, 9600 CANORA ROAD, SIDNEY, BRITISH COLUMBIA V8L 4R1  
TELEPHONE (604) 656-3987



## DAILY FLIGHT INVOICE — CUSTOMER'S COPY

ACT SCOTTIE GOLD  
SS

FT	DATE	BASE
<u>WVI</u>	<u>SEPT 7 1987</u>	<u>STEWART</u>

TIME	REMARKS
<del>10:00</del>	<del>ACCUMULATED MINIMUMS FOR 8 DAYS HOURS FOR MINIMUMS → 2.25 HOURS FLOWN → 20.6</del>
10:00	
10:00	
10:00	
VIH FUEL _____	HRS.

TERMS: NET 30 DAYS. INTEREST AT 2% PER MONTH (24% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS.

This company complies with the CODE OF ETHICS of the Helicopter Association International

INVOICE NUMBER 361

SIGNATURE	PILOT

# VANCOUVER ISLAND HELICOPTERS LTD.

#1, 9600 CANORA ROAD, SIDNEY, BRITISH COLUMBIA V8L 4R1  
TELEPHONE (604) 656-3987



## DAILY FLIGHT INVOICE — CUSTOMER'S COPY

CONTRACT SCOTTIE GOLD  
ADDRESS

AIRCRAFT	DATE	BASE
<u>C. &amp; WVI</u>	<u>SEPT 6 1987</u>	<u>STEWART</u>

TIME OFF	TIME	REMARKS
<u>0725</u>	<u>06</u>	<u>FLT F.M. BIRD</u>
<u>1317</u>	<u>09</u>	<u>" " "</u>
TOTAL	<u>105</u>	VIH FUEL _____
		HRS.

TERMS: NET 30 DAYS. INTEREST AT 2% PER MONTH (24% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS.

This company complies with the CODE OF ETHICS of the Helicopter Association International

INVOICE NUMBER 39860

SIGNATURE	PILOT





SHELL CANAD LIMITED  
SHELL CANADA LIMITEE

75 WYNFORD DR. - DON MILLS. ONT. M3C 2Z4



FROM DE STEWART	DATE SHIPPED DATE D'EXPÉDITION JULY 27/83	CUSTOMER'S ORDER DEMANDE DU CLIENT SEP-6 1983	INVOICE FACTURE 346-330
DATE	CAR NO. NO DU WAGON	VIA NORTHAIR MINES LTD.	TERMS CONDITIONS

SOLD TO

SCOTTY GOLD MINES LTD (MPL)  
BOX 308  
STEWART B C

SHIPPED TO EXPÉDIÉE À

STEWART B C

VENDU À

VOT 140

3 F 04 5 665 025 200 - 5 665 025 002

PROVINCIAL SALES TAX LICENCE  
LICENCE DE TAXE PROVINCIALE DE VENTE

23 5 0272 0728 1 002 220

PACKAGES EMBALLAGES		PRODUCT PRODUIT	QUANTITY QUANTITÉ	PRICE PRIX		AMOUNT MONTANT
NO	SIZE FORMAT			XXXXX PER UNIT X/UNITÉ	GAS TAX TAXE SUR L'ESSENCE	
		SHELL JET B ( 1352.8 GALS. )	6,150.0 LITRES	.0344	.6165	3,791.48
		SHELLDRILL 220	410.0 LITRES		1.2500	512.50
		LIGHT GAUGE DRUMS - 110/205 LITRES .	32		30.000	960.00
		SALES TAX BR. COLUMBIA TOTAL ON THIS INVOICE DUE TO ERROR IN TAX			.0700	35.88
						5,299.86

OK FOR PAYMENT FROM DELIVERY TICKET

CHEQUE NO.

CODE	AMOUNT
555-04	608.37
411-04	469.49



SHELL CANADA LIMITED  
 SHELL CANADA LIMITEE  
 75 WYNFORD DR. - DON MILLS, ONT. M3C 2Z4

FROM DE <b>STEWART</b>		DATE SHIPPED DATE D'EXPÉDITION <b>AUGUST 24/83</b>	CUSTOMER'S ORDER COMMANDE DU CLIENT	INVOICE FACTURE <b>346-5A1</b>
DATE	CAR NO. NO DU WAGON	VIA	F.O.B. F.A.B.	TERMS CONDITIONS

SOLD TO  
 SCOTTY GOLD MINES LTD (MPL)  
 BOX 30P  
 STEWART B.C.

SHIPPED TO EXPÉDIÉE À  
 STEWART B.C.

VENDU À  
 VOT 1W0

F 04 5 665 025 200 - 5 665 025 002

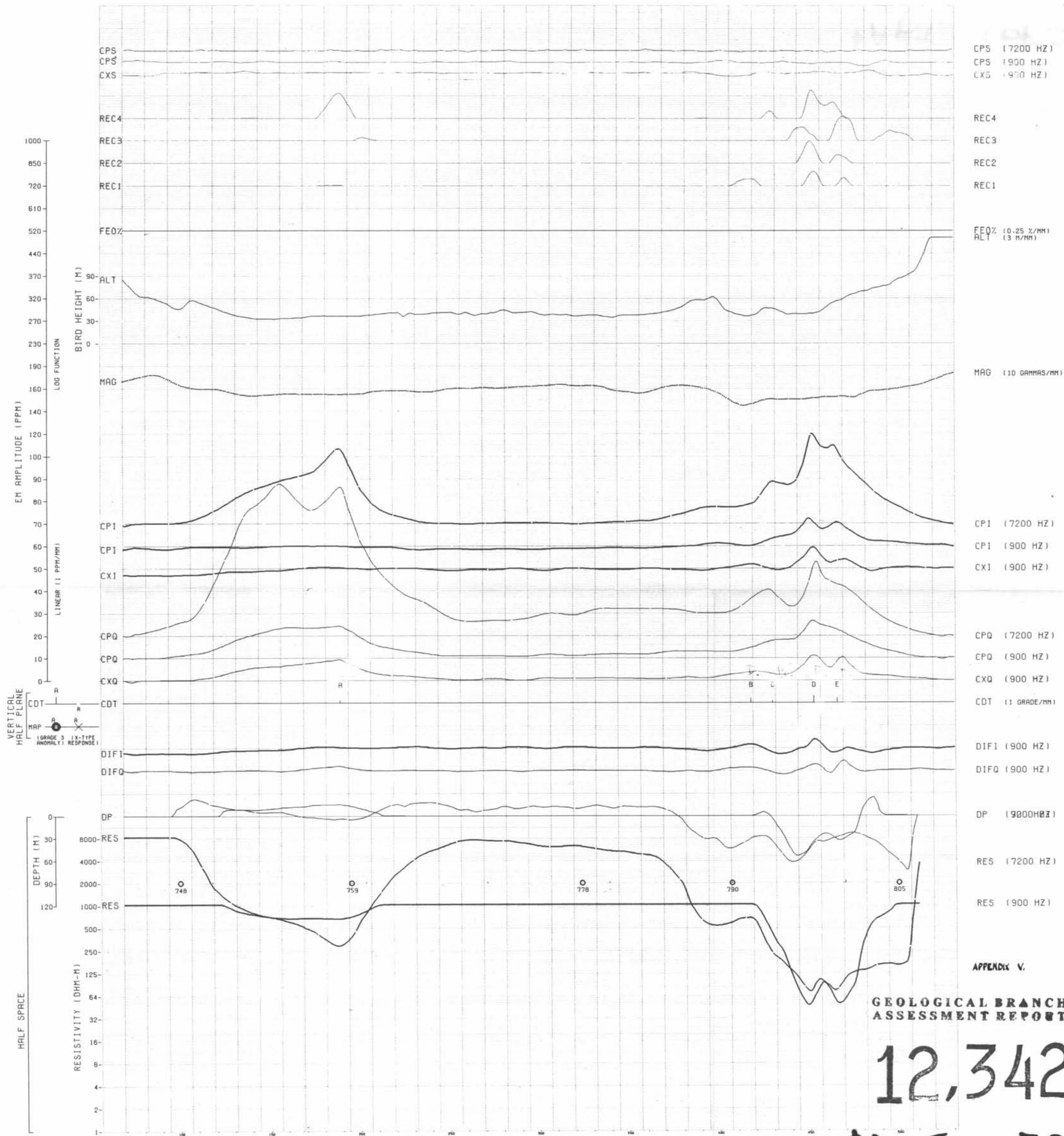
PROVINCIAL SALES TAX LICENCE  
 LICENCE DE TAXE PROVINCIALE DE VENTE

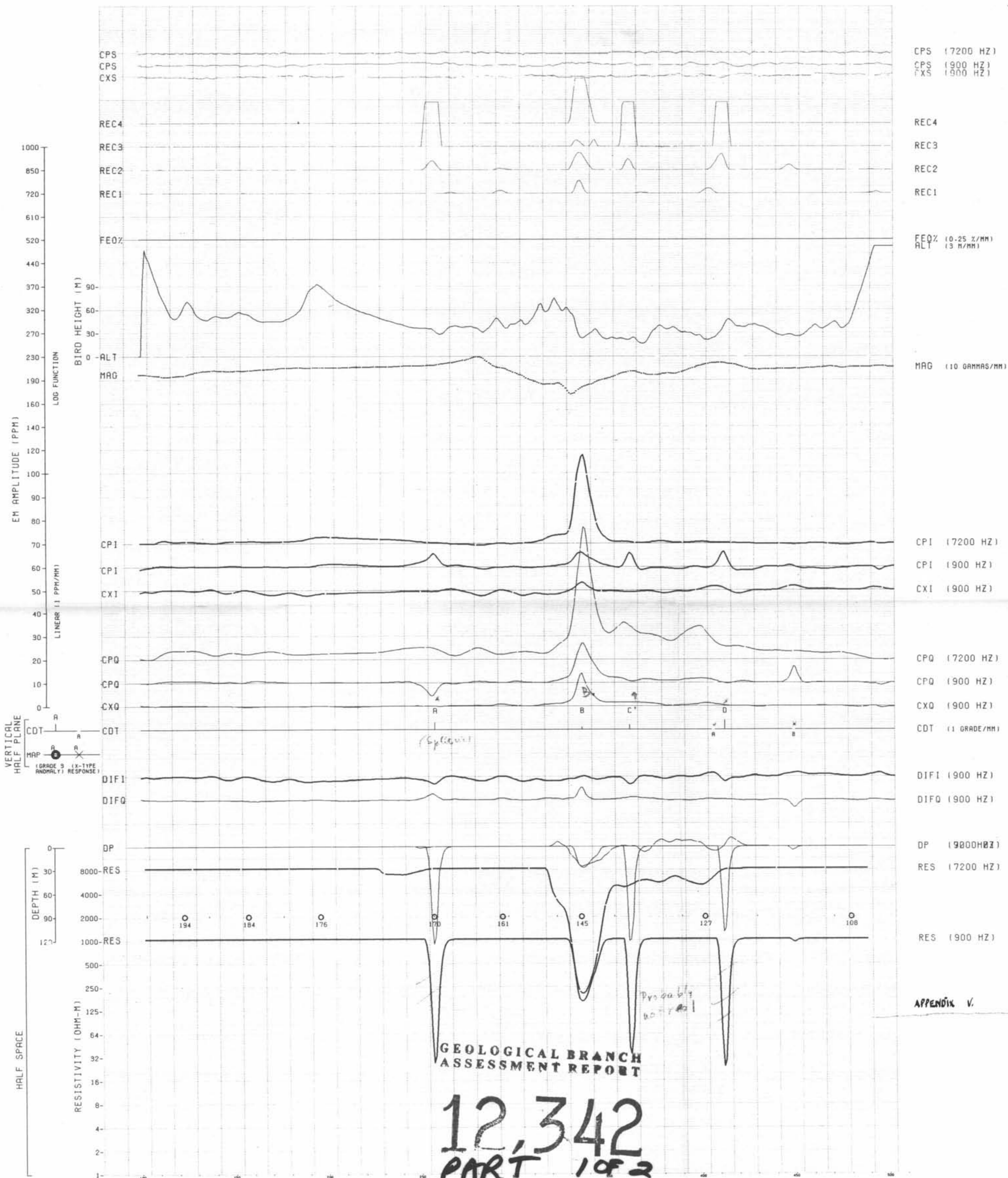
23 0 0272 0825 1 369 244

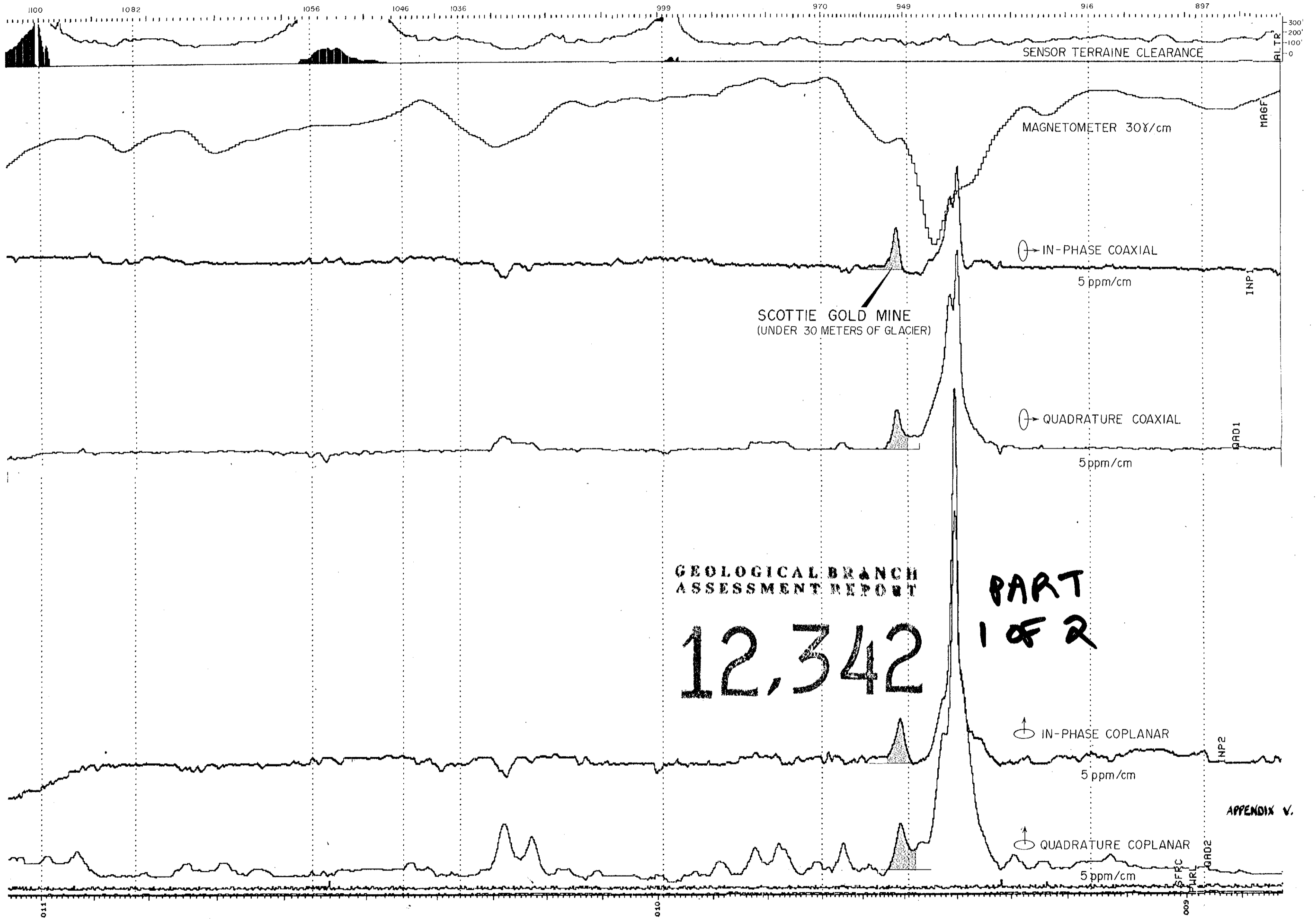
NO. NO.	DESCRIPTION	PRODUCT	QUANTITY	PRICE		AMOUNT
				GAS TAX TAXE SUR L'ESSENCE	TOTAL	
	SHELL JET B ( 1352.8 GALS. )		6,150.0 LITRES	.0384	.6165	3,791.4
	LIGHT GAUGE 110/205 LITRES					900.0
						30.000
						4,691.4



OK FOR PAYMENT  
*[Signature]*  
 AMOUNT







SCOTTIE GOLD MINE  
(UNDER 30 METERS OF GLACIER)

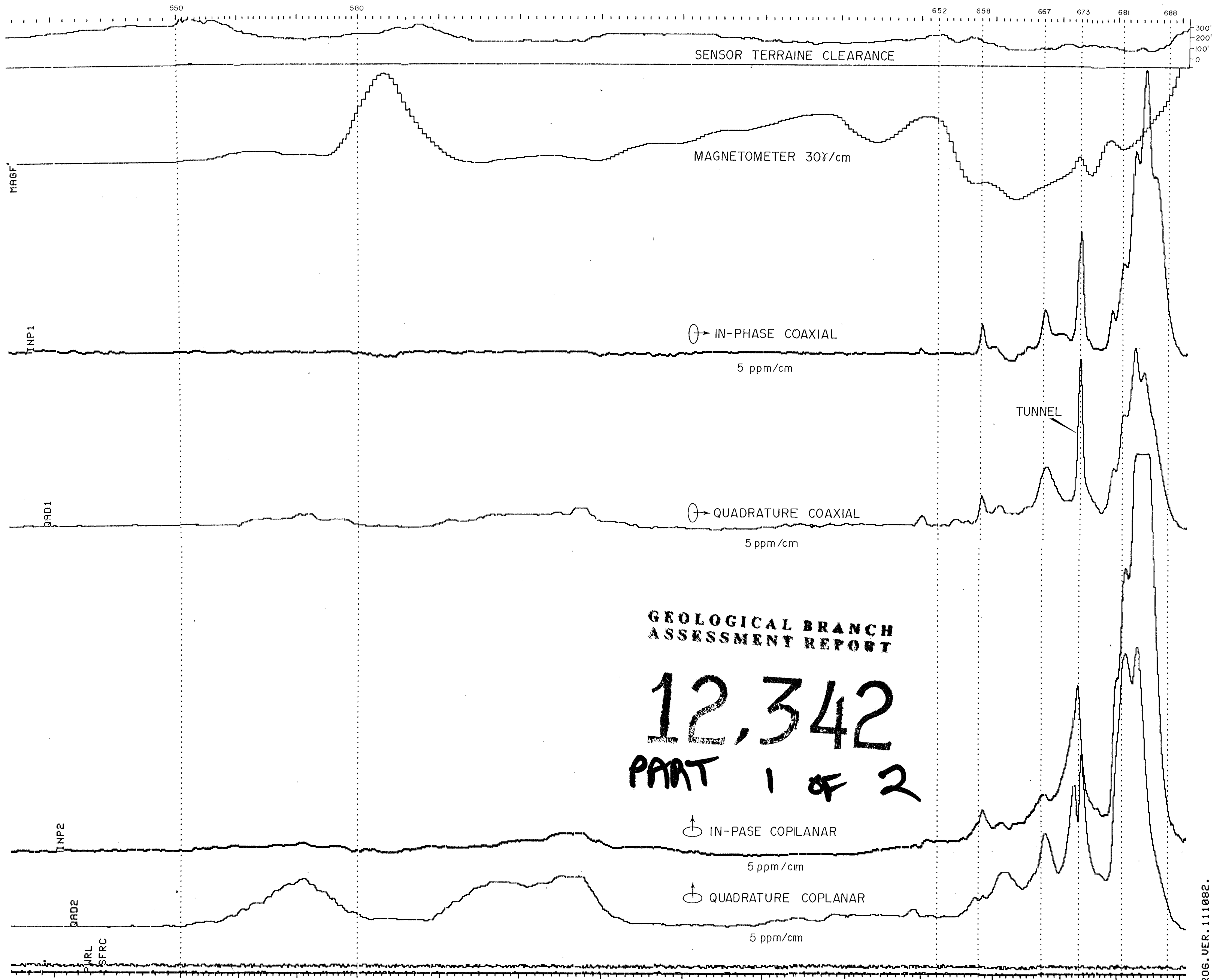
GEOLOGICAL BRANCH  
ASSESSMENT REPORT

12,342

PART  
1 OF 2

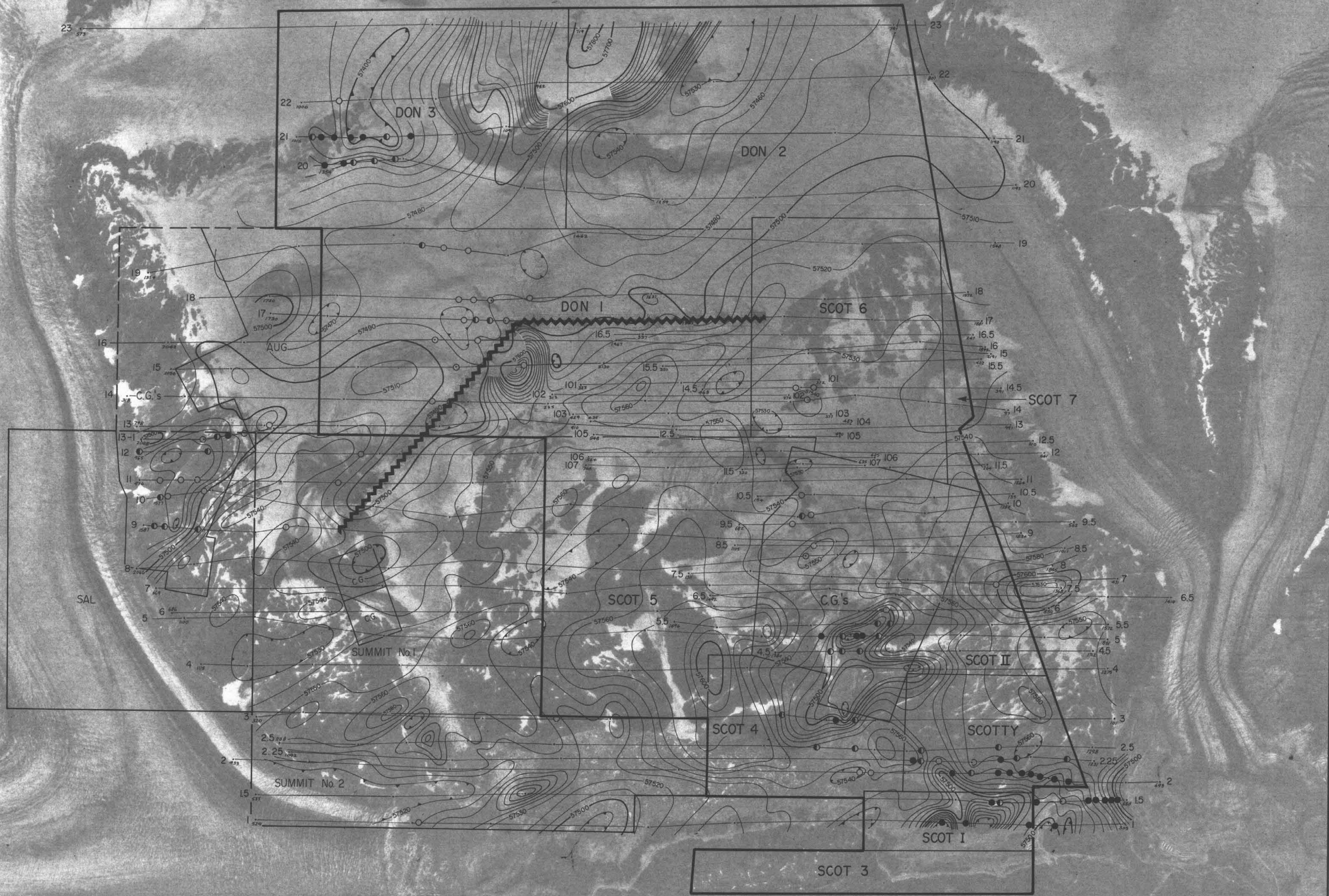
APPENDIX V.

APEX DATA L5  
(LINE 20 DIGHEM DATA)



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**12,342**  
**PART 1 OF 2**



**PART**  
**12,342** 1 of 2



LEGEND	
●	PRIORITY 1 Conductor
●	PRIORITY 2 Conductor
○	PRIORITY 3 Conductor
○	Magnetic Low
	Magnetic contour interval 10 gammas
———	Interpreted contact

PLATE I	
SCOTTIE GOLD MINES LTD.	
E.M. ANOMALY & MAGNETIC CONTOUR MAP	
SUMMIT LAKE AREA	
SKEENA MINING DIVISION	
1:15,000	
METRES 0 300 600 900 1200 METRES	
N.T.S. 104 B/1, 104 B/8	DATE. OCTOBER-1983
APEX AIRBORNE SURVEYS LTD. VANCOUVER, B.C.	